

**DAWSON COUNTY
Community Wildfire Protection and
Pre-Disaster Mitigation Plan**



Ice jam flooding along the Yellowstone River at Glendive

**Prepared by: Cossitt Consulting
Beck Consulting
Rand Herzberg**

FINAL-December 2005

**DAWSON COUNTY COMMUNITY WILDFIRE PROTECTION
PRE-DISASTER MITIGATION PLAN
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RESOLUTION NO. 951

**A RESOLUTION TO APPROVE AND ADOPT
THE DAWSON COUNTY COMMUNITY WILDFIRE PROTECTION
AND PRE-DISASTER MITIGATION PLAN**

WHEREAS, Dawson County has prepared a Community Wildfire Protection and Pre-Disaster Mitigation Plan ("the Plan");

WHEREAS, the Plan covers rural areas of the county and all of the incorporated communities, including the town of Richey, and the City of Glendive; and

WHEREAS, the Plan meets all 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.

NOW, THEREFORE BE IT,

RESOLVED, the Dawson County Community Wildfire Protection and Pre-Disaster Mitigation Plan is approved and adopted.

FURTHER RESOLVED, the Dawson County Community Wildfire Protection and Pre-Disaster Mitigation Plan, is to be followed and incorporated into planning for the County.

FINALLY RESOLVED, the County will work and cooperate with the two incorporated communities in the County to implement the Dawson County Community Wildfire Protection and Pre-Disaster Mitigation Plan.

PASSED and APPROVED by the Dawson County Commission this 3rd day of November, 2005.

FOR THE COUNTY OF DAWSON, MT

By: William E. LaBree
William E. LaBree, Chairman

James Skillestad
James Skillestad, Member

Adam J. Gartner
Adam J. Gartner, Member

FOR THE CITY OF GLENDIVE, MT

By: Jerry Jimison
Jerry Jimison, Mayor

FOR THE TOWN OF RICHEY

By: John Whiteman Jr.
John Whiteman, Mayor

Attest: Maurine Lenhardt
Maurine Lenhardt, Clerk & Recorder




Dawson County, Montana

**Community Wildfire Protection Plan
Approval Signatures**

Dawson County Fire Warden and West Glendive Fire Department Chief

Date: 11-16-05



Tim Mort

Richey Volunteer Fire Department Chief

Date: 11-1-05



Butch Raisl

Dawson County Disaster and Emergency Services Coordinator

Date: 11-16-05



Helen Conradsen

**Dept. of Natural Resources and Conservation, Eastern Area Land Office,
Area Manager**

Date: 12-6-05



Rick Strohmeyer

Executive Summary

Dawson County, Montana, established in 1896, is home to 8,776 residents. The county has prepared this community wildfire protection and pre-disaster mitigation plan for the purpose of becoming more disaster resistant. Every effort was made to draw all interested parties into the preparation of the plan whether formally at the series of public meetings, or informally through one-on-one conversations. A Steering Committee appointed by the county commissioners oversaw the preparation of the plan by a contractor. The mitigation goals, objectives, and actions or projects were developed utilizing a wide range of expertise and interests located within the county.

The natural disasters of most concern to participants in the planning process were drought, flooding, hazardous material spills, severe winter storms, and wind events. Each of these hazards and wildland fire is profiled in the following plan with a discussion of historic occurrences and vulnerability. Loss estimates for each of the hazards of concern in the county indicate that a flood of the Yellowstone River in the city of Glendive would likely cause the greatest direct economic impact within the county and could cause the loss of one or more lives.

The three jurisdictions, the town of Richey, the city of Glendive, and Dawson County, have somewhat, but not significantly different risk exposure. Richey has direct risk exposure to three of the hazards; hazardous material spills, wind events, and winter storms. The city of Glendive has exposure to flooding (Yellowstone River and flash flooding), hazardous material spills, wind events, and severe winter storms. The county has exposure to all five of the hazards, but especially flash flooding, drought, and wildland fire. Although person-caused fires generally occur along travel and railroad corridors, wildfires started by lightning can occur anywhere in the county. Hazardous materials pass through the town, city, and county on the railroad and state and federal highways. Other hazardous materials are sited in the two communities.

Five goals with corresponding objectives and projects were developed for the identified hazards of concern. Three additional goals, found in Chapter V were developed for fire protection.

- Reduce and avoid flood damage to people and property.
- Reduce the potential for hazmat spills and releases, and mitigate the potential impacts to life and property.
- Manage the impacts of severe winter storms.
- Minimize personal injury and economic effects of wind events.
- Minimize impacts and be prepared to respond to drought-related events.

This plan serves the following jurisdictions, the town of Richey, the city of Glendive, and Dawson County.

ACRONYMS USED IN THIS PLAN

BLM	Bureau of Land Management
CD	Conservation District
CRP	Conservation Reserve Program
CRV	Current Replacement Value
CWPP	Community Wildfire Protection Plan
DEQ	Montana Department of Environmental Quality
DES	Disaster and Emergency Services
DOL	Montana Department of Livestock
DNRC	Department of Natural Resources and Conservation
DPHHS	Montana Department of Public Health and Human Services
E-911	Enhanced 911 emergency calling
EMS	Emergency Medical Services
EOP	Emergency Operations Plan
FEMA	Federal Emergency Management Agency
FmHA	Farmers Home Administration
FSA	Farm Service Agency (US Department of Agriculture)
FWP	Montana Fish, Wildlife and Parks
HAZMAT	Hazardous Materials
ISO	Insurance Services Organization
LEPC	Local Emergency Planning Committee
MACO	Montana Association of Counties
MBMG	Montana Bureau of Mines and Geology
MDT	Montana Department of Transportation
MDU	Montana Dakota Utilities
NFIP	National Flood Insurance Program
NFP	National Fire Plan
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources and Conservation Service
NWS	National Weather Service
PDM	Pre-Disaster Mitigation
PPE	Personal Protective Equipment
RFA	Rural Fire Association
RFD	Rural Fire Department
USDA	United States Department of Agriculture
USGS	U.S. Geological Survey
VFA	Volunteer Fire Association
WUI	Wildland Urban Interface

Chapter I: Introduction

Authority

Dawson County intends to become a disaster resistant community by preparing and implementing this Community Wildfire Protection and Pre-Disaster Mitigation Plan. The plan identifies mitigation measures to be taken, guides the expenditure of funds, and raises the awareness about the importance of taking personal and collective (public and private) responsibility for reasonably foreseeable natural disasters. The plan has been prepared utilizing funds from the Bureau of Land Management supplemented by county match. The plan meets the requirements of the National Fire Plan and 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 six major chapters.

- Chapter I. Introduction

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

- Chapter II. Planning Process

This chapter describes how the plan was developed, including public involvement.

- Chapter III. Hazard Evaluation and Risk Assessment

This chapter gives information about historical disaster occurrences in the county then lists potential hazards, hazard profiles, critical facilities, and vulnerabilities. Chapter III also provides information about asset values, for example, how much the county courthouse, city hall, or hospital would cost to replace if it was lost in a disaster.

- Chapter IV. Mitigation Strategy

This chapter takes the hazard information and develops goals, objectives 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. Wildfire Protection

This chapter addresses wildland fire issues for the county. The current situation with respect to vegetation and fuels, past occurrences of fire, values at risk, and potential losses are described. This chapter also contains goals, objectives, and mitigation actions (projects) that can be done to reduce risk of wildland fire. The projects are prioritized.

- Chapter VI. Plan Maintenance

This chapter describes how the plan is to be maintained and kept current. It identifies those responsible for maintaining the plan.

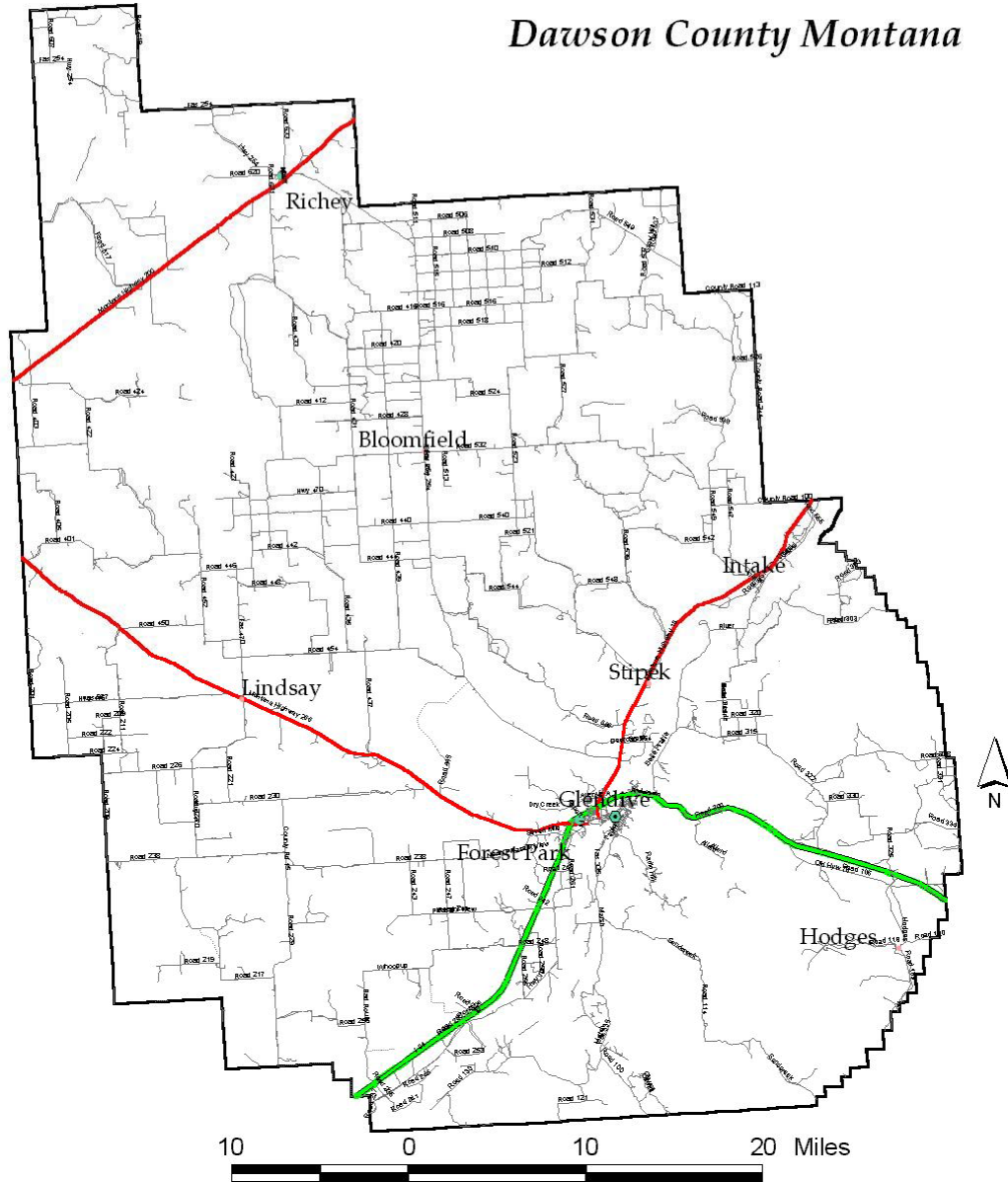
Preparation of the Plan

The pre-disaster mitigation section of the plan was prepared by Barb Beck, the community wildfire assessment and mitigation was prepared by Rand Herzberg. Both planners were under contract to Cossitt Consulting. County Disaster and Emergency Services Coordinator, Helen Conradsen, served as the primary contact for the county and assisted in data collection, public involvement, and document review. City and county fire staff were instrumental in developing the wildfire risk assessment and mitigation. A portion of the photographs utilized in the news releases and the plan, and maps contained in the plan were provided by District IV Disaster and Emergency Services Representative, Norman Parrent. Each of the signing entities to the plan, the Town of Richey, the City of Glendive, and Dawson County participated in the development of the plan through the Steering Committee, specifically by providing data, identifying mitigation projects, and helping to set priorities.

Project Area

The project area for this plan is Dawson County, Montana, established in 1869. The county is located in eastern Montana. It borders Wibaux County to the east, Richland County to the north, Prairie County to the southwest, and McCone County to the west.

Dawson County Montana



Dawson
MFGS 0115
10
08/09/01

Dawson County Roads

- Road
- Interstate Highway
- Secondary Highway
- Local road or street
- Four-wheel-drive trail
- Path or Alley

The county contains one incorporated town, Richey, and one city, Glendive, which serves as the county seat. The county encompasses 2,358 square miles. (Montana Association of Counties) The county is rural in nature with a population density of 3.8 persons per square mile. The U.S. Census Bureau estimated the 2003 population of the county at 8,776. In the 2002 census, 189 persons resided in Richey and 4,729 resided in Glendive. The remainder--approximately 44% of the population--resides in unincorporated areas of the county. The county's population decreased by 4.7% from 1990 to 2000. (U.S. Census Bureau QuickFacts) According to the Census Bureau figures for 2000, the county had 3,625 households averaging 2.37 persons per household. The home ownership rate was 74%.

Land Use and Development Trends

Land use in the county has been relatively stable. The majority of the county's population resides in the incorporated communities of Glendive and Richey. Other small communities established during the homestead era have subsequently dwindled in population. Development is concentrated in the Glendive area. The county and city recently initiated preparation of a joint growth policy. Little new construction is occurring.

The Yellowstone River flows through the heart of the county in a northeasterly direction, and is the only perennial stream in the county. All other intermittent streams flow into the Yellowstone when they are running with the exception of the northwestern corner which is drained by the Redwater River. Glendive, the county seat is located right in the river valley with areas of the community and significant constructed assets in the 100-year floodplain. Some portions of the city are protected by a large dike.

Recent commercial construction in the county has occurred in one of two areas, along the interstate at entrance/exit locations, and within Glendive in proximity to the interstate. Some of the newer construction including two large grocery stores and a shopping mall (a total of 11 structures) were constructed in the floodplain of the Yellowstone River. Approval of this construction caused the Federal Emergency Management Agency (FEMA) to sanction the city of Glendive from its Flood Insurance Program (FIP) in the 1980s.

The city is now back in the FIP on a temporary basis and mitigation for the floodplain construction is being negotiated. The mitigation will be costly and funding the mitigation work is a major concern for the city. (City of Glendive, Director of Operations, 1/6/05) Residential development has occurred in the uplands to the south and west of Glendive. This area can be subject to flash floods. The recently completed Rosser Ditch project has addressed much of this problem through construction of several small reservoirs with timed release of water.

The majority of lands in the county are in agricultural production, both farms and ranches. Steeper slopes are used for pasture and range. The 2004 Montana Agricultural Statistics reported there were 522 farms in the county in 2002. The total land in farms was 1,410,885 acres with an average farm size of 2,703 acres. The number of farms, average size of farm, and total acreage in farms all decreased between 1997 and 2002.

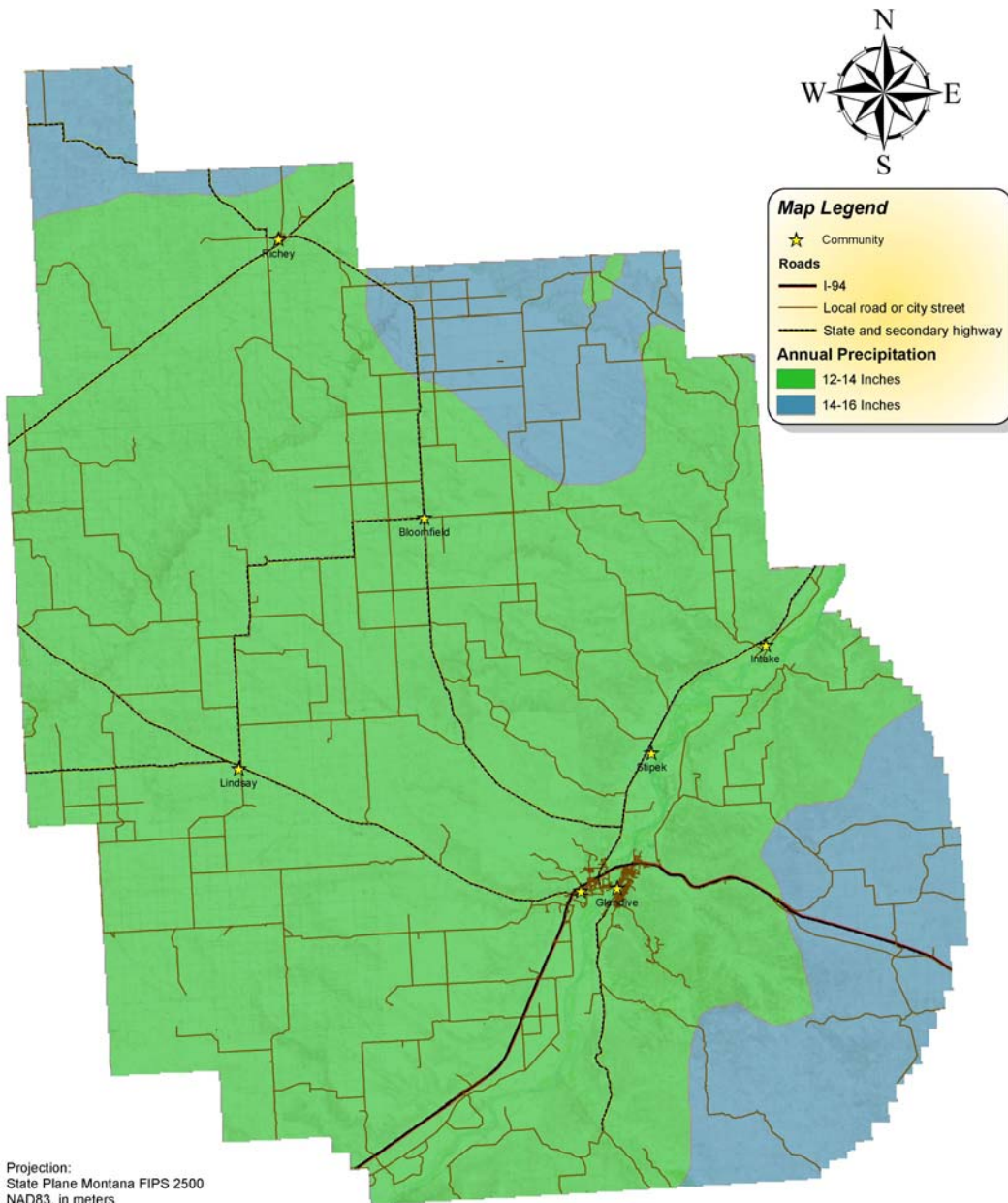
In 2003, the county ranked 3rd in Montana for production of oats, 6th for production of spring wheat, and 9th for production of durum wheat. Dawson County growers also produce barley, hay, sugar beets, corn, dry beans, and safflower. The county ranked 23rd out of the 56 counties in the state in 2004 for cattle and calves with an inventory of 45,000 head. The county ranked 14th in the state for sheep and lambs in 2004, with an inventory of 6,400.

Land ownership in the county is predominately private. Private lands are owned by individuals, farms and ranches, energy companies, and the Burlington Northern Santa Fe (BNSF) railroad. The state of Montana owns what are referred to as “school sections” in each township plus the lands in Makoshika State Park immediately south of Glendive. As of September 30, 2003, the Bureau of Land Management owned and managed 62,026 surface acres and 630,214 subsurface acres of mineral rights. (BLM Acreage Montana, Bureau of Land Management Annual Report, www.mt.blm.gov/ea/annrpt/) Some parts of the county have underground deposits of lignite, and sand and gravel are mined in the county. (Dawson County Soil Survey, U.S.D.A, 1975.)

“The county is characterized by undulating and rolling uplands, but it has a few large, nearly level benches in the uplands. Areas of greatest relief are along the steep north- and west-facing erosional front of the divide between the Yellowstone and Redwater Rivers and in the breaks from the uplands to the Yellowstone Valley.”(Soil Survey of Dawson County, U.S.D.A., 1975) The highest area of the county occurs on the western edge with elevations around 3500 feet. The lowest point in the county occurs along the Yellowstone where it leaves the county entering Richland County. This point is approximately 2000 feet above sea level.

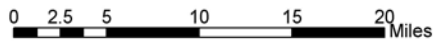
Climate and Weather

Dawson County is located east of the Continental Divide 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) Prevailing winds generally blow from the west and north. 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.



Projection:
 State Plane Montana FIPS 2500
 NAD83, in meters
 November 2005

Data Source:
 Natural Resource Information System
 *Montana Towns
 *Montana Roads from TIGER/Line Files
 *Montana 1:24,000 scale Quadrangles
 *Montana Average Annual Precipitation, 1961-1990



Map Scale 1:350,000

This map was created for fire and disaster planning only. Neither the county or the contractor will be responsible for any data inaccuracies associated herein.

Dawson County Precipitation

Table 1.1. Average Temperatures

	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sep</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Ann</i>
Ave max Glendive	26	31	43	60	71	80	89	88	75	62	43	31	58
Ave min Glendive	4	8	19	33	44	53	59	56	45	34	21	10	32
Ave max Richey	21	29	37	55	68	77	85	85	73	60	42	30	55
Ave min Richey	-3	6	15	29	40	49	54	52	42	31	18	7	28

Notes: Temperatures have been rounded to nearest 1 degree Fahrenheit. Glendive's period of record is 1/1/1893-9/30/2004, Richey's period of record is 7/1/1948 to 9/30/1979. Source: Western Regional Climate Center Period of Record Monthly Climate Summary (wrcc.dri.edu)

The average number of frost-free days in the county at Glendive is 144. Average annual precipitation at Glendive is 13.62 inches. (Montana Agricultural Statistics, 2004) Monthly snowfall records have been kept at the Glendive weather station since January of 1892. The largest amount of annual snowfall on record, 75 inches, occurred during the winter of 1895-1896. The largest amount of annual snowfall on record for Richey, from 1949 to 1979, 40.7 inches, occurred in 1949-1950.

The winter of 1991-1992 holds the record for least snowfall in Glendive among the years that records were complete, at 6.10 inches. The least amount of snowfall for Richey, for years in which there are complete records, 13.4 inches, occurred in 1953-54. The mean annual snowfall amount is 22.87 at Richey and 29.03 inches at Glendive.

Weather events are covered in more detail in Chapter III under each hazard profile.

County Economy

Dawson County residents had a total personal income (TPI) of \$19,500 in 2002. Total personal income includes net earnings, dividends, interest, rent, and personal transfer receipts. In 2002, net earnings accounted for 59% of TPI. (U.S. Department of Commerce, Bureau of Economic Analysis BearFacts Web Site) According to the Montana Department of Labor and Industry as reported on December 21, 2004, the unemployment rate for the county was 2.1%. Dawson County had 304 private non-farm establishments with paid employees in 2001. The private non-farm employment was 2,468. Slightly less than 15% of persons in the county were below the poverty rate. (U.S. Census Bureau QuickFacts Web Page)

According to the latest information available from the U.S. Census Bureau, 1997 County Business Patterns by Standard Industrial Code (SIC), services make up the largest major industrial sector in the county, employing 995 individuals with

an annual payroll of \$13,962,000. The services sector is followed by retail trade with 751 employees and an annual payroll of \$7,802,000. Transportation and public utilities is the third largest sector of the county's economy with 201 jobs and an annual payroll of \$6,087,000. Following these top three in descending order are the wholesale trade; finance, insurance and real estate; construction; manufacturing; and agricultural services, forestry and fishing sectors. The total payroll for all standard industrial codes in the county in 1997 was \$37,429,000.

All cash receipts from the sale of principal agricultural products and government payments in the county for 2002 totaled \$40,379,000. Dawson County ranked 21 in Montana in all cash receipts. (Montana Agricultural Statistics, 2004)

Transportation

Glendive is a highway hub point serving as the intersection for I-94 and several state highways. The primary transportation corridor across the county is Interstate-94. I-94 follows the Yellowstone River bottom from the western edge of the county to Glendive. From Glendive the interstate highway heads east-southeast through dry hilly country. State Highway 16 originates at Glendive and follows the Yellowstone River to the north and east, connecting Glendive to Sidney. State Highway 200S connecting Glendive to Circle heads out of Glendive in a northwesterly direction. The incorporated town of Richey is reached via Highway 254 which runs north from Glendive. Highway 335 heads south out of Glendive and serves as a primary route to the oil fields in Prairie and Wibaux Counties.

The county maintains an extensive network of improved and unimproved roads that primarily follow section lines in the north half of the county and topographic features in the south of the county.

Commercial air service (Big Sky Air) is available at the Dawson Community Airport. Thirty-one aircraft are based at the field and aircraft operations average 111 per week. (www.airnav.com/airport/KGDV)

References

Climate of Montana, Western Regional Climate Center, wrcc.dri.edu
Dorwart, Kevin, City of Glendive, Director of Operations
Montana Agricultural Statistics 2004, Montana Agricultural Statistics Service
Montana Association of Counties Directory, 2005
Montana Bureau of Land Management Annual Report 2004, www.mt.blm.gov
Montana Local Government Center, <http://www.montana.edu/wwwlgc/profiles>
U.S. Census Bureau, <http://quickfacts.census.gov>, <http://censtats.census.gov>
U.S. Department of Commerce, Bureau of Economic Analysis, www.bea.doc.gov
U.S.D.A. Soil Conservation Service, Dawson County Soil Survey, 1975
www.airnav.com (airport information)

Chapter II: Planning Process

Approach

This plan was prepared through a combination of research by the Dawson County Disaster and Emergency Services Coordinator, the Montana DES District IV Representative, the contracted planner, the National Weather Service, and Steering Committee/public meeting input. All individuals contacted for information, from local and state government, to various businesses, were extremely responsive and helpful.

The public involvement philosophy for the preparation of this plan was to ensure that any and all interested individuals be offered the opportunity to participate in plan development. At the same time it was recognized that a number of individuals in key positions were critical resources to the process by virtue of their knowledge and expertise. The process sought to engage both these knowledgeable individuals and the general public. Personal letters of invitation, news articles in the Ranger-Review, and flyers posted around Glendive and Richey were the primary means by which information about the planning process was made available to the public.

Plan Steering Committee

The planning consultant recommended to the County Commissioners that a project Steering Committee be established. The role of the Steering Committee was to represent a wide range of interests, serve as a technical resource, guide the planning process, and finally review the draft document for accuracy and completeness.

At the project kick-off meeting with the County Commissioners, County Disaster and Emergency Services Coordinator, Montana DES District IV Representative, the Bureau of Land Management, and the planning consultant, interests and entities were identified that needed representation on the Steering Committee. All of the interests identified were already represented on the existing Local Emergency Planning Committee (LEPC.)

The County Commissioners invited by letter, the 73 members of the LEPC to serve as the project Steering Committee. These individuals represented local government (town and county), state and federal agencies, emergency services, law enforcement, the airport, the chamber of commerce, stockmen, pipelines, the media, communications, utilities, health care, public schools, and the highway patrol.

**Dawson County LEPC
CWPP/PDM Steering Committee**

Table 2.1.

<i>Last</i>	<i>First</i>	<i>Title/Representing</i>
Anderson	Craig	Sheriff
Asbeck	Hugo	Cedar Creek Grazing Assn.
Atwell	Patty	R S V P Dirirector
Baker	Leon	Airport Manager
Beery	Joe	Richey Public Works
Benson	Mike	Asst. PD Chief
Borntrager	Walt	Conservation District,Chair
Brinkley	Margaret	Ranger Reporter
Broeder	Wally	Ambulance Mgr
Bury	Christie	Chamber, Executive Director
Cameron	Dick	Supt.Gldv Schools
Carlson	Mike	E.M.T. RC&D,Sidney Office
Ching	Elizabeth	Sen. Baucus Reprs.
Clausen	Bruce	DCHS Principal
Conradsen	Helen	DES Coordinator
Crisafulli	Richie	Assist. Fire Chief, Rural Fire
Crisafulli	Pam	Sen. Burns Rep.
Crockett	Ed	Assit. Fire Chief Richey
Dorwart	Kevin	City of Glendive
Dow	Joe	Captain (HP)
Duke	Scott A	CEO GMC
Farber	Ross	Principal Middle School
Feickert	Tracey	Public Health EM Coordinator
Fischer	Stan	MDU Admin.
Fransen	Tanja	NWS WCO
Gartner	Adam	Dawson Co. Commissioner
Gaub	Gary	EMVH Administator
Hetrick	Terry	Comm. College
Hilbert	Ed	Sargent (HP)
Jacobson	Kim	Ranger-Review
Jimison	Jerry	Mayor, Glendive
Keever	Doug	Assist. W Gldv Public Works Director
Kettner	Sherri	Sanitarian Assist.

Knutson	Cory	BNSF Superv. Structures
Labree	Bill	Commissioner, Chiarkan
Lane	George	Gldv Fire Chief
Lenhart	Ralph	St Rep - Dawson Co
Long	Rocky	Mid-Rivers Communications
Lordemann	Hank	Glendive City Council Chairman
Lowe	Tom	BNSF
Luke	Maurice	Ham Radio
Marx	Paula	PD Admin Sec
McBride	Jim	KGLE Manager
McGovern	Sandra	GMC- Personnel
Mengal	Ray	Mt DOT
Micheals	Alan	PD Chief
Mort	Tim	Fire Warden, W. Glendive Rural Chief
Neilsen	John	Chairman, S & R
O'Donnell	Tim	Bridger Pipeline
Oliver	Donna	Clinic Administrtror
Opp	Todd	GMC- Safety
Prescott	Milton	Rep.of Cenex PL
Pulse	Kelly	W Glendive Public Works Director
Quinn	Gary	Bridger Pipeline OP
Raisl	Butch	Richey Fire Chief
Rice	Jack	Shop Foreman Glendive
Sabo	Cliff	Daw Co Road Supervisor
Safty	David	USDA Admin.
Schickanz	Linda	Red Cross- Billings
Seifert	Jeanne	Public Health Director
Shepherd	Kent	MT Dept. of Transportation
Silha	Lance	Coroner
Skillestad	Jim	County Commissioner
Smith	Bruce	Dawson Co Extension Agent
Snow	Dennis	Sanitarian
Sokoloski	Ryan	Park Manager
Stairs	Bruce	Glendive Fire & Ambulance
Stanford	John	BNSF, Division Engineer
Sturlaugson	Paul	KXGN Manager

Unruh	Teresa	Richey Town Clerk
Wade	Bill	Mid-Rivers
Wagner	Craig	WBI, Safety
Wallace	Wilbur	Public Works Director Glendive
Whiteman	John	Mayor, Richey
Whiteman	Tilda	Richey Ambulance
Wilcox	Kathy	GMC- Director of Nursing
Young	Martha	County Supt of Schools
Zander	Jerry	Ranger Review
Zuroff	Gary	Assistant Public Works Director Glendive City/Co. Planning Board

Steering Committee/Public Meetings

Public meetings were held on February 8, April 11, and May 10, 2005. Each meeting was noticed in the Ranger Review with one or more articles and photographs. The articles explained the purpose of the meetings, the planning schedule, the topic for the upcoming meeting, and provided contact information for questions or comments. Following each meeting, the Ranger Review printed an article about the meeting to inform people who may have missed the meeting and encourage future involvement.

The first and third meetings were held in Emergency Operations Center in the county courthouse in Glendive. The first was held on a weekday evening, the third on a weekday afternoon as per request of the participants. The April 11 meeting was held in Richey, the only incorporated community in the county besides Glendive. The mayor of Glendive, the mayor of Richey, and all three county commissioners attended one or more of the meetings. Attendance at the first meeting was 20 with subsequent meetings having fewer attendees. Sign-in sheets are provided later in this chapter.

Meetings were facilitated by the planning consultant according to an agenda developed prior to each meeting. Each meeting began with introductions and an explanation of the purpose of the CWPP/PDM Plan and the planning process. Meetings were focused and time spent efficiently. Following each meeting, a meeting summary was prepared to document the input gathered. These are provided later in this chapter.

Document Review

Draft chapters were prepared according to a schedule for deliverables in the contract and upon completion, provided to the County Disaster and Emergency Services Coordinator.

Following the final public meeting, a draft of the entire document was assembled and provided to the county for public review. The draft document was made available at the town of Richey, city of Glendive, Dawson County, and the Glendive public library. The comment period was open for 30 days, from September 13 to October 13, 2005. The availability of the draft document was announced in the Ranger Review on September 13, 2005.

Comments received from the County DES Coordinator, the County Fire Warden, and one citizen. Following incorporation of the comments received, the plan was finalized. Draft resolutions were prepared for the town of Richey, the city of Glendive, and Dawson County for adoption and approval of the plan. These signed resolutions can be found at the beginning of the plan.



Public Meeting in Glendive, February 8, 2005

Meeting Agendas

**Dawson County CWPP/PDM Plan
Kick-Off Meeting Agenda
January 6, 2005
(2 hours)**

Introductions

What is a PDM Plan, why do one, and what is the planning process?

Quick overview by planning consultant

Review of contract deliverables

Discuss any county or contractor concerns

Coordination

Meeting logistics

Meeting scheduling considerations

Working with the Steering Committee

Communications during the project

Getting to work!

Recollections of past natural disasters

What hazards are of most concern to you?

Information sources (local or county plans, maps, knowledgeable individuals, county records, etc.)

Media contacts

Develop list of potential Steering Committee members

Set first public meeting date, time, and location

Exchange contact information

Other items

Dawson County CWPP/PDM Steering Committee
February 8, 2005
County Courthouse, 7 p.m.
Meeting Agenda

Introductions

Community Wildfire and Pre-Disaster Mitigation Planning (Beck, Herzberg)

- What is a CWPP/PDM Plan and why do one?
- What is the role of the Steering Committee?
- What are the overall timeframes and schedule?

Potential natural disasters

- Group brainstorm of natural hazards
- *Prioritize list of potential disasters*
- Revisit 2002 list of priority hazards, finalize priorities
- Fill out Hazard Worksheet

Critical facilities and vulnerable populations

- What are the critical facilities and infrastructure?
- What are the vulnerable populations?

On-Going or Proposed Development

Revisit Goals from 2002 Effort

1. Flooding
2. Warnings
3. Public education-safety

Wrap-up

- Next steps
- Questions and comments
- Adjourn

DAWSON COUNTY
CWPP/Pre-Disaster Mitigation Plan
Steering Committee/Public Meeting Agenda
April 11, 2005

- **Welcome and introductions**
- **Recap:**
 - Why do a CWPP/PDM Plan?
 - What is in the plan?
- **Discussion and products of first meeting**
 - Risk evaluation and hazard assessment
- **Develop goal statements**
 - Drought, Flooding, Hazardous material transportation incidents, Tornadoes, Winter Storms
- **Develop preliminary list of projects**
- **Wrap-up**
 - Comments/questions on meeting*
 - Review schedule
 - Next steps, next meeting

DAWSON COUNTY CWPP/PDM PLAN
Steering Committee/Public Meeting Agenda
May 10, 2005

Welcome/introductions

Quick Review

- Purpose of PDM Plan
- Where we are in the planning process
- Tonight's tasks

Goals and Objectives

- Goals statements, objectives
- Review preliminary list of projects identified at last meeting
- Review preliminary list of fire projects

Project identification

- List additional project ideas under the objectives

Project Prioritization

- Prioritize all projects in high, medium, and low bands

Wrap-up

- Schedule for finalizing the plan
- Where to find copies
- How to comment
- Thank you for your participation!

Meeting Summaries

Project Kick-off Meeting Notes Dawson County CWPP/PDM Plan January 6, 2005

Introductions

Participants introduced themselves and signed in. In attendance: Barb Beck, Helen Conradsen, Anne Cossitt, Adam Gartner, Bill LaBree, Norman Parrent, Brad Sauer, Jim Skillestad.

What is a CWPP-PDM Plan and Why Do One?

Barb Beck reviewed what a CWPP-PDM plan is and why preparing this plan will benefit the county. Beck explained that the plan would address the current situation, past disasters, and develop goals and projects. Once the plan is completed the county will be eligible to compete for funds to complete projects.

Coordination/logistics

The group discussed where and when to hold the public meetings. It was decided the first meeting will be at 7 p.m. in the EOC at the county courthouse on Tuesday, February 8, 2005. Subsequent meetings will be held in Richey and Glendive. Barb will develop a letter of invitation to the Steering Committee and Helen will mail the letters. The letter will be signed by the commissioners. The group identified who should be asked to serve on the Steering Committee using the list of LEPC members and expanding upon it to include a variety of interests.

The primary line of communication on the project will be between Helen and Barb. Helen will keep the commissioners appraised as needed. Commissioners are welcome to see all work products as they would like.

Recollections of Past Disasters

The commissioners and DES Coordinator recalled the following incidents: 1930's Yellowstone flooding including fatalities, 1964 windchill of -100 degrees lost livestock, mid-1970's winds and tornados, Labor Day 1980 wildfire jumped the Yellowstone River, burned to coal mines, 1994 flooding and icebergs on Yellowstone River, 1995 ice against the dike bank and evacuations in W. Glendive, 1999 winds strong enough to pick up round bales, Feb. 2004 heavy snow and winds closed interstate, Aug. 2004 3,500-acre Three-Mile Fire on Richey Highway.

The commissioners and DES Coordinator stated that the things they were most concerned about related to potential disasters included: wildfire and flooding of the Yellowstone River.

CWPP/PDM Plan Steering Committee Meeting Notes
February 8, 2005
County Courthouse EOC, Glendive

The meeting was noticed in the Glendive Ranger Review. Invitation letters were mailed to each Steering Committee member two weeks prior to the meeting.

CWPP/PDM Planning

Planner, Barb Beck, gave a brief presentation explaining what a Community Wildfire and Pre-Disaster Mitigation Plan is and why the county is preparing the plan. The benefits include being prepared for a disaster, and being eligible for project funds and for post-disaster assistance if something were to happen. Beck also explained that a previous effort to prepare a PDM plan was initiated in 2002, but never completed and that the current effort will build on that work.

Potential Natural Disasters

The Steering Committee and public brainstormed a list of potential natural and other disasters/hazards in the county. The whole group prioritized the hazards of most concern for the future.

- 1) Flood of the Yellowstone River
- 2) Wildfire (mostly on CRP lands)
- 3) Blizzard
- 4) Hazardous material incident (railroad, interstate, or pipeline leak)
- 5) Drought (water to city and for livestock)
- 6) Tornadoes
- 7) Transportation disaster

The group then looked at the priorities from the 2002 pre-disaster planning effort and found the two were closely aligned with the exception of wildfire.

All participants then filled out a worksheet which rated the history, probability, and consequences of each of the above hazards. The results were tallied as follows.

Dawson County CWPP/Pre-Disaster Mitigation Plan
Steering Committee/Public Meeting
February 8, 2005

Tally for All Participants-Hazard Worksheet

<i>Type</i>	<i>History</i>	<i>Probability</i>	<i>Consequences</i>
Drought	Low Mod High 3 15	Low Mod High 9 7	Low Mod High 5 8 4
Flood	Low Mod High 4 3 11	Low Mod High 4 10 3	Low Mod High 3 9 5
Tornado	Low Mod High 8 8 2	Low Mod High 11 5 1	Low Mod High 9 6 2
Wildfire	Low Mod High 5 12	Low Mod High 12 5	Low Mod High 7 8 2
Wind Storm/Hail	Low Mod High 4 11	Low Mod High 1 9 6	Low Mod High 5 6 5
Winter storm	Low Mod High 5 11	Low Mod High 1 11 4	Low Mod High 10 6
HazMat Incident	Low Mod High 6 8 2	Low Mod High 6 8 1	Low Mod High 8 8
Transportation Disaster	Low Mod High 8 6 2	Low Mod High 11 5	Low Mod High 9 5 2

Note: N = 18, but not all participants filled out each box.

How to rate history

Low = 0-1 major incidents in the last 100 years

Moderate = 2-3 major incidents in the last 100 years

High = 4 or more major incidents in the last 100 years

How to rate probability

Low = 0-1 major incidents in a 5-year period

Moderate = 2-9 incidents in a 5-year period

High = 10 or more incidents in a 5-year period

How to rate consequences (an average event, not the worst case)

Low = no serious injury or loss of human life, damage is less than \$500,000.

Moderate = Loss of human life and/or damage between \$500,000 and \$3 million.

High = Multiple lives lost and/or damage greater than \$3 million.

Critical Facilities in Dawson County

Participants brainstormed critical facilities for continuing government operations and protecting public health and safety in the event of a disaster.

- Airport
- Fire Stations in Glendive, West Glendive, Richey (and contents)
- Water Treatment Plant-Glendive
- Water Treatment Plant-Richey
- Medical facilities-hospital and clinic
- Veteran's Administration Nursing Home
- Law Enforcement Center and dispatch center
- Albertsons, Reynolds Grocery Stores
- Glendive WAPA junction substation
- Electric and gas substations
- I-94 bridges
- Town Street bridge
- Bell Street bridge
- County Courthouse
- City Hall
- Cenex Pipeline
- Dawson Community College
- Public Schools
- Tower Hill Radio Site
- Radio Stations (3)
- Television station
- Sewer system lift stations (3)

Vulnerable Populations

GMC Hospital/nursing home/assisted living facility
VA Nursing Home
Grandview Retirement Assisted Living
Group Homes (7)
WATCH East (rehab facility)
State Prison
Public Schools, College
Valley View Christian School
Day care and preschools

On-going or Proposed Development

On-going and proposed development is limited to the Sunrise Subdivision, Taylor Avenue, and the Dawson Community College. None of the development is occurring in the floodplain of the Yellowstone River.

Plan Goals

Beck presented the draft goals from the 2002 effort for informational purposes and to stimulate thinking for the two future meetings. The three goals from 2002 were; Reduce or avoid flood damage to people and property, Provide warning for severe hazards to prevent or limit damage to lives and property, and Increase safety of citizens by public education.

Wrap-up

The information from this meeting will be used to do research and background writing. The next planning meeting will be held the afternoon of April 11, in Richey. Participants were encouraged to attend the two future meetings where goals and projects will be identified and prioritized.

**Dawson County
Steering Committee/Public Meeting Notes
April 11, 2005, Richey**

Welcome

Participants were welcomed and introduced themselves. The meeting agenda was reviewed.

Recap

Barb reviewed the purposes for preparing a PDM plan. They are to think ahead of time about natural disasters to prepare for them, to be eligible for project funds, and to be eligible for post-disaster assistance from FEMA. She explained that the plan looks at historical information about disasters in the county as a way of identifying what might happen in the future.

The plan is being prepared under the guidance of a steering committee. The fire sections are being prepared with the assistance of the fire personnel in the county. The first meeting was held in Glendive in February and the group identified the hazards of most concern to them as flooding of the Yellowstone River, drought, hazardous material incidents, and tornadoes and wind events. Barb presented some of the results of her research into past disasters of these types.

Goal Statements

After reviewing the goals from the 2002 effort, the group suggested the following goals.

Reduce the potential for hazmat spills and releases, and mitigate the potential impacts to life and property.

Projects suggested for the Richey area included:

Secure the Harvest States anhydrous ammonia plant in Richey to prevent accidental or unauthorized access.

Develop an evacuation/warning plan for Richey in the event of an anhydrous ammonia leak or other hazmat spill or release.

Look into a regulatory mechanism for managing parking and transport of vehicles carrying hazardous materials through Richey.

Make shelter-in-place brochures available to the town.

Manage the impacts of severe winter storms.

Minimize personal injury and economic effects of wind events.

Projects suggested for the Richey area included:
Address the hazard associated with tin blowing off the unused grain elevator.
Alert and educate citizens about safety.
Ensure that the school has access to the most current weather info.
Distribute cards with numbers to obtain weather information.

Minimize impacts and be prepared to respond to drought-related events.

Be prepared for wildfires.
Conduct large scale spraying for insect infestations.
Support continued flexibility on CRP lands.
Bring in training for producers on crop, livestock options during drought.

Flooding

The group did not develop a specific goal statement, but did recommend seasonal reminders in the media about flash flooding.

The group had general discussion about how to get information to citizens in the area.

Mid-Rivers has an information page on the tv.

Richey school has a daily e-mail

The town of Richey has a siren system.

NWS radio.

KGLE, Williston 660, and the Wolf Point radio station are listened to in the area.

Wrap-up

The third meeting will be held in Tuesday, May 10, in Glendive. At that meeting, the project list will be finalized and prioritized. A draft plan will be compiled and provided for public review. Following incorporation of comments received, the plan will be finalized. It will be submitted to the county commissioners and Town of Richey for approval then go to the state and finally FEMA.

DAWSON COUNTY CWPP/PDM PLAN
Steering Committee/Public Meeting Notes
May 10, 2005

Welcome

Barb Beck welcomed participants and explained that this was the third and final planning meeting for the CWPP/PDM plan for Dawson County.

Quick Review

Contractor Beck reviewed the purpose of PDM Plan, who approves it, and how it has been funded. She explained that the tasks for the afternoon were to review the goals, objectives and projects, add or delete, and prioritize the projects.

Goals and Objectives

A preliminary draft of the hazard mitigation chapter including the goals, objectives, and projects was handed out. The group read through the goals, objectives, and projects for the non-fire potential disasters. Projects were added and deleted. The contractor presented the three draft fire goals.

Project Prioritization

Meeting participants went through each project as a whole group and prioritized them into high, medium, or low based upon subjective judgment against the following criteria. The prioritized projects are listed in Table 4.1 in Chapter IV.

- Number of lives at risk
- Value of property at risk
- Infrastructure at risk
- Risk of business interruption/loss
- Cost/benefit of the project

Wrap-up

Barb explained that a draft of the entire document would be available for a 30-day public review period once the maps and fire goals have been finalized. The review period will likely begin in July. Copies will be made available at the Dawson county courthouse, Glendive city hall, Richey town hall, and the public library in Glendive. Once the review period has ended, the plan will be finalized and submitted for approval by the town, city, and county. Following that it will go through state and federal review. Participants were thanked for their involvement in the planning process.

Meeting Sign-in Sheets

Attendance Sheet							
Activity <u>PDM/CWPP Kick-off Meeting - Glendive/Dawson Co.</u>							
Location <u>Glendive</u>		Date(s) <u>1/6/05</u>					
Duration <u>1 1/2 hrs</u>							
Name & Title			Affiliation	E-Mail Address & Phone#	Agency Use Only		
					H	M	T
Name: <u>Norman Paiment</u>			<u>D4 DES</u>				
Title: <u>D4 DES Rep</u>				<u>hules city</u>			
Name: <u>Bubb Beck</u>			<u>Beck Consulting</u>				
Title:				<u>Red Lodge</u>			
Name: <u>Aune Cassitt</u>			<u>Cassitt Cons.</u>				
Title:				<u>Pauls City</u>			
Name: <u>BRAD SAUER</u>			<u>MCFO</u>				
Title: <u>Fire Mgmt.</u>			<u>MT BLM</u>				
Name: <u>ELEN CONRADSON</u>			<u>Dawson</u>	<u>elawodes@midrivers.com</u>			
Title: <u>DES Coordinator</u>			<u>DES</u>	<u>406-317-3562</u>			
Name: <u>Dee J. B. Lee</u>				<u>commish@midrivers</u>			
Title: <u>Commissioner</u>				<u>317-3562</u>			
Name: <u>Idem GARTH</u>				<u>"</u>			
Title: <u>Commissioner</u>				<u>"</u>			
Name: <u>Jim Skillestad</u>				<u>"</u>			
Title: <u>Commissioner</u>				<u>"</u>			
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Attendance Sheet

Activity CWPP/PDM Steering Com. Meeting
 Location Glenview Date(s) 2/8/05
 Duration 2 hours

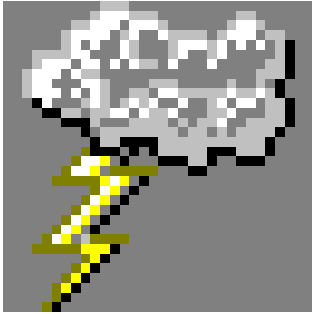
Name & Title	Affiliation	E-Mail Address & Phone#	Agency Use Only		
			H	M	T
Name: <u>Joe Beery</u>		<u>406-773-5695</u>			
Title: <u>CAPTAIN Richey FIRE DEPT</u>					
Name: <u>Ed Crockett</u>		<u>406-773-5711</u>			
Title: <u>Asst. Fire Chief Richey</u>					
Name: <u>Dennis J. Snow</u>		<u>d.snow@midrivers</u>			
Title: <u>SAINT ANTHONY</u>		<u>377-5772</u>			
Name: <u>Maurice Luke</u>		<u>406 687 3304</u>			
Title: <u>Bridges of Placeme/Amateur Radio</u>		<u>mluke@traces.com</u>			
Name: <u>Endrick Stephens</u>		<u>406 377 7680</u>			
Title: <u>HAM/Summit Day Participant</u>	<u>Montana-Dakota</u>	<u>stephens@midrivers</u>			
Name: <u>John Nielsen</u>	<u>Search & Rescue</u>	<u>557 Hs. Block</u>			
Title: <u>President</u>		<u>406 372-2650</u>			
Name: <u>JACK RICE</u>		<u>300 S. MERRILL</u>			
Title: <u>CITY FIREMAN</u>		<u>377-3743 cityshop</u>			
Name: <u>STEVE MERRILL</u>	<u>MONTANA-DAKOTA</u>	<u>2001 N. MERRILL</u>			
Title: <u>ELEC ENG. ASSOC.</u>	<u>UTILITIES</u>	<u>359-3130</u>			
Name: <u>Wilbur Wallace</u>	<u>City of</u>	<u>wallace@midrivers.com</u>			
Title: <u>Director Public Works</u>	<u>Glenview</u>	<u>406-377-3318 ext 15</u>			
Name: <u>Gary Zurett</u>	<u>City of</u>	<u>zurettg@midrivers.com</u>			
Title: <u>Asst. Director Public Works</u>	<u>Glenview</u>	<u>406-377-3318 ext 16</u>			
Name: <u>Jerry Jimison</u>	<u>City of</u>	<u>406-377-3318 ext 11</u>			
Title: <u>MAYOR</u>	<u>Glenview</u>	<u>mayor@midrivers.com</u>			
Name: <u>Barb Beck</u>	<u>Beck Consulty</u>	<u>446-3628</u>			
Title:		<u>Red Lake MT</u>			
Name: <u>Rand Herzberg</u>	<u>Cossitt Consulty</u>	<u>446-2121</u>			
Title:		<u>Red Lake, MT</u>			
Name: <u>Cliff Conradson</u>	<u>Dawson City Des</u>	<u>mapre@midrivers.com</u>			
Title: <u>Deputy Coordinator</u>		<u>406-377-8437</u>			
Name: <u>Greg Lopez</u>	<u>BLM</u>	<u>greg@blm.gov</u>			
Title: <u>Unit/Action Office</u>		<u>blm.gov</u>			
Name: <u>Randy Sanders</u>	<u>DNRC</u>	<u>rsanders@mt.gov</u>			
Title: <u>Fire Program Manager</u>		<u>233-2904</u>			
Name: <u>Andy Lardner</u>	<u>BLM</u>	<u>lardner@blm.gov</u>			
Title: <u>CITY ENGINEER</u>		<u>365-2277</u>			
Name: <u>Tim Mart</u>	<u>West End Fire</u>	<u>martdist@mar.net</u>			
Title: <u>Chief</u>	<u>Dawson Rural Fire</u>	<u>406-365-2177</u>			
Name: <u>HELEN CONRADSON</u>	<u>Dawson Co</u>	<u>dawcodes@midrivers.com</u>			
Title: <u>DES COORDINATOR</u>	<u>DES</u>	<u>406-377-2566</u>			
Name: <u>Leon Baker</u>	<u>Dawson County</u>	<u>airport@midrivers.com</u>			
Title: <u>Airport Manager</u>		<u>406-687-3372</u>			

Attendance Sheet

Activity Dawson Co. CWPP/PDM Steering Com
 Location Richey Date(s) 4/11/05
 Duration 2 hours

			Agency Use Only		
Name & Title	Affiliation	E-Mail Address & Phone#	H	M	T
Name: <u>Maria Unruh</u> Title: <u>Town Clerk</u>	<u>Town of Richey</u>	<u>richeya@midrivers.com</u>			
Name: <u>Helen Combs</u> Title: <u>DES Coordinator</u>	<u>Dawson Co DES</u>	<u>hcombs@midrivers.com 406-377-2566</u>			
Name: <u>Jim Shillington</u> Title: <u>Commissioner</u>	<u>Dawson Co</u>	<u>js@midrivers.com</u>			
Name: <u>Norman Parrent</u> Title: <u>District IV Rep.</u>	<u>DMA/DES</u>	<u>D4DES@midrivers.com</u>			
Name: <u>Paul Beck</u> Title:	<u>Beck Consulting</u>				
Name: <u>Dee Kanning</u> Title: <u>Stockman Bank</u>	<u>Stockman Bank</u>	<u>Richey, MT 406-773-5521</u>			
Name: <u>John Whitman Jr.</u> Title:	<u>Town of Richey</u>	<u>Richey, MT</u>			
Name: <u>Craig J. Anderson</u> Title: <u>Sheriff</u>	<u>DCSO</u>	<u>cjanderson@midrivers.com 377-5291</u>			
Name:					
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Meeting Flyers and News Articles from the Ranger Review



DAWSON COUNTY DISASTER PLANNING MEETING

Monday, April 11
2:00 p.m.
Stockman Bank

Open to the public.
Anyone with an interest is encouraged to attend and participate.

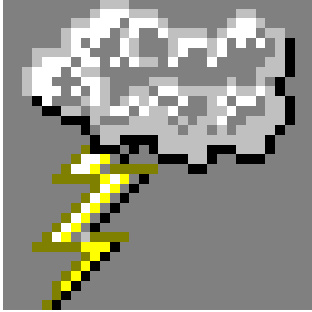
For more information, contact:
Disaster Emergency Coordinator, Helen Conradsen, 377-8437
Contractor, Barb Beck, 446-3628



nvtech.com



nvtech.com



DAWSON COUNTY DISASTER PLANNING MEETING

Tuesday, May 10

2:00 p.m.

County Courthouse EOC

Open to the public.

Anyone with an interest is encouraged to attend and participate.
For more information, contact: County DES Coordinator, Helen
Conradson, 377-2566 Contractor, Barb Beck, 446-3628

Local agency prepares mitigation plan for natural disasters

Dawson County has experienced many natural disasters over the years. Some of these include severe winter storms such as the one that occurred in March 1907, when according to the Glendive Independent, "many stock animals have been frozen to death, getting caught in the storms, and losses are expected to be high by spring." The Dawson County Review reported in April 1943, "The worst flood conditions in history have prevailed in eastern Montana the past week. The Fallon highway bridge was carried away Sunday afternoon and traffic is being routed via Circle and Jordan." In 1959, "the mighty Yellowstone hurled ice cakes larger than automobiles against its banks and into the low lying areas of the community" reported the Daily Ranger. Tornadoes, drought and other natural disasters have also occurred in the county.

"I've been a rancher all my life. So, I've been in a lot of disasters — blizzards, wind — you name it. Those farmers and ranchers when faced with disasters, they need all the help they can get" stated Jim Skillestad, Dawson County Commissioner, at the project kick-off meeting held on Thursday with the planning contractors.

Each natural disaster has the potential to take lives, destroy property, and inter-

rupt transportation and commerce. And, natural disasters are costly. For all of these reasons, Dawson County is joining other counties across the country to prepare a Community Wildfire Protection and Pre-Disaster Mitigation Plan. Preparing the plan is a requirement for eligibility for emergency relief funds from the Federal Emergency Management Agency should the county experience a natural disaster. The project is made possible by funding from the Bureau of Land Management.

Cossitt Consulting out of Park City, will be preparing the fire/disaster plan under the guidance of an expanded Local Emergency Planning Committee with representation from elected officials, law enforcement, emergency medical services, fire protection, disaster emergency services, county public health, public works, the chamber, the insurance industry, trans-

portation, utilities, and the public school system.

The first meeting of the LEPC/Steering Committee is scheduled for 7 p.m. on Tuesday, Feb. 8. The meeting will take place in the Lower Level Meeting Room of the county courthouse in Glendive. A total of three meetings to develop the plan will be scheduled in Glendive and Richey over the next six months and anyone interested in participating is encouraged to do so.

As a part of developing the plan, past disasters need to be documented and analyzed. "I'm really interested in hearing from long-time residents who have memories — even if they are just vague memories — of floods, wild fires, winter storms, or other natural disasters" stated Barb Beck. Anyone with information to share or questions about the project is encouraged to contact Beck at 446-3628.

Pre-disaster mitigation committee meeting set

The first meeting of the LEPC/Pre-disaster Mitigation Plan Steering Committee is scheduled for 7 p.m. on Feb. 8. This meeting will take place in

the lower level meeting room of the Dawson County Courthouse. Anyone interested is encouraged to attend the meeting.

The Disaster and Emergency Service office and Rural Addressing offices has moved to the former Youth Assessment Center.

Community Calendar

SUNDAY, FEBRUARY 6
Celtic committee, 6:30 p.m., Courthouse community room
Featured Artist's Tea, 1-2:30 p.m., The Gallery
DCAU meeting, 2:30 p.m., The Gallery
Gate City Coin and Stamp Club, 1:30 p.m., Jordan Hotel, room 230
Badlands Drifters Car Club, 7 p.m., call 365-5342.

A.A., 7:30 p.m., Dion Building (377-5445 or 365-2709)
Gamblers Anonymous, 3 p.m., Dion Building, room 17

MONDAY, FEBRUARY 7
VFW auxiliary, 5 p.m., post meeting, 7 p.m., VFW Club.
Kiwanis board meeting, noon, Jordan.

Immunization clinic, 1:30-4:30 p.m., Dawson County Health Department.

Cards, 7 p.m., Elks Club
Noon Lions, noon, MaddHatters

Adult Children of Dysfunctional Families, 7:30 p.m., 210 Serenity House

A.A., 7:30 p.m., Dion Build-

ing (377-5445 or 365-2709)

TUESDAY, FEBRUARY 8
LEPC Pre-disaster mitigation plan steering committee. 7 p.m., DC lower level (EOC)

Relay for Life Kick-off, 5:30-7 p.m., Elks Lodge
Fair For All, 7 p.m., Carney Center

KC Bingo, 7 p.m., KC Hall
Public Library children's story time, 10:30 a.m.

Duplicate Bridge, 7 p.m., Elks Club
Gamblers Anonymous, noon, Dion Building, room 17

A.A., 8 p.m., Serenity House, 377-5445 or 365-2709
Al-Anon, 7:30 p.m., Dion Building

WEDNESDAY, FEBRUARY 9

Order of Eastern Star, 7:30 p.m., Masonic Hall
ACT, noon, Kings Inn

Kiwanis, noon, Jordan
Narcotics Anonymous, 7 p.m., College, room 140

Gamblers Anonymous, 7 p.m., Dion Building, room 17
Alcoholics Anonymous, 7:30 p.m., Episcopal Church, 377-

5445 or 365-2709

Alcoholics Anonymous, noon, Dion Building (377-5445 or 365-2709)

THURSDAY, FEBRUARY 10
GMC Auxiliary, noon, GMC Carney Center.

Toastmasters Club, noon, Coffee Den.

Blood pressure/cholesterol clinic, 9-11:30 a.m., Dawson County Health Department

Glendive Elks, 7 p.m., Elks Lodge.
Women of the Moose, 7:30 p.m., Moose Lodge.

A.A., 8 p.m., 210 Serenity House, 377-5445 or 365-2709
Al-Anon, 8 p.m., Serenity House

FRIDAY, FEBRUARY 11

Immunization clinic, 9-11:30 a.m., Dawson County Health Department

Duplicate bride, 1 p.m., VFW
Co-Dependents Anonymous, 7 p.m., 812 O'Neil

A.A., noon, Dion Building (377-5445 or 365-2709)
A.A., 6 p.m., Serenity House

Fire, disaster mitigation plan in the works

Eighteen people representing the City of Glendive, the Richey Fire Department, Bridger Pipeline, Dawson County Search and Rescue, Dawson County Disaster and Emergency Services, Dawson County Sanitation, MDU, HAM radio operators, West Glendive Rural Fire, Dawson County Airport, the Montana Department of Natural Resources and Conservation, and the Bureau of Land Management met at the county EOC on Tuesday night.

The group kicked off the planning effort to prepare a Community Wildfire Protection and Pre-Disaster Mitigation Plan for the county, Glendive, and Richey. The purpose of the plan being prepared by contractors from Red Lodge, is to make Dawson County more resistant to natural disasters. The plan will also enable the county to compete for funds to carry out projects.

The group identified flooding of the Yellowstone River as its top concern, followed by wildfires, winter storms, hazardous materials spills, drought, tornadoes and transportation disasters. With the exception of the earlier omission of wildfires, the hazards listed matched those identified during a similar effort in 2002. The group then rated each type of natural disaster based upon the history of occurrence, the probability of future occurrence, and likely consequences in terms of damage to property, injury or loss of life.

The second planning meeting is scheduled for the week of April 11 in Richey. Town, city and county-wide issues

will be addressed, and the group will develop goals for the plan. In the interim, a core group of fire experts in the county will assist in gathering information about fire history and firefighting resources. At the third and final meeting, projects will be listed and pri-

oritized.

Anyone with an interest in the effort is encouraged to attend upcoming meetings. For more information you can contact Dawson County DES Coordinator, Helen Conradsen, at 377-2566, or planner Barb Beck at 406-446-3628.

Glendive Ranger-Review

Disaster mitigation plan meeting set

The second of three public meetings to prepare a Pre-Disaster Mitigation Plan for Dawson County is scheduled for Monday, April 11. The meeting will be held at 2 p.m. at the Stockman Bank in Richey. While the Steering Committee and Local Emergency Planning Committee is helping to guide the work of the contractor, all meetings are open to the public and anyone with an interest in the effort is encouraged to attend and offer input. According to the contractor, Barb Beck, "The purpose of the plan is to think ahead of time about what disasters could occur and be prepared for them. That way the risk of loss of life can be reduced and the potential for property damage can be minimized where possible."

At their first meeting, the Steering Committee members prioritized potential natural and other hazards, identified critical facilities, and listed vulnerable populations among other things. The hazards of most concern to the county in priority order were: flooding of the Yellowstone, wildfires, winter storms, hazardous material transportation accident, drought, and tornadoes.

At this second upcoming meeting on April 11, the group

will work on goals and projects to make the county more disaster resistant. Projects can include such things as awareness and education or actions to reduce potential damage in the event of a disaster. Previous work done by the U.S. Army Corp of Engineers to address flooding in the Glendive area is being utilized.

At the third and final meeting to be held later this spring, specific actions or projects will be further developed and prioritized. A draft of the plan will be available to the public in libraries and local government offices for review by early summer. Once the plan is completed, the county, the City of Glendive, and the Town of Richey will be asked to adopt it. Following review of the plan by the state and federal government to ensure legal requirements are met, the county and the two communities will be eligible to compete for grant funds to carry out the projects in the plan that exceed local resources.

If you would like more information about the planning process or to learn how to get involved, you can contact County Disaster Emergency Coordinator, Helen Conradsen at 377-2566, or contractor, Barb Beck at 446-3628.

Disaster meetings bring results

Preventing and/or lessening potential impact of disasters in Dawson County was the focus of a meeting held in Richey Monday.

Participants at the meeting included the Dawson County Sheriff Craig Anderson, county commissioner Jim Skillestad, county Disaster and Emergency Services coordinator Helen Conradsen, Richey Mayor Sonny Whiteman Jr., town clerk Teresa Unruh, District IV State Disaster Emergency Services Representative Norman Parrent, Stockman Bank Assistant Vice President Della Kenny, and contractor Barb Beck.

The disaster and emergency plan is being prepared as part of a five-county effort. The planning process is designed to make the area more disaster resistant. It will also ensure that Dawson County and the other counties are eligible to compete for project funds prior to a disaster and receive assistance if a disaster occurs.

The following goal statements were developed by the group in Richey. The group decided that it would be more appropriate for Glendive participants to develop the goal statement addressing Yellowstone River flooding.

- Reduce the potential of hazardous material spills and mitigate potential impacts to life and property.
- Manage impacts of severe winter storms.
- Minimize personal injury and economic effects of wind events.
- Minimize impacts and be prepared to respond to drought-related events.

Beck will now take the work of the group and from that, refine the goals and begin identifying projects. The next step in the process will be a meeting in Glendive tentatively scheduled for 2 p.m. on Tuesday, May 10 in the lower level of the courthouse. At this meeting, the group will review the draft goals and objectives, and add and prioritize projects that need to be done to meet the goals. The community wild-fire protection plan is being developed on a parallel track guided by county fire personnel.

The draft plan is scheduled to be completed by early summer. Once compiled, the draft plan will be made available for public review. According to Beck, "We know we can't prevent most of these types of disasters, but by planning ahead, we can minimize the impacts and losses associated with them."

Anyone interested in making comments or learning more about the plan can contact either Conradsen at 377-2566, or Beck at 446-3628.

Predisaster mitigation meeting continue

A small, but dedicated group of city and county residents and elected officials continued the work on the predisaster mitigation plan at a meeting held Tuesday, May 10. The primary tasks of the meeting were to validate the list of projects, add or delete projects, and rank the projects as high, medium, or low priority.

The goals of the plan relate to preventing and/or being ready in case of winter storms, wind events, flash

flooding or flooding of the Yellowstone River, a hazardous material spill, and ongoing drought. Several projects rose to the top because they addressed the potential to save lives and property. These projects included moving forward with a decision on how to address the structures located in the 100-year floodplain in the Glendive area, obtaining National Oceanic and Atmospheric Administration (weather) radios for critical

facilities, securing stores of anhydrous ammonia from vandalism and accidental release, and maintaining preparedness for wildfires.

Projects to address wildland fire are still under development, but according to West Glendive and Dawson Rural Fire Chief, Tim Mort, these projects will focus largely on education and awareness of residents. County Commissioner, Jim Skillestad, expressed a high level of confidence in the abilities of fire fighters in the county during discussion.

Another major concern raised by Dawson County Disaster and Emergency Services Coordinator, Helen Conradsen, is the fact that the county is on the far edges of the weather service areas and detection equipment. This can mean that weather information is less timely, less accurate, or not available. According to Conradsen, "We have some areas of the county that are really black holes for weather information." Montana DES District 4 Representative, Norman Parrent suggested that this situation could be improved short of obtaining a Doppler Radar station which would be difficult and costly to do. Parrent told the group that advances in the use of satellites may soon be able to meet this need.

Planning contractor Barb Beck will take the results from the meeting and develop the draft plan with maps and additional fire projects. The draft plan will be available for review by the public early this summer with copies to be placed at the Dawson County courthouse, Glendive city hall, Richey town hall, and the library in Glendive. Once the plan has been adopted and passed state and federal review, the town, city, and county will be eligible to compete for funds to do the identified projects. Anyone with questions or comments is encouraged to contact Beck at 446-3628.

Glendive Ranger-Review

Sunday, May 15, 2005

Community pre-disaster plan ready for public comment

Plan in the works for seven months

Dawson County Disaster and Emergency Services Coordinator Helen Conradsen announced that the draft Community Wildfire Protection and Pre-Disaster Mitigation Plan will be ready for the public to review on Sept. 14.

"The plan is the result of work over the past seven months or so, and we certainly appreciate all the efforts put into this by the persons who attended the meetings and everyone else who participated," said Conradsen.

The county started working on the plan in January. A citizen steering committee, established to guide the plan development, included the local emergency planning committee, members of the fire departments, local businesses, town and county government, schools, law enforcement, and others. The purpose of the plan is to identify what can be done in advance to lessen the impacts of disasters.

Disasters of most concern

to those who participated were flooding of the Yellowstone River, drought, winter storms, wildfire, hazardous materials, and wind and tornadoes.

Fortunately since the plan efforts began in January, there was no major flooding of the Yellowstone due to the ice jams that can happen in Glendive. In fact, Dawson County has largely avoided any natural disasters over the time period the plan has been developed.

"Projects such as the one to select an alternative and move ahead with addressing those structures located in the 100-year flood plain in Glendive could hopefully reduce damage in the future," stated plan contractor Barb Beck. That project and others are identified in the draft plan which will make them eligible to compete for state and federal funds.

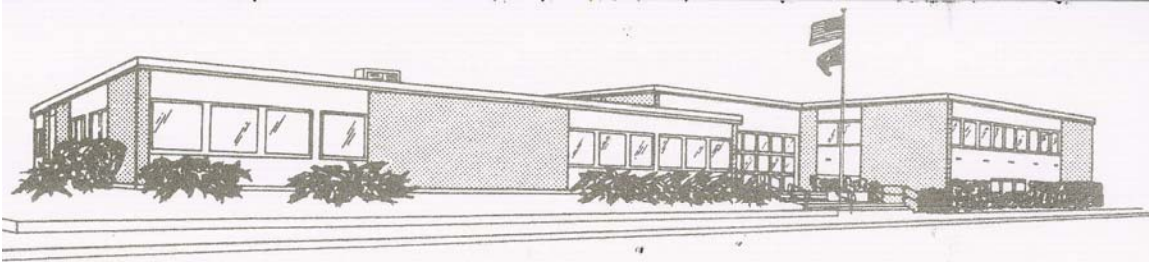
Copies of the draft plan will

be available in Glendive at the Dawson County Courthouse, City Hall, Glendive Public Library and The Ranger-Review. In Richey they can be picked up at the Town of Richey Office, Richey Senior Citizen Center, Richey Public Library and the Stockman Bank of Richey.

The county will accept comments until 5 p.m., Oct. 13. Those interested can submit comments in any form to Helen Conradsen by phone at 377-2566, Dawson County DES, 207 West Bell Street, Glendive, Mont. 59330, or e-mail dawcodes@midrivers.com.

"Once we've received and incorporated comments, the plans will go to the Dawson County Commissioners, town/city councils and mayors for adoption," commented Conradsen. Completing the plan will allow the county and communities not only to compete for grant funds to do projects, but will also allow the county to be eligible for post-disaster relief if something happens in the future.

Correspondence



Office of:
County Commissioners
Phone 377-3562
William E. LaBree, Chairman
James Skillestad
Adam J. Gartner

County of Dawson
207 W. Bell
Glendive, MT 59330

Office of:
Clerk and Recorder
Phone 377-3058
Maurine Lenhardt

Office of:
County Treasurer
Phone 377-3026
Cindi K. Byron

Date 1/20/05

Dear: LEPC Member

You are invited to serve on the Steering Committee to guide the preparation of Dawson County's Community Wildfire Protection and Pre-Disaster Mitigation (CWPP/PDM) Plan.

So, what is this plan and what purpose does it serve? The primary purpose of the CWPP/PDM Plan is to increase the county's resistance to natural disasters. Among other things, the PDM will look at historic disasters, identify those types of disasters the county is at most risk from, and propose projects to address those hazards. The portions of the plan that address wildfire will describe the current situation and values at risk, and also propose goals and projects to address the areas of concern.

And, there are important benefits for the county in preparing the plan. Once the plan is done, we will be eligible to compete for federal grant funds to complete projects, and the county will be eligible for assistance from the Federal Emergency Management Agency (FEMA) in the event we do experience a disaster such as a devastating flood, wildfire, or winter storm, for example.

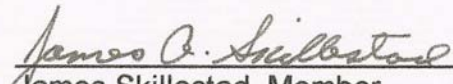
The commitment we are asking of you is simple. Between now and the end of June, we'd like to have you attend one or more of the three two-hour evening Steering Committee/Public meetings. At these meetings, the Steering Committee and interested participants will provide guidance to the contractor we've hired to write the plan. The first of these meetings is scheduled for February 8, 2005, at 7 p.m. in the Lower Level Meeting Room (EOC) of the Dawson County Courthouse in Glendive. We hope to see you at as many of the three meetings as you can make, preferably all three.

Your participation will ensure that we end up with the highest quality plan possible. If you have any questions about the plan or your role as a Steering Committee member, please call our County Disaster Emergency Coordinator, Helen Conradsen, at 377-2566.

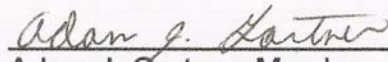
Sincerely,



William E. LaBree, Chairman



James Skillestad, Member



Adam J. Gartner, Member

Jerry Jimison
Mayor, City of Glendive
300 S. Merrill
Glendive, MT. 59330

January 14, 2005

Dear Mayor Jimison:

I'm writing to let you know about a planning effort being initiated by the county. This effort will help the county and the two incorporated communities become more disaster resistant, make the county and the communities eligible for project funds, and ensure the county is eligible for disaster relief funds if a natural disaster does occur.

When completed, the plan must be approved by the state and the Federal Emergency Management Agency (FEMA.) The plan will need to be adopted by the county commissioners, the City of Glendive, and the Town of Richey.

I have been contracted to prepare the plan for the county and wanted to let you know about the effort right from the start. I've enclosed a business card in case you have any questions about the project.

You and several members of your staff will be receiving an invitation in the mail from the commissioners soon inviting you to participate as a Steering Committee member for the project. We plan to hold three Steering Committee/public meetings, two in Glendive and one in Richey. The first meeting is scheduled for Tuesday, February 8, in the Emergency Operations Center in the county courthouse basement. I hope you and your staff are able to attend. I'll look forward to seeing you again, Jerry. Please feel free to call if you have any questions at all.

Sincerely,

/s/ Barb S. Beck
BARB S. BECK

cc: Conradsen

John Whiteman, Jr.
Mayor, Town of Richey
P.O. Box 205
Richey, MT. 59259

January 14, 2005

Dear Mayor Whiteman:

I'm writing to let you know about a planning effort being initiated by the county. This effort will help the county and the two incorporated communities become more disaster resistant, make the county and the communities eligible for project funds, and ensure the county is eligible for disaster relief funds if a natural disaster does occur.

When completed, the plan must be approved by the state and the Federal Emergency Management Agency (FEMA.) The plan will need to be adopted by the county commissioners, the City of Glendive, and the Town of Richey.

I have been contracted to prepare the plan for the county and wanted to let you know about the effort right from the start. I've enclosed a business card in case you have any questions about the project.

You will be receiving an invitation in the mail from the commissioners soon inviting you to participate as a Steering Committee member for the project. We plan to hold three Steering Committee/public meetings and with your approval, the second of these meetings will be held in Richey sometime in the spring. The first meeting is scheduled for Tuesday, February 8, in the Emergency Operations Center in the county courthouse basement. I hope you or someone from Richey is able to attend. I'll look forward to meeting you at some point in the process, John. Please feel free to call if you have any questions at all.

Sincerely,

/s/ Barb S. Beck
BARB S. BECK

cc: Conradsen

Chapter III: Hazard Evaluation and Risk Assessment

Methodology

Information on natural hazards in Dawson County was obtained from a number of sources. At the project kick-off meeting in January, the County Commissioners, County DES Coordinator, and the DES District IV Representative were queried about past disasters. Historical weather data was reviewed and other information provided by the county including: The Hydrologic History of the Lower Yellowstone at Glendive, the Dawson County Plan, and the incomplete pre-disaster mitigation information compiled by a previous contractor in 2002.

At the first Steering Committee/Public meeting held in February 2005, participants were asked to recall past natural disasters. These are documented in the meeting notes included in Chapter II and in part form the basis for the hazards that are profiled in depth later in this chapter.

Both public and private individuals with knowledge of a particular hazard, infrastructure, asset or asset value were contacted with specific information requests. These included among others, the Dawson County DES Coordinator, the Richey Town Clerk, the Glendive City Mayor, Public Works Director and Assistant Public Works Director, the City Administrator, the Dawson Community College, the Montana Department of Revenue, Glendive Medical Center, the Natural Resources Conservation Service, the Montana Department of Transportation, the Montana Highway Patrol, Burlington Northern Santa Fe Railroad (BNSF), private businesses, the Chamber of Commerce, local utilities, and the radio and television stations.

Numerous state and federal data bases were searched including those of the U.S. Department of Transportation, the Federal Railroad Administration, the National Weather Service, the U.S. Department of Agriculture, the Federal Emergency Management Agency (FEMA), and the Bureau of Land Management. Private data sources were researched as well as the website for the tornado Project. Existing and on-line maps for such things as wind events, drought status, and floodplains were consulted.

Applicable state and federal plans including the Montana Multi-Hazard Mitigation Plan, the Montana Drought Response Plan, and the USDA Soil Survey of Dawson County were reviewed. The information obtained from all of these sources is included in the hazard profiles that follow. Each of the hazards identified by the Steering Committee at the public meeting is treated below with the wildland fire hazard addressed in Chapter V.

Table 3.1 Dawson County Hazards

<i>Hazard</i>	<i>How Identified</i>	<i>Why Identified</i>	<i>Rank at Public Mtg</i>
Drought	Steering Committee/ Public Meeting, County Commission, Disaster Declarations, Montana Drought Response Plan	Much of the land use in the county is agricultural. The county has been in a long-term drought.	5
Transportation Hazmat Incident	Steering Committee/ Public Meeting, County Commission	Consequences could be severe. BNSF tracks, I-94, and pipelines cross the county.	4
Yellowstone River Flooding	Steering Committee/ Public Meeting, County Commission, U.S. Army Corp of Engineers, Western Regional Climate Data	The Yellowstone River has flooded in the past, both from seasonal high flows and ice jams. Assets are located in the 100-year floodplain.	1
Winter Storm	Steering Committee/ Public Meeting, County Commission, Disaster Declarations, Western Regional Climate Data, SHEL DUS	Frequent historic winter storms, some severe and costly.	3
Wildfire	Steering Committee/ Public Meeting, County Commission, Disaster Declarations, Western Regional Climate Data	Drought, fine fuels, high winds, and large historic fires.	2
Tornadoes	Steering Committee/ Public Meeting, County Commission, Disaster Declarations, Western Regional Climate Data, SHEL DUS	History of tornadoes and corresponding losses.	6



Project Kick-off Meeting with county commissioners, Glendive
Photo taken by Norman Parrent, District IV Representative

Hazard Profiles

Hazard profiles are provided for each of the hazards—natural and other—identified by at the first meeting in February 2005. The hazards addressed here include drought, flooding of the Yellowstone River, hazardous transportation incidents, tornadoes, wildland fires, and winter storms.

In addition to these hazards, the initial pre-disaster mitigation planning effort in 2002 also identified civil disorder, communications disruption, dam failure, earthquakes, landslides, power failure, and a radiological disaster. The Steering Committee in 2005 did not identify any of these hazards as a concern, four of which are not natural disasters. As far as the remainder of the list of potential hazards from 2002, there is no history of earthquakes in the county and they are unlikely to occur in the future, the Natural Resources Conservation Service did not identify any areas vulnerable to landslides that could affect constructed assets or infrastructure, and the county has no high hazard dams nor history of dam failure.

The following discussion of each hazard begins with an introduction, followed by historic occurrences of the hazard and a potential loss estimate for a disaster from that particular hazard. The potential loss sections also address vulnerability.

Drought

“Drought is an extended period of below normal precipitation which causes damage to crops and other ground cover; diminishes natural stream flow; depletes soil and subsoil moisture; and because of these effects causes social, environmental, and economic impacts to Montana.” (Montana Drought Response Plan, 1995)

Historic Occurrences

Legendary drought occurred in eastern Montana in the 1930’s. Impacts were severe across not just Montana, but the entire Great Plains and lead to changes in farm practices that have lessened the impacts of subsequent droughts, such as the one in the 1950’s.

According to the 1995 Montana Drought Response Plan “From 1976 to the present, Montana has endured a period largely characterized by years of below average precipitation, punctuated by the extremely dry years of 1977, 1987-1988, 1992, and 1994.” The state made no disaster declarations for Dawson County for drought during the years 1975-2004. The federal government, U.S. Department of Agriculture, made the following disaster declarations for the county for drought and drought-related disasters.

Table 3.2 Drought-related Disaster Declaration Summary (1998-2004)

<i>Designation Number</i>	<i>Incidence Period</i>	<i>Date Designated</i>	<i>Type of Disaster</i>
S1468	10/1/99	9/14/2000	Losses caused by drought and excessive heat
S1468 amended	10/1/99	1/11/01	Losses caused by hail, grasshoppers, high winds, and disease 10/1/99-9/19/00, and Losses caused by hail 7/4/00 and 8/11/00, and high winds 7/3/00, and Losses caused by grasshoppers 8/1/00 through 8/30/00
M1340 amended	7/13/00-9/25/00	9/19/00	Losses caused by wildfires
S1538	1/01 and continuing	5/29/01	Losses caused by ongoing drought
S1624	1/1/02	3/27/02	Losses caused by drought
S1849	1/1/03 and continuing	12/2/03	Losses caused by drought
S1916	1/1/03	4/23/04	Losses caused by drought

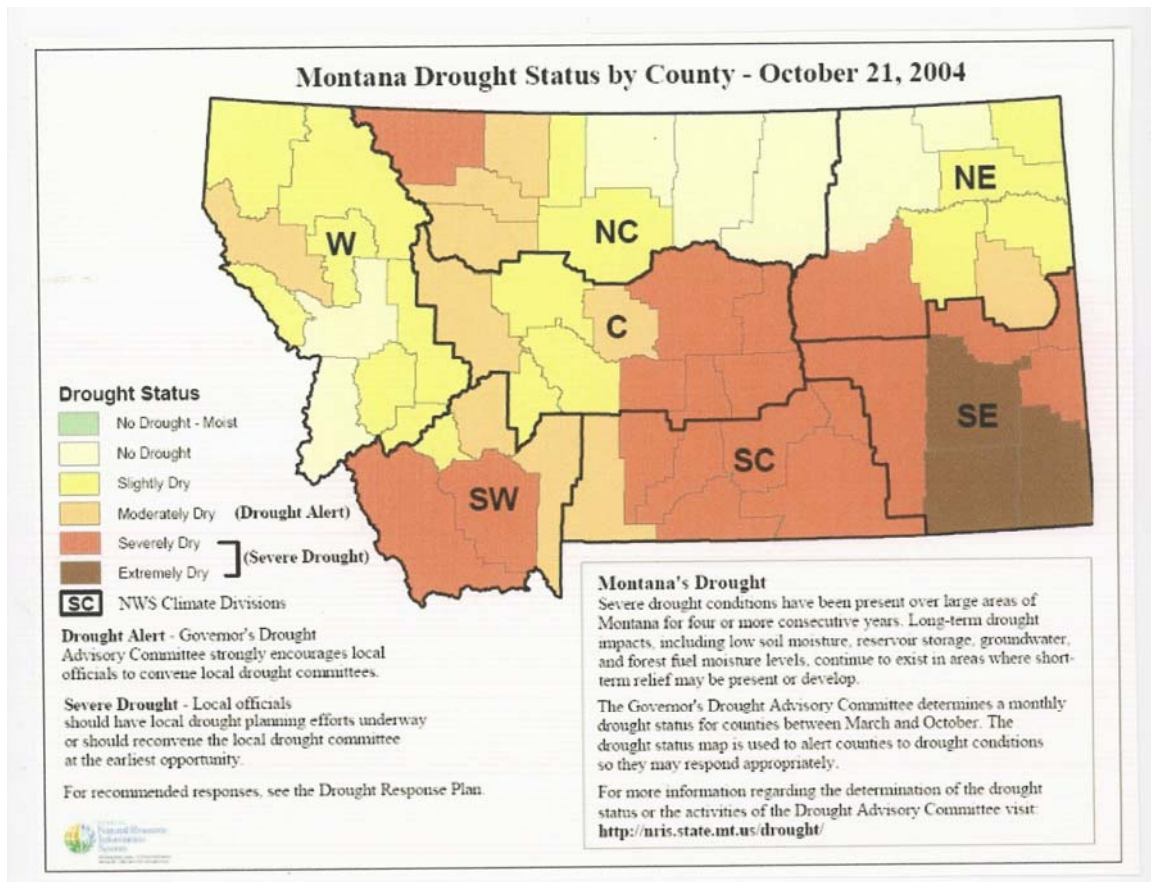
Source: USDA, Farm Home Administration

Vulnerability and Potential Loss Estimate

There are six possible classifications for degree of drought in the system used by the state of Montana.

1. No drought-moist
2. No drought
3. Slightly dry
4. Moderately dry
5. Severely dry
6. Extremely dry

As of September 2004, Dawson County was characterized by the state as being moderately dry in a drought alert. Residents believe that the county may have moved to the severely or extremely dry classification since this time. Based upon historic and recent drought, all areas of Dawson County are vulnerable.



Drought has both direct and indirect effects. Drought adversely affects soil and vegetation moisture which in turn directly affects crops. Surface water and groundwater are affected which can reduce or eliminate well flows. Finally, drought affects the probability and severity of wildfire and insect damage.

“Cumulative years of drought have a multiplier effect... Livestock producers have not truly restocked since wholesale liquidation in 2001 and 2002, when over 350,000 head were sold and/or moved out of state.” (The Governor’s Report on Drought in Montana, May 2004)

According to the Montana Agricultural Statistics, Dawson County had 522 farm/ranch operations in 2002. The county ranked 21st in the state for total cash receipts and government payments with receipts totaling \$40,379,000. Dawson County ranked 3rd in the state in oat production, 6th in the production of spring wheat, and 9th in the production of durum wheat. The county also produces winter wheat, barley, corn, sugar beets, dry beans, peas, safflower, mustard, and hay. As of January 1, 2004, the county ranked 23rd in the state for all cattle and calves at 45,000 head. Cattle numbers have remained relatively steady between 43,000 and 45,000 head for the previous five years. The county ranked 14th in the state on the same date for all sheep and lambs at 6,400 head.

The table below presents some estimates for key crops in Dawson County comparing typical yields with recent drought yields and multiplying the difference by the price per unit. While this offers some measure of losses it does not account for all other crops so can only be considered as part of the drought loss.

Table 3.3 Drought loss estimation for key crops

<i>Crop</i>	<i>Normal Year Yield</i>	<i>Drought yield</i>	<i>FSA 3-year ave cost per unit</i>	<i>Acres planted 2003</i>	<i>Economic Loss</i>
Alfalfa-dryland	1.2 tons/ac	.75 ton/ac	\$79.00/ton	20,200	\$718,110
Barley	80 bu/acre	30 bu/acre	\$ 1.95/bu	22,000	\$2,145,000
Durum Wheat	65 bu/acre	25 bu/acre	\$ 4.07/bu	7,300	\$1,188,440
Oats	70 bu/acre	30 bu/acre	\$ 1.35/bu	5,600	\$ 302,400
Spring Wheat	65 bu/acre	25 bu/acre	\$ 3.15/bu	153,000	\$19,278,000
				Total Loss	\$23,631,510

Sources: Montana Agricultural Statistics 2004, Linda Peterson Lohse (NRCS), Bruce Smith (Dawson County Extension), FSA Damage Assessment Report-July 3, 2003 and continuing.
 Note: Normal year yields were adjusted from the state-wide FSA numbers based upon local NRCS and Extension knowledge.

County producers have also suffered drought losses related to livestock income. According to the NRCS, some producers have sold off their entire herds. Others, perhaps more typical, have reduced their herds by 10-20%. Moisture during the 2005 growing season (in addition to beef and fuel prices) will be critical to decision making on further reductions. Existing pasture has been grazed heavily over the past several years in an attempt to maintain herds so hay will have to be purchased and/or additional pasture leased if the drought continues.

Flooding

The Yellowstone River flows through the center of the county and the city of Glendive. Significant constructed assets and infrastructure in Glendive/West Glendive are located within the 100-year floodplain of the Yellowstone. Although both spring runoff and ice jam floods have occurred in the past, ice jam floods have caused the most damage. These floods occur during February, March, and April and are caused by Yellowstone River ice jams River during severe cold spells.

Flash floods are also possible and not infrequent based upon past occurrences. The recently-completed cooperative Rosser Ditch project created several small reservoirs with a timed release system in the hills west of Glendive. This project has addressed the flash flood concerns in the Hungry Joe, Graveyard Coulee, and Flattop Butte areas of Glendive. (Kevin Dorwart, City of Glendive)

A number of flood control and hazard mitigation studies have been completed over the past 40 years. In 1965, the US Army Corp of Engineers (USACE) conducted a study for the Montana Highway Commission looking at the potential effect of interstate bridges on flooding. The study concluded that the proposed I-94 bridges would increase ice jam stages by a small amount and that the West Glendive levee would still contain a 100-year ice-affected flood. A reconnaissance study was completed in 1973 to determine the feasibility of raising the levee. The 1973 study concluded that the Corp had no authority to implement a plan to construct two additional bridges on I-94 to reduce flooding and that raising the West Glendive levee was the most practical solution. (*City of Glendive Flood Hazard Mitigation Plan*, revised 1998)

In 1980, FEMA conducted a Flood Insurance Study for Glendive and Dawson County. The study found that the existing levee (constructed in 1959 at a cost of \$249,900) did not provide adequate protection from ice jam flooding. As a result, the majority of the West Glendive area of the city was included in the 100-year floodplain. Issuance of permits for building in the floodplain by the city caused FEMA to drop the city from its floodplain insurance program in the 1980s. According to the 2002 USACE report, the city still had 13 structures that were not in compliance with the National Flood Insurance Program (NFIP) regulations.

In 1996, the city of Glendive adopted a floodplain ordinance and in 1998, the county also adopted a floodplain ordinance. Following these actions, FEMA reinstated the FIP. At that time, however, the city was put on notice that mitigation of the continuing flood hazard would be required to maintain their participation in the program. No alternative has since been selected or pursued by the city to address this issue, largely because the cost of even the local match that would be required of each of the alternatives is believed to exceed local resources.



Aftermath of ice jam flooding on the Yellowstone

Historic Occurrences

According to the U.S. Army Corp of Engineers, “the city has experienced 30 ice jam floods since 1890, including major ice jam floods in 1899, 1936, 1969, 1986, and 1994. A total of sixteen deaths have occurred from these flood events.” (USACE Flood Plain Management Plan, March 2002)

The first recorded flood of the Yellowstone River at Glendive occurred on April 8, 1899. This newspaper account describes the loss of the bridge. “Last evening at 7:55, and the report soon brought out nearly the entire population of Glendive, to view the imposing spectacle of huge cakes of ice a hundred feet square crushing against the ice breaks built in front of each pier. ..The bend in the river threw the greatest volume of water and ice against the east bank and gave the ice break in front of No. 1 span the brunt of the struggle, the ice passing completely over the top of it, but it could not resist the strong elements hurled against it, and gradually began to be knocked to pieces, one timber at a time disappearing, until it was completely out of sight.” (Glendive Independent, April 8, 1889)

Since that time, numerous floods have been documented with substantial losses attributed to the floods.

Table 3.4 Historical Flood Events of the Yellowstone River

<i>Date</i>	<i>Nature of Flood</i>	<i>Loss/damage</i>
April 8, 1899	Ice Jam	12 human lives lost Livestock drowned Homes washed away Yellowstone River bridge lost
July 1907	Lowland areas flooded from heavy rain storm	Irrigation dam and crops
March 1910	Ice jam	Railroad construction, Cain Coulee bridge, ranch buildings
February 1916	Ice Jam	Road on west end of bridge washed out, extensive damage to Butler Slough bridge, cattle and horses
March 1920	Ice jam and blizzard	Several buildings south of Glendive, telephone poles broken off, fairgrounds, trains re-routed
1927	Flash Flood	Griffith Creek bridge between Glendive and Wibaux
June 1929	Flash Flood	Mead Ave bridge and approaches
March 1933	Ice and high water	Highway 10 bridge and approaches washed out
March 1936	Ice Jam	All low-lying ground flooded on both sides of the river, Hwy 10 blocked, communications cut off
June 1938	Flash flood	Spring Creek railroad bridge Livestock
April 1943	Ice jam	Fallon Bridge washed out
June 1944	Flash Flood	Ditch breeched, garden damage, homes flooded, 3 lives lost, MDU transformer
March 1969	Ice Jam between Towne and Bell Street bridges	Homes and commercial areas on Marsh Road flooded, major damage to 30 homes, trailer courts in lower areas of east side of river flooded.
1972		4 bridges washed out, Riverview Trailer Court flooded

Sources: *Hydraulic History of the Lower Yellowstone at Glendive*, 1998; FEMA Flood Insurance Study, 1980; *City of Glendive Flood Hazard Mitigation Plan*, 1998

The Storm Events data base at the National Climate Data Center (NCDC) lists 10 flood events for the county between 1/1/1950 and 9/30/2004. Five of these are listed as flash floods. The flash floods occurred in 1994, 1997 (2), 2001, and 2004. The unspecified floods listed in the Storm Events summary occurred in 1997 (3) and 2003 (2.)

Federal disasters were declared in 1986 and 1997 for flooding in Dawson County. The state did not declare any flood disasters for the county between 1975 and 2004.

Vulnerability and Potential Loss Estimate

The City of Glendive and the West Glendive area are vulnerable to flooding by the Yellowstone River. The entire county is vulnerable to flash flooding. There were 3 flood insurance policies in-force in the county as of 12/31/2003. The total value of these policies was \$349,000. Within the city of Glendive, there were 8 policies in-force, for a total value of \$410,000. (www.fema.gov)

As a result of the federal disaster declaration in 1986, \$1.2 million in public assistance dollars was paid out across 16 counties, including Dawson County. The federal flood disaster in 1997 produced \$7.7 million in public assistance funds across 22 counties, including Dawson, and one Indian reservation.

As mentioned above, several studies of past flooding and vulnerability to flooding in the Glendive area have been completed for the purpose of selecting and carrying out mitigation actions. The conclusion of the *Hydrological History of the Lower Yellowstone at Glendive* which was prepared for the National Weather Service in 1998, was that a 100-year ice-affected flood event would cause \$11,600,000 in damages to West Glendive. A 50-year event would cause \$9,975,000 in damages.

The most recent study to look at values at risk was completed by the USACE in 2002. The study reported that there were a total of 120 residential and 66 commercial structures in the 500-year floodplain of the Yellowstone in West Glendive and 45 additional residential structures in the 500-year floodplain in the city of Glendive in Cain's Coulee. The study divided the area into three sub-areas. Sub-area 1 is West Glendive to the east of the BNSF tracks. Sub-area 2 is West Glendive to the west of the BNSF tracks. Sub-area 3 is east of the river in the Cain's Coulee area.

Flood damages were computed for a 100-year flood event using the Omaha District Economic Damage Model. The following table is taken from the 2002 Flood Plain Management Plan.

Table 3.5 USACE Land Use Property Values by Sub-Area (2002)

	<i>Number of buildings</i>	<i>Structure (\$1,000)</i>	<i>Contents (\$1,000)</i>	<i>Total (\$1,000)</i>
Sub-Area 1 residential	120	5,882	2,941	8,823
Sub-Area 1 commercial	27	2,554	1,277	2,281
Sub-Area 2 residential	10	400	200	600
Sub-Area 2 Commercial	30	3,400	1,700	5,100
Sub-Area 3 Residential	45	3,180	1,590	4,770
Sub-Area 3 Commercial	0	0	0	0
	232	15,416	7,708	\$ 23,124,000

Source: USACE, 2002 based upon values obtained from the Dawson County Assessor and the Montana State Cadastral data web site.

Looking at the property values provides the majority of information in determining potential losses. If, the structures and contents experienced a 50% loss, the total would be \$11,562,000. This figure is consistent with the estimate produced in the study conducted for the National Weather Service in 1998. Neither damage assessment takes into account other costs that would be directly associated with a major flood event. These costs would include damage to infrastructure, business interruption, and debris clean-up. No loss of life was postulated in the above model, but loss of life could occur as well, dramatically increasing the total losses.

Two of the 10 flood events listed in the NCDC Storm Events data have loss estimates. The flash flood at Glendive on June 7, 1994 caused a reported \$50,000 in damages. The flood on March 13, 2003 caused a reported \$75,000 in damages.

According to the draft Pre-Disaster Mitigation Plan of 2002, ice jam floods accounted for 28 of 32 floods over 114 years, averaging one every four years.

Hazardous Material Transportation

People, goods, and livestock move across Dawson County in two important transportation corridors, the interstate highway and the railroad.

The Burlington Northern Santa Fe (BNSF) Railroad passes through the center of both the city of Glendive and Dawson County, running generally east-west. The BNSF carries coal, grain, and merchandise across the county. According to the Billings office of the BNSF, approximately 26 trains pass through the county on a

daily basis. Interstate-94 also crosses the center of the county running generally east-west, just north of Glendive. Personal and commercial vehicles carrying freight use the interstate. According to the closest Montana Department of Transportation automatic traffic recorders, I-94 at Wibaux carries a daily average of 1933 vehicles daily in January—the lowest month, and 3850 vehicles daily in July—the highest month. Of this number approximately 29.6% were large trucks in 2004.

There are 60,000 identified hazardous materials and at any given time, 45,000 are in transport. (Billings Gazette, February 28, 2005) Railroads carry about 1.7 million carloads of hazardous materials annually. Between 1981 and 2004, there were 10 deaths in the country related to hazardous materials moving by rail and 274 deaths from hazardous material moving by truck. BNSF recorded only one incident where hazardous materials were released in Montana between 1994 and 2004. BNSF officials have real-time information on what hazardous materials each train is carrying. (Billings Gazette, February 28, 2005)

Historic Occurrences

The Federal Railroad Administration maintains statistics on railroad accidents that occurred since 1975. Railroad accidents have occurred in the county in 22 of the 30 years from 1975 through the end of 2004. There have been a total of 49 accidents during this period. The primary causes of the accidents have been human (17), track (14), equipment (5), and miscellaneous (3.)

Between 1994 and 2002, there were 13 spills of hazardous material. Oil and gas accounted for 11 of these spills, waste water the other two. Water was affected by six of the spills, land by five, and soil by two. All but one of the spills occurred in the Glendive area, the other occurred near Richey. Spills were the result of railroad, pipeline, and utility accidents. (Dawson County Draft Pre-Disaster Mitigation Plan, 2002)

Vulnerability and Potential Loss Estimate

The Billings Gazette cited statistics from the Association of American Railroads that 99.99998% of hazardous materials that travel by rail make it safely. (February 28, 2005) The small percent of hazardous material transport problems can cause serious consequences. For example, in early 2005, a train derailment in South Carolina that produced a cloud of toxic gas from a chlorine leak killed nine people. An April 1996 rail crash in Alberton, Montana, resulted in the second largest chlorine spill in the history of the country. One death and the evacuation of 1,000 people resulted. And, in February 1998, 48 rail cars rolled backward and down grade into Helena. The crash caused an explosion that forced the evacuation of 2,000 people and cost \$6 million.

The most typical railroad accident in the county over the period 1974-2004 was a derailment of 0-5 cars and no locomotives. Accident damages for this type of incident were generally less than \$50,000 for track and equipment. There have been several larger accidents during which more extensive track and equipment damage was sustained. Costs associated with past incidents have largely been direct costs to track and equipment and were borne by the BNSF. Costs of a major derailment even without a hazardous material component can easily exceed \$1 million.

Table 3.6 Dawson County most expensive train accidents (1974-2004)

<i>Date</i>	<i>Cause</i>	<i>Track damage</i>	<i>Equipment damage</i>	<i># of cars derailed</i>
1/12/1979	Track	9,000	130,200	17
3/31/1985	Track	313,000	822,600	33
3/11/1987	Equipment	45,000	566,500	26 + 5 locomotives
6/7/1988	Track	37,500	228,160	24
10/2/1994	Track	100,000	259,550	24

Source: Federal Railroad Administration website

With hazardous materials involved, direct costs of an incident could increase significantly due to the need to bring in one or more state or railroad hazmat response teams, clean-up activity and mitigation, medical costs, law enforcement, and evacuations should they be necessary.

A 6-person Hazmat Team costs \$300/hour plus \$150/hour for the vehicle. Hazmat suits cost \$1,000 a piece. (Billings Hazmat Team, Gerber) Medical costs can be incurred when people experience skin irritations and burns, and/or respiratory exposure. Law enforcement personnel are needed to direct traffic, control access, and direct evacuations if necessary.

The number (49) and frequency of railroad accidents over the past 30 years indicate that Glendive specifically, and areas contiguous to track, remain vulnerable to a railroad accident. Lands along I-94 are probably most at risk from vehicle hazardous material spills. And, the communities of Richey and Glendive are vulnerable to releases of anhydrous ammonia. However, based upon past accidents, the likelihood of hazardous materials being involved in an accident is quite small.

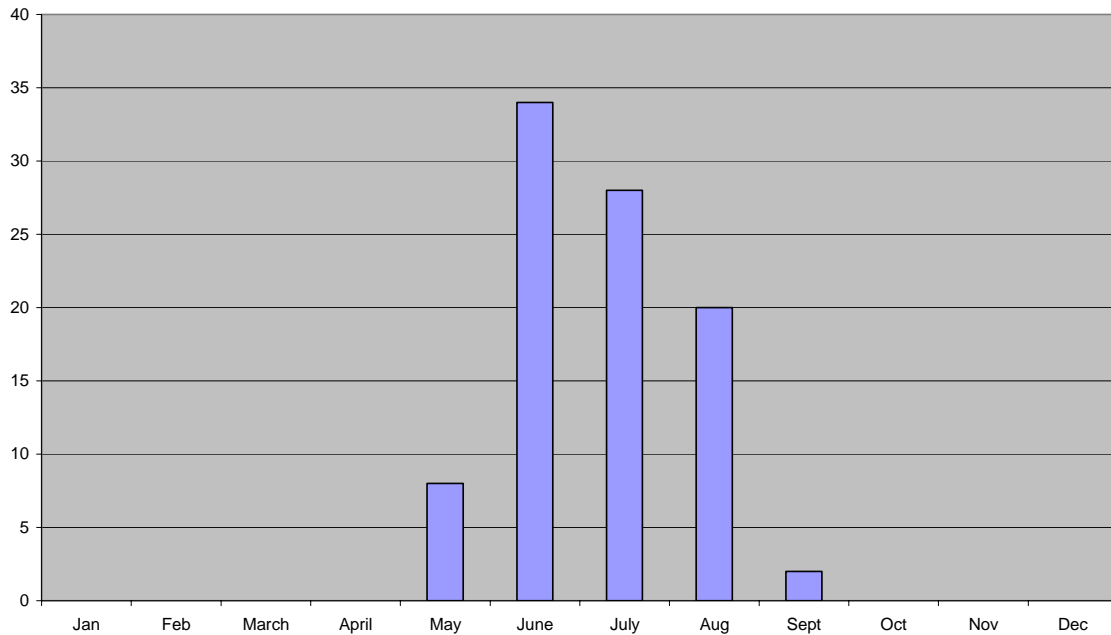
Tornadoes

“A tornado is a violently rotating column of air in contact with the ground and extending from the base of a thunderstorm.” (State of Montana Multi-Hazard Mitigation Plan and Statewide Hazard Assessment, 2004) Tornadoes have and continue to occur in Dawson County.

Historic Occurrences

A June 20, 1935, Dawson County Review article states “At Joe Rock’s a small twister destroyed the silo and barns and at Bill Gertenson’s place near Colgate the big barn was flattened.”

**Number of Events by Month
(1923-1995)**



12-county eastern Montana area tornado events by month (NWS)

The Tornado Project data base lists 12 tornado events in the county between 1880 and 2000. These tornadoes occurred in May (1), June (5), July (2), and August (4) during the years 1927, 1953 (2), 1961, 1975, 1978, 1987, 1991 (2), 1993 (2), and 1995. The tornadoes in 1953 and 1975 were F2 with winds between 113-157 mph causing considerable damage. (www.tornadoproject.com.) The remainder of the tornadoes were F0 (winds of less than 73 mph) or F1 (winds of 73-112 mph.) The F stands for Fujita Tornado Damage Scale which characterizes wind speeds and describes typical damage. The NCDRC Storm Events data has these same records plus funnel cloud sightings on June 20, 1999 and July 20, 2001.

Vulnerability and Potential Loss Estimate

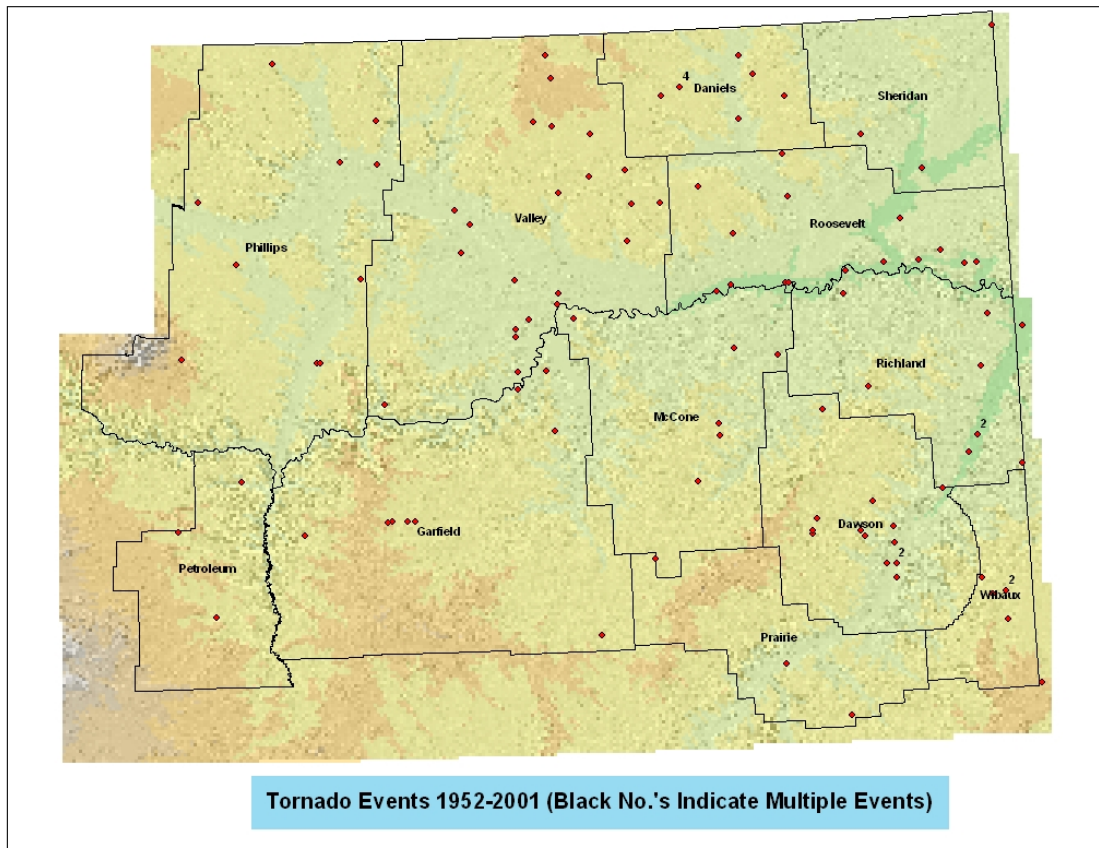
Two past tornadoes recorded in the county have reached F2 on the Fujita scale. F2 tornadoes typically cause roofs to be torn from frame houses, mobile homes to be demolished, boxcars to be overturned, large trees to snap off or be uprooted, cars lifted off the ground, and light objects turned into projectiles.

Based upon past incidents, depending on the density of structures in the area or areas where an F2 tornado reaches the ground, considerable damage could be expected, upwards of \$1,000,000.

Typically, tornadoes in Dawson County are F0 or F1 causing less damage and resulting in the loss of roofing material, broken braches, shallow rooted trees being pushed over, sign boards being damaged, mobile homes being pushed off foundations or overturned, and moving automobiles being blown off roads.

The NCDC Storm Events data contains damage estimates for three of the past tornadoes listed. The June 1961 tornado reportedly caused \$2,500,000 damage, equivalent to approximately \$15 million in current dollars. The tornado in June of 1975 and August of 1987 each caused a reported \$25,000 in damages.

In addition to tornadoes, Dawson County experiences frequent high winds, thunderstorms, and hail. Dawson is in the top ten counties in Montana for highest vulnerability to tornado, extreme wind, and hail damage in the state *Multi-Hazard Mitigation Plan and Statewide Hazard Assessment*. The summary of frequency is 105.85%. This means that the county is likely to experience slightly more than one of these extreme wind events in any given year. (NCDC, 2004)





Dawson County Airport could experience damage from wind events

The entire county is vulnerable to tornadoes and high wind events because of the climate, weather patterns, and terrain. Based upon historical records, tornadoes are most likely to occur in the county during the late afternoon and early evening hours in the month of June. The fact that previous tornadoes have been reported more heavily in the Glendive area is probably a function of population density rather than storm location.

Wildfires

The wildfire hazard is addressed in detail in Chapter V. Chapter V assesses the hazard and risks, and provides the mitigation goals, objectives, and actions. Wildfires can start and occur anywhere in the county outside developed areas.

Winter Storms

A blizzard is defined as a storm with winds over 35 mph with snow and blowing snow reducing visibility to near zero.

Blizzards and ice storms pose a great threat to human life, livestock, and wildlife in Dawson County, and in Montana. Winter storms can cause deaths to occur through hypothermia, vehicle accidents, and overexertion. Residents of Dawson County are accustomed to dealing with winter storms. However, rapid snowfall,

extremely low temperatures, and/or strong winds can combine to present especially dangerous conditions for people and livestock.

Mean annual snowfall at Richey between 1947 and 1979 was 22.87 inches, with average snow depth for the period peaking during the month of February at four inches. Records for Glendive cover the period of 1893 through 2004. During that period, January had the greatest average snow depth at four inches and the average annual snowfall was 28.9 inches. (wrcc@dri.edu) The ground in the county is bare of snow much of the winter.

Even small amounts of snow, however, can cause problems when coupled with high winds, reducing visibility and drifting to make roads impassible thereby isolating rural residents. Snows that occur late in the season are typically higher in moisture content and thus heavier. This increases the challenge of snow removal and the chance that power delivery will be interrupted and transmission facilities damaged.

Additional consequences such as damage to agricultural crops and increased flooding potential can occur in the days and months that follow severe winter storms. According to the *State of Montana Multi-Hazard Mitigation Plan and Statewide Hazard Assessment*, property damage and injuries/fatalities may be underreported in Montana because winter storms are such frequent occurrences.

For the many residents engaged in stock raising operations, outdoor activity is required no matter the weather, thus increasing their exposure. Weather forecasters are usually able to predict major storms and storm paths, providing residents at least some advance warning during which to make preparations.

Historic Occurrences

The earliest documented winter storm in eastern Montana was wide-spread and legendary. This storm cost the lives of large numbers of open range cattle. During the winter and spring of 1887 there were 40 days of blinding blizzard and snowstorm. Charles Russell captured this event in a famous painting of livestock struggling for survival titled "*Waiting for a Chinook, Last of the 5,000.*"

The Storm Data from the Western Region Climate Center (WRCC) contains 13 reports of winter storms from 1996 through September 30, 2004. The data includes events categorized as blizzards (3), winter storms (7), heavy snow (2), extreme cold/wind chill (1.) These storms reportedly occurred in 1996, 1998, 1999, 2000, 2002, 2003, and 2004. Some years had multiple events.

The storm in December of 2000 affected a number of counties in addition to Dawson and resulted in disaster declarations by both the USDA and FEMA. The

state of Montana declared Dawson County a disaster area for winter storms in 1978 and 1979. (State Declarations, 1975-2004)

Vulnerability and Potential Loss Estimate

Based upon the data from the Western Regional Climate Center, the county experienced 13 extreme winter events in a nine-year period. At least one winter weather event occurred in 7 out of the 9 years for which the WRCC has records. Dawson County and the state of Montana are considered vulnerable to winter storm effects. Winter temperatures and precipitation regimes in eastern Montana are affected by cold continental air masses.

According to a newspaper account dated December 21, 1964, the reported winter storm caused \$3.4 million in damages and included the loss of nearly 25,000 cattle across several counties. Data from the WRCC shows that a heavy winter storm in November, 2000, caused \$3.3 million in property damage. Over \$2.7 million in public assistance funding was provided across five affected counties following the 2000 storm. Despite the sizeable losses in 1964 and 2000, most winter storms are considerably less costly and involve vehicle accidents, minor medical costs, the cost of snow removal, and lost business opportunity costs. The exception to this statement, however, is when significant crop losses occur. The state and local share of monies for the 1978 and 1979 winter storm disasters in Dawson County were \$59,000 and \$97,000 respectively. The entire county is vulnerable to winter storms.

Dawson County Vulnerability



Glendive Medical Center

Critical Facilities and Infrastructure

Critical facilities and infrastructure were identified by the Steering Committee members at the first public meeting. These facilities are those that would be necessary to continue government functions and provide essential services in the event of a disaster. With the exception of the defined floodplains and flooding, and wildland fire, any of the facilities and infrastructure listed below could be vulnerable to the hazards identified.



Glendive City Hall

Table 3.7 Critical Facilities and Infrastructure

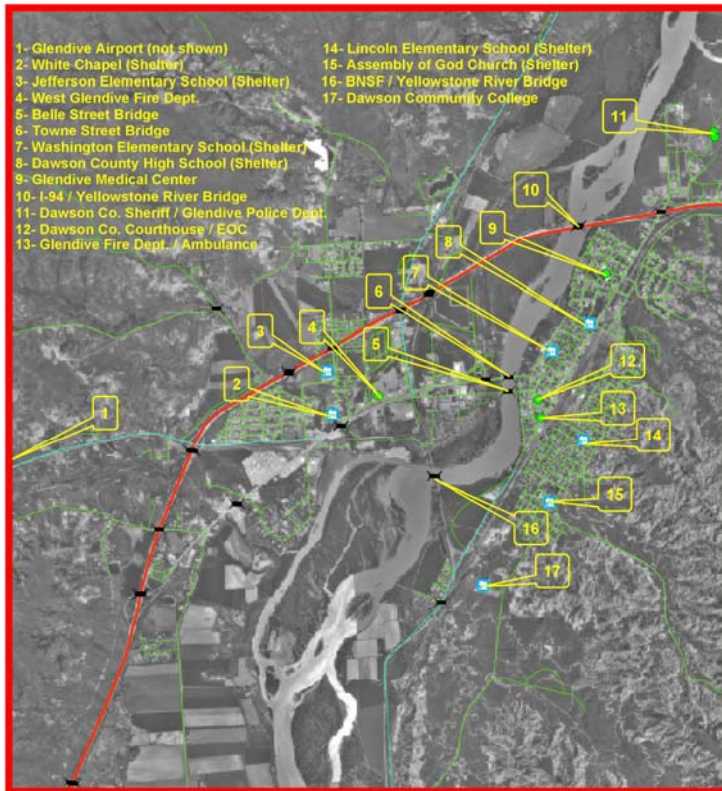
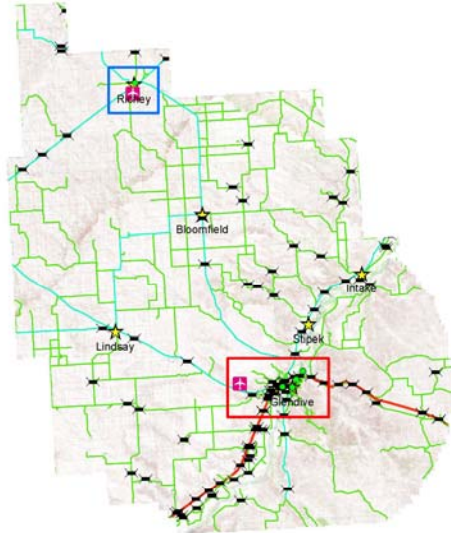
<i>Description</i>	<i>Year built</i>	<i>Insured/replacement value</i>
Albertsons grocery (29,000 SF @ \$65/SF)	1963	\$ 1,885,000
Bell Street bridge (If lost, might not be replaced, utility lines could be put under river)	1927	\$ 4,000,000
Cenex pipeline (20 miles and 30 miles)	Glendive-Sidney 1960 Fallon-Glendive 2001	\$ 7,500,000
Dawson Community Airport (bldgs, infra)	1968	\$ 63,000 terminal bldg \$ 54,000 garages \$ 238,000 county sheds \$ 90,000 private hangars

Dawson Community College	Main Building 1950's Ullman Center 1985 Dorms (3) 1990,2002 Library 1984 Gym/FA Center 2005	\$ 11,000,000 \$ 6,000,000 \$ 6,000,000 \$ 2,000,000 \$ 6,000,000
Dawson County Courthouse	1962	\$ 2,000,000
Dawson County Law Enforcement Center	1997	\$ 7,000,000
Eastern Montana Veterans' Home	1995	\$ 8,800,000 (bldg,contents)
Glendive City Hall/Fire (insured value-2000)	1914, 1941	\$ 1,360,000
W. Glendive Fire Hall	1957 (+ additions)	\$ 135,000 (structure) \$ 52,020 (pers prop)
Glendive Medical Center, Heritage Assisted Living Center (13 beds)		\$28,800,000 (clinic, hosp) \$ 5,760,000 (assisted liv.)
Glendive Water plant and distribution system	1960 (plant)	\$ 7,879,000
Glendive Sewer System	Lift stations (1960-86)	\$ 4,924,700
Interstate 94 bridges (2 @ \$9million/each)	1968	\$18,000,000
KGLE AM Radio	Since 1957	\$ 180,000
KXGN Television and Radio	TV (operating 50+ yrs) KXGN Radio (50+ yrs) KDZN Radio (15+ yrs)	\$ 400,000
Levee-West Glendive (Note: If levee was lost, might not be replaced)	1959	\$50-75,000,000
Reynolds grocery (30,000 SF @ \$65/SF)	1984	\$ 1,950,000
Richey Town buildings and equipment	Various	\$ 498,561
Towne Street bridge	1950s	\$10,000,000
WAPA junction substation-Dawson County (high level est)		\$ 7,000,000
WAPA sub-Glendive		\$1-1,500,000

Sources: Various Facility Managers



Dawson County Law Enforcement Center, Glendive



- 1- Glendive Airport (not shown)
- 2- White Chapel (Shelter)
- 3- Jefferson Elementary School (Shelter)
- 4- West Glendive Fire Dept.
- 5- Belle Street Bridge
- 6- Towne Street Bridge
- 7- Washington Elementary School (Shelter)
- 8- Dawson County High School (Shelter)
- 9- Glendive Medical Center
- 10- I-94 / Yellowstone River Bridge
- 11- Dawson Co. Sheriff / Glendive Police Dept.
- 12- Dawson Co. Courthouse / EOC
- 13- Glendive Fire Dept. / Ambulance

- 14- Lincoln Elementary School (Shelter)
- 15- Assembly of God Church (Shelter)
- 16- BNSF / Yellowstone River Bridge
- 17- Dawson Community College

Projection:
 State Plane Montana FIPS 2500
 NAD83, in meters
 November 2005

Data Source:
 Natural Resource Information System
 *Montana Towns
 *Montana Roads from TIGER/Line Files
 *Digital Orthophoto Quadrangles for Montana
 *Montana 1:24,000 scale Quadrangles
 DES
 *Critical Sites (ESF)
 *Airports
 *Bridges
 Dawson County
 *Emergency Shelters
 *Critical Sites

This map was created for fire and disaster planning only. Neither the county or the contractor will be responsible for any data inaccuracies associated herein.

Map Legend

- Critical Site
- Emergency Shelter
- ✕ Bridges

Roads

- I-94
- Local road or city street
- State and secondary highway

Select Critical Facilities In Dawson County

Vulnerable Populations

Vulnerable populations in the county include youth, elderly, group home residents, long term care residents, hospital patients, and disabled individuals.

A listing of the group homes, hospital, long term care and housing facilities is on file at the County Disaster Emergency Services office.

There are 16 daycare providers in the Glendive area. The various providers offer year-round and school-year services for infants to 12 years for both daytime and evening hours. A listing of the daycare providers is on file at the County Disaster and Emergency Services office.

Table 3.8 Dawson County Public Schools

<i>Name</i>	<i>Location</i>	<i>Number of Students</i>
Bloomfield Elementary	Bloomfield	12 (preschool) 4
Dawson High School	Glendive	424
Deer Creek Elementary	North of Glendive	18
Jefferson Elementary	Glendive	212
Lincoln Elementary	Glendive	191
Lindsay Elementary	Lindsay	10
Richey K-8	Richey	50
Richey High School	Richey	32
Washington Middle School	Glendive	370

Sources: Superintendent of Schools, School Clerks

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Chapter IV. Mitigation Strategy

The following goals were developed in response to the hazards of most concern to residents for current and future assets. The goal statements and a preliminary list of projects were formulated at the public meeting held in Richey on April 11. The remaining project ideas were identified during the meeting held in Glendive on May 10, 2005. All projects were prioritized during the May 10 public meeting. A wide range of projects was considered, the following represent the projects that were endorsed by the participants to the planning process.

GOAL ONE: Reduce or avoid flood damage to people and property.

Objective 1. Prevent injury, loss of life, property damage, and interruption of transportation and commerce from flooding of the Yellowstone River.

- 1.1.1. Select an alternative and move forward with resolving the issue of structures and infrastructure located in the 100-year floodplain in Glendive.**
- 1.1.2. Install floodgates at Cain's Coulee crossing.**
- 1.1.3. Design and install gauges at Cabin Creek by Gibb's Ranch and the Interstate bridge on the north side of Glendive to provide information for flood warnings.**
- 1.1.4. Stabilize the river bank to protect bridge pilings by the Black railroad bridge.**
- 1.1.5. Improve Road 130 (Marsh Rd) to an all-weather road, able to carry traffic in the event of Yellowstone River flooding in the interstate corridor.**

Objective 2. Prevent loss of life and damage from flash flooding.

- 1.2.1. Place seasonal reminders in the media about flash floods annually.**

GOAL TWO: Reduce the potential for hazmat spills and releases, and mitigate the potential impacts to life and property.

Objective 1. Reduce the potential for hazardous material releases.

- 2.1.1. Secure the Harvest States anhydrous ammonia plant in Richey to prevent accidental or unauthorized access.**
- 2.1.2. Fence the Cenex anhydrous ammonia tank farm in Glendive area.**
- 2.1.3. Look into a regulatory mechanism for managing parking and transport of vehicles carrying hazardous materials through Richey.**

Objective 2. Be prepared to respond appropriately in the event of a hazmat incident.

2.2.1. Request a list of the top 25 hazardous materials transported through the county on the railroad from BNSF.

2.2.2. Map all hazardous material locations in the county and distribute maps to first responders.

2.2.3. Identify and offer hazmat training to all first responders.

2.2.4. Develop an evacuation/warning plan for Richey in the event of an anhydrous ammonia leak or other hazmat spill or release. Include use of siren system.

2.2.5. Educate residents about what to do in the event of a hazardous material spill and make shelter-in-place brochures available to residents.



Unsecured Anhydrous Ammonia Tanks in Richey

GOAL THREE: Manage the impacts of severe winter storms.

Objective 1. Ensure individuals are prepared to respond safely to winter storms.

3.1.1. Provide brochures/information on how to cope with severe weather and weather information numbers.

3.1.2. Conduct winter safety/survival workshops in local communities.

3.1.3. Set up and test existing generator so that the school could be powered in the event of a winter storm that causes loss of power in the town of Richey.

Objective 2. Improve timeliness and accuracy of weather information for county residents.

3.2.1. Improve coverage, timeliness, and accuracy of weather information across the county.

3.2.2. Place a NOAA weather radio in every critical facility, public building, school, and day care center in the county.

GOAL FOUR: Minimize personal injury and economic effects of wind events.

Objective 1. Reduce existing hazards.

4.1.1. Address the hazard associated with tin blowing off the unused grain elevator in Richey.



Unused grain elevator in Richey with loose sheet metal

Objective 2. Ensure residents are educated to behave safely during wind events.

4.2.1. Educate residents engaged in sports, outdoor recreation, and outdoor occupations on what to do in lightning, wind, and severe summer weather events.

GOAL FIVE: Minimize impacts and be prepared to respond to drought-related events.

Objective 1. Prepare for potential drought-related events.

5.1.1. Maintain wildfire preparedness.

5.1.2. Consider large-scale spray operation for insect infestations as needed.

5.1.3. Support continued flexibility on use of CRP lands to reduce hazard fuels and provide economic relief to drought-affected producers.

Objective 2. Minimize potential impacts of drought.

5.2.1. Provide tools and training for producers on drought options related to cropping and livestock operations.

5.2.2. Provide water use and conservation education targeted towards residences covering such things as landscaping and lawn watering.

Project Ranking and Prioritization

The mitigation projects were prioritized by the participants at the final planning meeting held on May 10, 2005, in Glendive. Projects were ranked by high, medium, or low, by consensus of the meeting participants based upon subjective assessment against the following criteria:

- **Number of lives at risk**
- **Value of property at risk**
- **Infrastructure at risk**
- **Risk of business interruption/loss**
- **Cost/benefit of the project.**

Table 4. 1. Mitigation Project Prioritization

Project Number	Project description	Rank	Potential Resources
GOAL ONE	Reduce and avoid flood damage to people and property.		
1.1.1.	Resolve issue of structures in 100-year floodplain in Glendive, flood gates	H	City, County, DES, FEMA, USACE
1.1.2.	Flood gates at Cain’s Coulee	M	City, County, DES, FEMA
1.1.3.	Design and install flood gauges	H	City, County, DES, FEMA, USACE
1.1.4.	Stabilize river bank to protect bridge	M	BNSF, FEMA, Conservation District
1.1.5.	Improve standard of Marsh Road (130)	M	County, DOT
1.2.1.	Flash flood reminders in media	M	Radio, TV, News paper
GOAL TWO	Reduce the potential for hazmat spills and releases, and mitigate the potential impacts to life and property.		
2.1.1	Secure anhydrous ammonia in Richey	H	Harvest States, Town
2.1.2.	Secure anhydrous ammonia in Glendive	H	Cenex, City, County
2.1.3.	Regulatory mechanism for hazmat parking in Richey	H	Town, MSU Local Govt Center
2.2.1.	Request hazmat list from BNSF	M	Town, City, DES County, BNSF
2.2.2.	Map hazmat locations, distribute maps	M	City, County, DEQ, DES
2.2.3.	Hazmat training for first responders	H	DES, Fire Dept.
2.2.4	Warning/evacuation plan for Richey	M	Town, DES
2.2.5	Education and shelter-in-place brochures	M	DES, schools, media
GOAL THREE	Manage the impacts of severe winter storms.		
3.1.1	Provide information on winter storms	L	DES, schools, media
3.1.2.	Winter safety/survival workshops	L	DES, schools
3.1.3.	Test back-up generator in Richey	M	Town, DES, electric utility

3.2.1.	Improve weather information	M	NWS, DES
<i>Project Number</i>	<i>Project Description</i>	<i>Rank</i>	<i>Potential Resources</i>
3.2.2	NOAA weather radios in critical buildings	H	Town, City, County, schools, DES
GOAL FOUR	Minimize personal injury and economic effects of wind events.		
4.1.1	Address grain elevator hazard in Richey	M	Town, DES, Private owner
4.2.1.	Educate residents on what to do	M	DES, schools, media
GOAL FIVE	Minimize impacts and be prepared to respond to drought-related events.		
5.1.1	Maintain wildfire preparedness	H	Fire Depts, DNRC, BLM
5.1.2	Insect spraying	M	USDA
5.1.3.	Flexibility on use of CRP lands	L	County
5.2.1.	Training on drought management options	M	USDA, MT Dept of Agriculture
5.2.2.	Water use and conservation education	M	DNRC, County Extension, schools, media

Project Implementation

The projects listed above are the means by which the town, city, and county intend to realize the goals to become more disaster resistant. Accomplishing the projects will be dependent on funding, staff, and technical resources from a variety of sources including the town, the county, the state and federal government, not-for-profits, and the business community.

Some of the projects can be undertaken by the county within existing resources. One example of this would be to make shelter-in-place brochures available to the town of Richey. Another would be to establish a siren notification in Richey with the existing siren system to warn residents of a chemical leak or spill.

Some of the projects can be completed by the county with additional funding. The amount of funding needed depends on the project. The primary example of this type of project in Dawson County would be to address Yellowstone River floodplain concerns in the city of Glendive. Funding in excess of that available in the Glendive area will be needed to resolve this issue. That funding could be sought from the U.S. Army Corp of Engineers and/or FEMA.

Some of the projects will require a public-private partnership to accomplish. An example of this would be obtaining a list of hazardous materials shipped through the county on the Burlington Northern Santa Fe Railroad. Another example would be to work with Harvest States and Cenex to physically secure the anhydrous ammonia plants in Richey and Glendive from illegal or accidental access.

Some projects may require expertise not available in the county. For example, if the county hosts a training session on drought options for agricultural producers, expertise may need to be brought in from other locations.

Projects will be accomplished as resources, either at the local, state or federal levels, become available. Implementation of the plan will be the responsibility of the LEPC and the Dawson County Disaster and Emergency Services Coordinator acting on the behalf of the town of Richey, the city of Glendive, and Dawson County. Plan implementation also depends on the willingness of private corporations such as BNSF, Harvest States, and Cenex, and not-for-profit organizations such as the American Red Cross to participate in specific mitigation actions and projects.

In selecting projects to compete for funding whether it be existing internal funding or funding from state and federal sources, emphasis should be placed on the relative benefits compared to the cost of the project. Criteria such as number of people educated or protected and the dollar value of assets mitigated from potential hazards should be considered and weighed. Where possible a basic cost benefit and/or value analyses should be completed during the planning of the project.

The town, city, and county understand that while completion of the plan will make them eligible to compete for additional funds, it is in the best interests of the local jurisdictions and residents to proceed with those projects that can be done within existing resources while exploring avenues to obtain assistance for those projects beyond local capabilities.

Chapter V: Community Wildfire Protection Plan

Executive Summary of the Community Assessment

This Community Wildfire Protection Plan (CWPP) was prepared as a part of Dawson County's Pre-disaster Mitigation Plan (PDM) for the purpose of making the county more disaster resistant and better prepared to deal with wildfire when it strikes. The plan was written so that fire departments and other local government departments can use it as a stand-alone document, even though it is a chapter in the overall pre-disaster mitigation plan. The CWPP portion of the plan is written to meet the intent of the National Fire Plan objective to have the communities or as in this case Dawson County, assess its current situation and then develop and prioritize mitigation actions to address the values at risk. The plan takes the proactive approach of assessing risks and vulnerabilities, then identifying locally supported actions that can be implemented to prevent or eliminate the potential for loss and damage from a natural disaster. This plan meets the requirements for pre-disaster project funding and post-disaster assistance from the Federal Emergency Management Agency.

This CWPP is consistent with the national fire policy expressed in the National Fire Plan (NFP). The NFP was developed in August of 2000, "with the intent of actively responding to severe wildland fires and their impacts to communities while ensuring sufficient firefighting capacity for the future." (www.fireplan.gov) The NFP has five key areas: 1) firefighting, 2) rehabilitation, 3) hazardous fuels reduction, 4) community assistance and 5) accountability. Federal agencies like the Bureau of Land Management are directed to assist communities that have been or are at risk from wildfire. The assistance for Dawson County has come from the Rural Fire Assistance program in the form of funding for planning, training, equipment and education.

Collaboration between the local fire departments, DES Coordinator, local governments, Bureau of Land Management, Farm Services Agency and Montana Department of State Lands throughout this effort was key in producing this plan.

Fuel types vary from large stands of grasses, crops such as hay fields, sugar beets, wheat, barley, and pinto beans. There is sagebrush to scattered juniper to heavier concentrations of juniper and Ponderosa pine stands in the southeastern part of the county. Cottonwood bottomlands adjacent to the Yellowstone River also present some unique wildfire challenges. Fuel loading is light to moderate for most of the county. Wildfire ignitions in Dawson County are both natural and human-caused. Ignition sources include lightning, controlled burns, trash burning, farm equipment, fireworks, recreational activity, especially fall hunting and

railroads. The dry climate coupled with the recent years of drought, wind and flashy fuels and the remoteness and ruggedness of the county contribute to the wildfire hazard. Poor access roads and long driving times often slow response times for the fire departments.

From the identification of hazards in the risk assessment, a mitigation plan was prepared which includes identification of projects to decrease the county's risk to losses by wildfire.

Methodology

This risk assessment and mitigation plan was developed by using the following steps:

Hazards were evaluated as follows:

1. Identify wildfire hazards.

- a. This assessment was based on information gathered at meetings and discussions facilitated by the contractor from a variety of sources, primarily with local people such as firefighters, the Dawson County Disaster and Emergency Services Coordinator, Bureau of Land Management, Department of State Lands personnel, the Pre Disaster Mitigation Steering Committee and other stakeholders. The first meeting was held in conjunction with the PDM meeting, so a variety of interests in attendance had an opportunity to provide input for the CWPP. During this meeting the attendees provided examples of past wildfires and their concerns for future incidents. This group then agreed to allow the fire service to focus on the CWPP portion of the PDM. A Core Group was identified during that first meeting with the firefighters from the West Glendive and Richey Fire Departments.

Table 5.1 Dawson County Core Group

Name	Title
Richie Crisafulli	Asst. Fire Chief, W. Glendive F.D., chair
Tim Mort	Fire Chief, W. Glendive F.D.
Ed Crocket	Asst. Chief, Richey F.D.
Joe Beery	Captain, Richey F.D.

- b. This Core Group was established to give the contractor a team of firefighters to provide local information about hazards and review the information the contractor was to prepare. They also provided the values at risk. After the first meeting a list of hazards were prepared by the contractor and sent to the Core Group for review and validation to be done at a second meeting.

- c. That second meeting was convened in West Glendive and the priorities for protection were discussed and additional items and locations were added. A base map was prepared and included the critical infrastructure, areas of lightning activity, wildland urban interface locations and areas of past large fires.
- d. Contractor subsequent phone conversations with members of the Core Group and County DES Coordinator helped to characterize the county's wildfire situation and fine tune information in the risk assessment.
- e. Contractor researching of other plans, websites, reports and newspapers.

2. Prioritize the wildfire hazards.

- a. Hazards were given a preliminary priority at the first meeting.
- b. Through discussions with the Core Group and help from the DES Coordinator the most significant concerns for the county surfaced. Several key areas of higher probability were identified as well as some areas of potential life and property losses.
- c. A final list of wildfire hazards were prioritized for protection.
- d. Obtaining data on historical fires and their locations.

The Mitigation Plan was developed by gathering ideas and information from the CWPP Core Group, the PDM Steering Committee, the DES Coordinator and the contractor. The proposed projects were then listed, prioritized and sent out for review in September, 2005. Adjustments from that review were incorporated into the final product.

Introduction

Two meetings were held with firefighters from the West Glendive and Richey Fire Departments and the County's Disaster and Emergency Services Coordinator to explain the procedure for the development of the plan and to request their local knowledge to give the plan credibility. A Core Group of firefighters was identified to work with the contractor to assist in the development of the plan.

A fire protection plan has two distinct parts, 1) risk assessment and 2) mitigation of those risks. In order to protect the most important assets of a county from wildfire, they must first be identified and then prioritized. From this list the mitigation strategy was formed.

Area to be Evaluated

The entire county was evaluated for the Risk Assessment. Relatively low elevation flat agricultural lands characterize the county with some badlands. Elevations range from about 2000 to 3474 feet. There are

scattered state lands comprised of school sections and Montana Fish, Wildlife and Parks lands. Makoshika State Park is included in this assessment. The Bureau of Land Management has 62,016 acres of Federal land in the county.

Glendive is the largest community in the county with 4729 people and the county seat. Other communities or concentrated areas of residential development include West Glendive, Richey, Bloomfield, Forest Park, Highland Park, Lindsay, and Stipek. All of the communities were ranked as moderate risk in the Communities at Risk in the Federal Register (Volume 66, #160, August 17, 2001). Dawson County population is estimated at 8776.

The Wildland Urban Interface (WUI) boundaries established by the fire departments follow the standard one half mile buffer around each community. Dawson County also identified the Seven Mile Drive area that they wish to establish a WUI boundary.

For more detailed information about the characteristics of Dawson County please refer to Chapter I of this CWPP/PDM plan.

Historic Occurrences

Information provided by the local firefighters indicates that there are four areas of high frequency fire ignitions, two by lightning and two by the railroad. The railroad fires have been concentrated 10-15 miles east of Glendive just south of Interstate 94 and about 20 miles southeast of Glendive. The other sources of ignition are included the Assessment of Risk found later in this document.

The average numbers of fires per year for the county is estimated at 100 and are responded to by Glendive, West Glendive and Richey fire departments. The average wildfire size is estimated at about 75 acres. In the last 25 years, several large fires occurred in the county.

Recent fires include:

The Three Mile Fire in 2003 near Bloomfield was over 3000 acres. West Glendive F.D. spent four days and was assisted by the Department of Natural Resources and Conservation.

The Van Horn Fire north of Lindsay was also in 2003 and was over 1000 acres and McCone County assisted under mutual aid agreements.

The Lewis Fire, 2003 was about 850 acres and was in a creek bed with lots of trees. West Glendive F.D. responded to this incident three times in a

two-week period because of the fire rekindling itself in the timbered bottoms. DNRC was involved on this one as well.

Two large fires occurred on the Ferguson Ranch on the backside of Makoshika State Park. They were both about 800 acres, in steep terrain and in timber. DNRC was involved in both fires.

Makoshika Park is always a threat and has had several big fires, mostly from lightning and with some human-caused ignitions.

Two large fires in the past 30 years have occurred on BLM lands as noted in Table 5.2 below. By extrapolating the information from the BLM and information from the local firemen the probability for a large fire in the county is likely to occur two to four times per decade. Dawson County has some vulnerable subdivisions with potential for large property losses.

Table 5.2 BLM fires in Dawson County of 100 acres or more in the past 30 years

<i>Year</i>	<i>Fire Name</i>	<i>Controlled Size</i>
1983	MILCK	100.0
2003	3 Mile	3164.0

Source: BLM Montana State Office

The above chart was provided by Randy Schardt, GIS Specialist in the BLM State Office, Billings, MT, June 2005



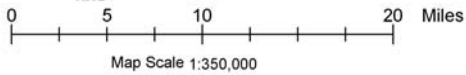
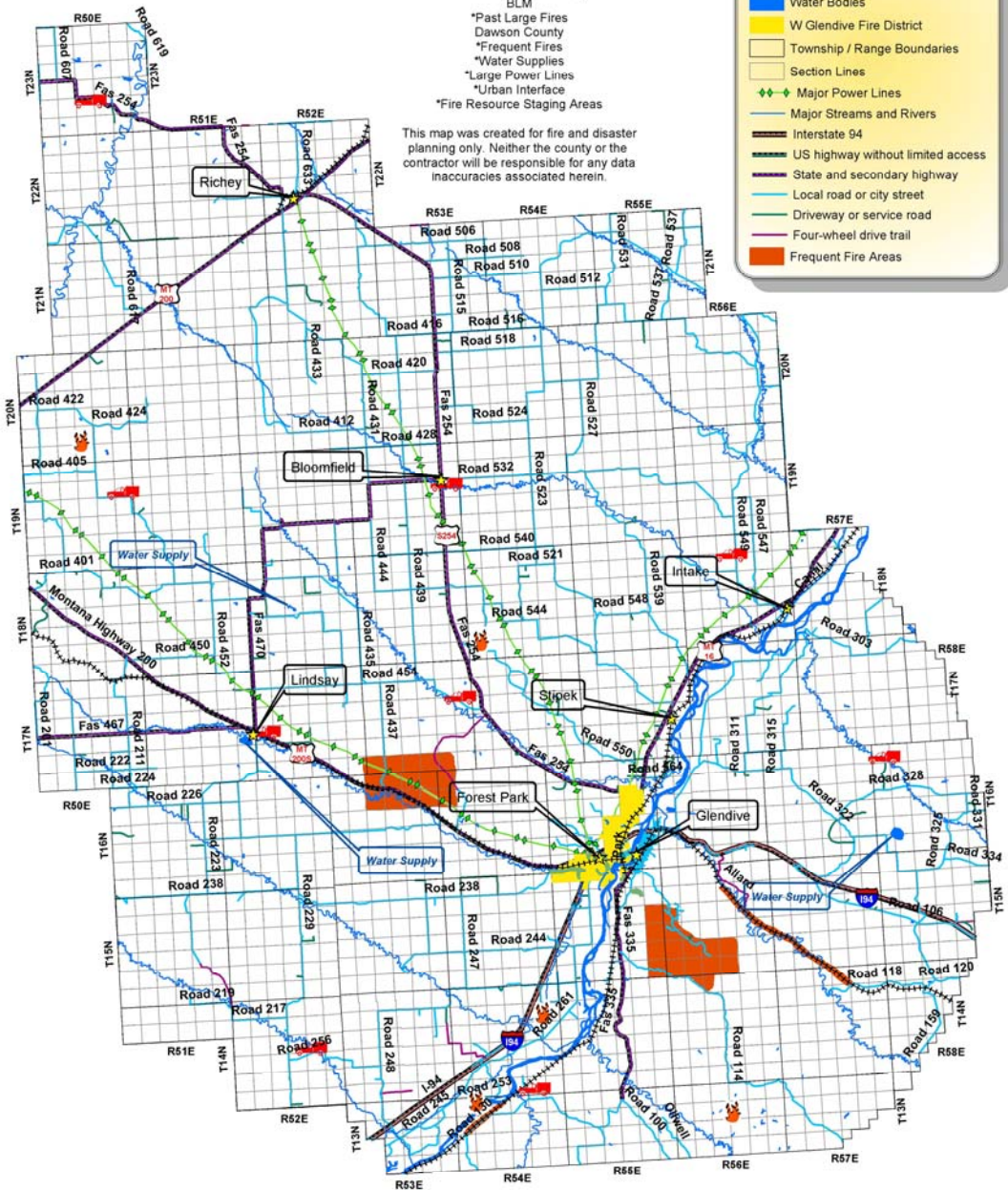
Projection:
 State Plane Montana FIPS 2500
 NAD83, in meters
 November 2005

Data Source:
 Natural Resource Information System
 *Montana Towns
 *Montana Roads from TIGER/Line Files
 *National Hydrography Dataset Stream Route Reaches
 *Montana Townships
 *Montana Public Land Survey Lines
 BLM
 *Past Large Fires
 Dawson County
 *Frequent Fires
 *Water Supplies
 *Large Power Lines
 *Urban Interface
 *Fire Resource Staging Areas

This map was created for fire and disaster planning only. Neither the county or the contractor will be responsible for any data inaccuracies associated herein.

Map Legend

- ☆ Community
- 🚒 Fire Resource Staging Area
- 🔥 Past Large Fires
- 🏘 Urban Interface
- +++++ Railroads
- 🌊 Water Bodies
- 🟡 W Glendive Fire District
- 📏 Township / Range Boundaries
- 📏 Section Lines
- ⚡ Major Power Lines
- 🌊 Major Streams and Rivers
- 🛣 Interstate 94
- 🛣 US highway without limited access
- 🛣 State and secondary highway
- 🛣 Local road or city street
- 🛣 Driveway or service road
- 🛣 Four-wheel drive trail
- 🔴 Frequent Fire Areas



Dawson County Fire Districts, Resources and Past Large Fires

Individual Community Assessments

Glendive/West Glendive

(Source: Tim Mort, Chief, West Glendive Fire Department and George Lane, Chief, City of Glendive Fire Department)

Current Situation

This community is basically two communities that run together and are located in the south central portion of the county on Interstate 94. Glendive/West Glendive is considered a full service community and has a combined population of about 6500. The City of Glendive Fire Department has protection responsibilities within the city limits. The assets protected by the West Glendive and Richey Fire Departments are all of the communities within the county, except for the City of Glendive, including residences, subdivisions like Forest Park, Highland Park and clusters of homes in the 7 Mile Drive area, business districts, farms, ranches and oil and gas field facilities. Glendive/West Glendive is bordered by river bottomland to the immediate east and badlands to the south, which may present a moderate risk in late summer or early fall. One condition exists that could be considered a higher risk under dry conditions and a strong southern wind. The large pine/juniper stands that run from Wibaux County to the north terminates in Makoshika State Park, where the headquarters are located within the city limits of Glendive.

Within the city limits of Glendive/West Glendive the risk of wildfire is low to moderate, however there is concern from the Chief of the City of Glendive Fire Department that there are areas in the wildland urban interface that may present a difficult suppression situation. There are fuel types and rugged terrain that are on the edges and extend through the community that the City of Glendive Fire Department does not have the appropriate equipment to fight these fires. When fires occur in these areas they are forced to rely on the equipment of the West Glendive Fire Department, which in turn increases the length of response times.

The area west of town is cropland and grasslands with moderate fuel loading and some heavier fuel loading on Conservation Reserve Program (CRP) acres.

Future Development

There has been some new activity in the oil fields recently and the projected activity will continue as long as the fuel prices remain elevated. There are new oil wells in the planning stages and some production has already begun. This activity is taking place southeast of Glendive. Additional construction and the related impacts of more oil field workers in the area will most likely increase the activity for the fire department.

Richey

(Source: Butch Raisl, Chief, Richey Fire Department)

Current Situation

Richey is an unincorporated community with a population of 189 according to the 2000 U.S. Census. The Fire Department is responsible for the city of Richey, all infrastructures, town of Bloomfield, northern Dawson County and all property and lands within a 25-mile radius of Richey. They also protect grain elevators, railroad properties, oil field properties and oil pumping stations.

Richey is surrounded primarily by rolling hills, crop farming and Conservation Reserve Program lands, which in a dry year can have a moderate to high risk to wildfire. Inside the limits of the community the risk is low.

Future Development

The increased activity in the oil fields has started a trend of more activity for the fire department. There is more activity on the roads as well as more traffic presenting hazardous materials incidents including fire and spills with vehicle accidents. Other than the new activity in the oil fields near Richey, no major development is planned in the short term.

Forest Park

(Source: Tim Mort, Chief, West Glendive Fire Department)

Current Situation

Forest Park is a subdivision just west of West Glendive about two miles. There are approximately 330 homes. The West Glendive F.D. is responsible for the development and the surrounding countryside. Much of the surrounding country is either grassland or oil production fields. There is also some CRP lands nearby which tends to be a problem in the late summer and fall when it cures out and has not been grazed or cut. Fuel build-up provides an easy target for lightning, machinery caused, or hunter caused fires. The subdivision of Forest Park has a low probability for ignition, because of the surrounding lands.

Future Development

Oil field activity has increased in the county and there are some active oil fields just west of Forest Park. The fire department is equipped and trained for primarily grass fires. Increased oil field work will put demands on a department not well equipped or trained for that type of incident.

Highland Park

(Source: Tim Mort, Fire Chief, West Glendive Fire Department)

Current Situation

This subdivision lies northeast of Forest Park and contains about 135 homes which are clustered together. The surrounding country is grass type wildland and crops.

Future development

This sub-development will likely grow slowly with a house or two a year as people choose to move out of town.

Stipek

(Source: Tim Mort, Fire Chief, West Glendive Fire Department)

Current Situation

Stipek is a cluster of about six to eight homes about eight miles north of Glendive, surrounded by grassy broken country with a low risk to wildfire.

Future Development

Nothing is planned for the near future.



Broken country north of Stipek, near the county line

Seven Mile Drive

(Source: Tim Mort, Fire Chief, West Glendive Fire Department)

Current Situation

Although this area is not a formal community, Fire Chief, Tim Mort expressed some real concerns about this cluster of 40 to 50 homes about a mile south of Forest Park. Mid-Rivers Communications has its main office in this location. This area is on a bench with heavy grasslands and timber. Chief Mort stated that this is one of the most worrisome areas in the county. The fire potential is moderate to high with the risk of serious consequences should this area become involved in wildfire.

Future Development

Expectations for this area are for slow growth and results from people wanting acreages and to be living out of town a short distance.

Lindsay

(Source: Tim Mort, Fire Chief, West Glendive Fire Department)

Current Situation

Lindsay is a small community of about 20-25 homes on Highway 200 S northwest of Glendive about 20 miles. The surrounding country is primarily farming and there are some CRP acres. Fire risk to Lindsay is moderate and also moderate within the community, due to the houses being close together and clustered in weeds and trees. Grasslands and crops that run right to the edge of town surround the community.

Future Development

There are no plans for any development in the short term for Lindsay.

Intake---Chief Mort indicates that this is no longer a community.

Bloomfield---Helen Conradsen, DES Coordinator stated there are three homes, a post office, school, and service station in Bloomfield. It is located in a low area of the county and surrounded by non-irrigated farmlands, pastures, grasslands and brush. Wildfire risk to Bloomfield is low and also low within the community.

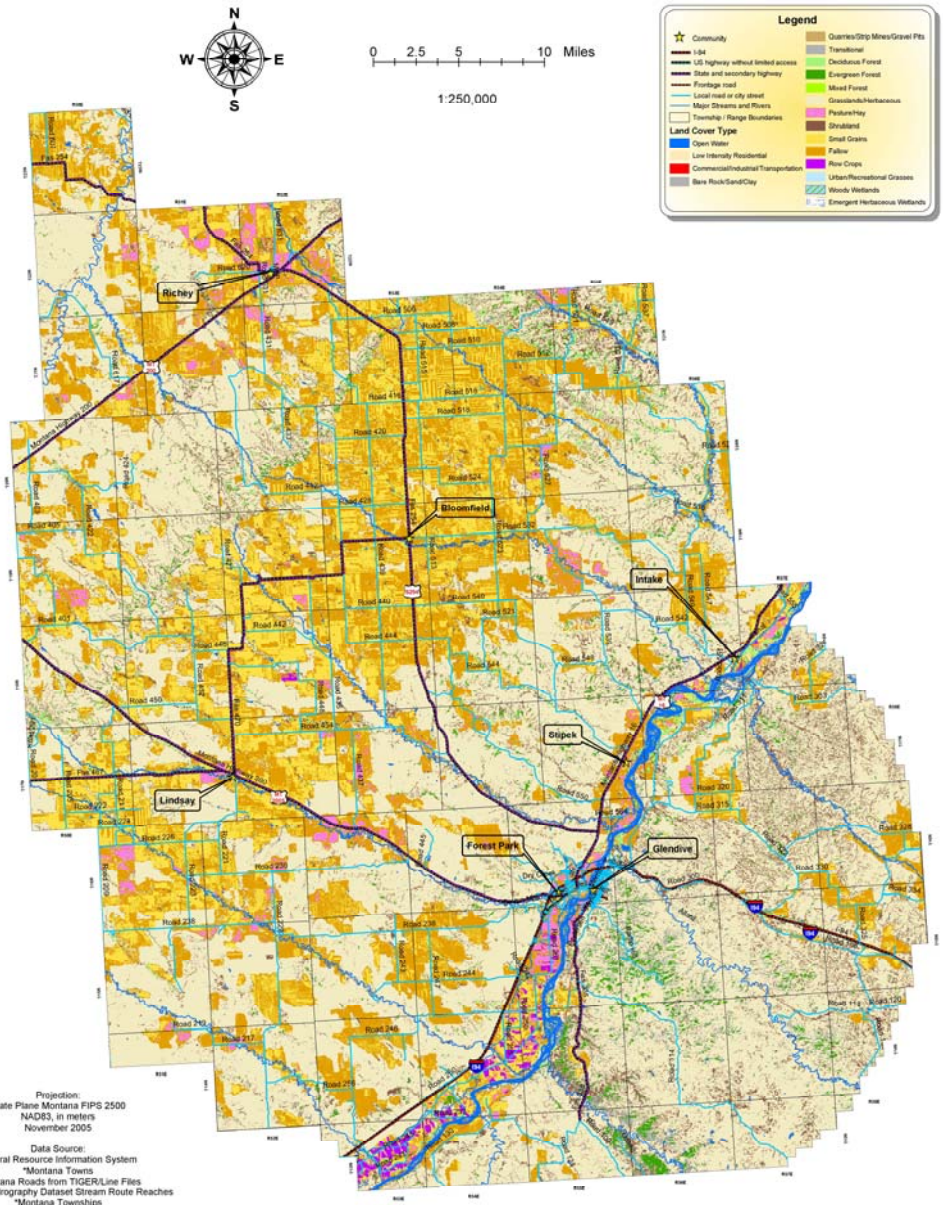
Assessment of Fuel Hazard

Vegetative Fuels

Dawson County has basically three types of topography, flat lowland areas primarily used for agriculture, river bottomlands and badlands. In the agricultural areas, vegetation consists of moderate to heavy stands of grasses, brush and cottonwood bottoms along the streams and the Yellowstone River. From the Yellowstone River to the north and west the land becomes relatively flat and is utilized as cropland for sugar beets, wheat, corn, alfalfa and barley. The agricultural lands of the county have low potential for fire until crops cure out and become dry from mid summer into the fall. In a dry year, the fire danger increases greatly. There can be thousands of acres of dry crops, which are very susceptible to both lightning and man or machinery caused ignitions. Many of these large fields are contiguous and once fire is established, difficult to control.

The badlands areas of the county present a different situation. These areas are mostly remote with few roads and very low standard roads. Detection of fire starts is also a problem in the badlands. Low population densities and the remoteness can allow a fire to burn for some time before it is detected. In very dry years natural grasses and juniper can support rapidly spreading fire. Dawson County like most of eastern Montana experiences strong winds much of the year. Thunderstorms are also a source of ignition and strong winds.

The river bottomlands on the Yellowstone have large numbers of cottonwood trees and brushy undergrowth. There are recreation properties in these bottomlands which are difficult to access.



Projection:
State Plane Montana FIPS 2500
NAD83, in meters
November 2005

Data Source:
Natural Resource Information System
*Montana Towns
*Montana Roads from TIGER/Line Files
*National Hydrography Dataset Stream Route Reaches
*Montana Townships
*USGS National Land Cover Data for Montana

This map was created for fire and disaster planning only. Neither the county or the contractor will be responsible for any data inaccuracies associated herein.

VEGETATION TYPES

Structural Fuels

With the exception of rural residences, for the most part, structural fuel hazards are located within or in close proximity to the various communities, subdivisions or clusters of rural homes. From personal observation most homes are typical stick frame construction with wooden or vinyl siding. Most have composite asphalt roofing materials.

There has been an increase in the establishment of summer/recreation residences along the Yellowstone River, mostly west of Glendive. These facilities are being placed in the river bottoms where the fuel build-up from grasses, brush and cottonwoods are present. Typically not much attention is paid to the type of building materials or defensible space for reduction of loss to wildfire.

Assessment of Risk

Ignition Profile

In 2001, all of the communities in Dawson County were identified as a medium risk to wildfire in the Federal Register. The listed communities at risk were Forest Park, Glendive, Intake (no longer a community as verified by the Fire Dept.), Lindsay, Richey and Stipek.

The Core Group members for the CWPP identified these ignition sources for wildland fire during the second meeting held in West Glendive on March 28, 2005.

- 1. Lightning**
- 2. Railroads**
- 3. Industrial activities**
- 4. Rural residents**
- 5. Power lines**
- 6. Highways/roads**
- 7. Recreation activities**
- 8. Escaped residential control burns**
- 9. Haying/combining activities**
- 10. Oil field activities**
- 11. Fireworks**

The Core Group identified two areas most often hit by lightning storms. These two "lightning alleys" are located in an area 8-12 miles northwest of Glendive and about three to eight miles southeast of Glendive (Makoshika State Park). As expected both railroad fires and highway/roads fires occurred in those corridors. The same is true for power lines. The escaped residential control burns were

mostly related to burning trash in a barrel on private property. Haying and combining activities in the latter part of the summer were mostly caused by equipment malfunctions.

Risk of human-caused ignition is highest along roads and highways, power lines, railroad tracks, and around recreation sites. Risks of human-caused ignitions are moderate in areas of dispersed recreation and rural residences. Risks of ignition to wildlands are lowest within the developed areas and on agricultural properties while the crops are green. Hunting season appears to be the most active in terms of human-caused ignitions.

Behavior and Development Trends

There is little or no activity by the county for encouraging development of new structures or subdivisions that increase the defensibility for wildfire. This leaves new development without any local guidance to consider wildfire in the choices for location, building materials, defensible space, and access for emergency vehicles. Many people would be willing to consider these things when building, but typically they are not aware of the items they should be thinking about. The challenges presented by development differ depending on the fuel types, terrain, access, and response times. A discussion with qualified firefighters before the development is started can provide information to the homeowner or developer that can greatly increase the defensibility of their project. Often these changes to provide for a more defensible space costs little or nothing.

Much of eastern Montana and western North Dakota is experiencing a boom in oil field activity. This oil field activity is and will continue to increase the Fire Departments' response numbers. More traffic incidents have been occurring and with those come wildfire ignitions and hazardous material spills.

Unique Wildfire Severity Factors

The badland areas present a special challenge for firefighters in that much of the landscape is very difficult to access. There are areas with few roads and those that do have roads are often in very poor condition. This situation also adds to response times. Drought over the past seven or eight years in the county has left the cedar (juniper) trees in the badlands in a stressed condition. Live fuel moistures in these trees have been very low and are conducive to greater spread rates for wildfire. Recent fires this year (2005) in adjacent Rosebud County have demonstrated that the low fuel moistures are continuing and have noticeably contributed to rate of spread. (Brad Sauer, Fuels Specialist, Miles City office of the BLM, June 2005).

Oil and gas is produced and stored in the northeastern and southeastern portions of the county. Wildland fire in the areas of oil production has the potential to interrupt production for short periods of time. Human activity in the oil fields also increases the chances for ignition.

Critical community infrastructure was identified by the PDM steering committee. The values for the critical infrastructure are provided in Chapter III of this plan. Most of the county's critical facilities are at low risk for wildfire. There is a large electronic site situated on top of a ridge in Makoshika State Park, however it is in a very defensible location with almost no vegetation around these facilities (see photo on page 13). According to Chief Mort, there is a Cenex tank farm that lies in the middle of the West Glendive Fire District with several million gallons of gasoline and distillates stored there. Over 100 tanker trucks per day come to this site. This type of site requires specialized training for the Fire Department for both fire and hazardous materials.

Tourism/recreation is an increasing sector in the economy of Dawson County. Both residents and visitors enjoy outdoor activities year-round in the county. Most of this activity is either fishing for paddlefish in the Yellowstone River in the spring months and the upland bird and deer hunting in the fall (source: Tim Mort, Fire Chief). These activities have a positive impact to the economy of the county. Numerous out of state hunters come to Dawson County in the fall months (Source: Helen Conradsen, DES Coordinator).

Values to be Protected

- 1. Health and Safety of the public and firefighters**
- 2. Real property, public and private infrastructure**
- 3. Cropland/Grazing lands**
- 4. Recreation/Economic Impacts**

1. Health and Safety

Dawson County has a well-staffed wildland volunteer firefighting force that is spread out into the county in two Fire Departments in West Glendive and Richey. These two departments have a mutual aid agreement to assist each other when the need arises. Remote locations, low population numbers, and poor communication systems between firefighters and other support functions can add more safety challenges to fighting wildfire. Dawson County is concerned about the health and safety of their volunteer fire department personnel.

Adding to that concern the county has been in a drought situation for nearly a decade. The potential for a greater number of fires at one time and large fires exist under these strained drought conditions. Dawson County Fire Departments have a good safety record in suppression of wildfires and desires to maintain that record. Circumstances related to these conditions demand that attention be paid to the safety of the firefighting staff and the public. One of the key ways of maintaining and strengthening safety is to ensure each department is maintaining good leadership skills and providing safety training to their volunteer firefighters. Often times in counties with low numbers of residents and large acres, the Fire Departments do not have much depth in leadership skills to handle multiple ignitions at one time. Having critical numbers of Incident Commanders at the appropriate level for wildfire is key to safe suppression actions. Training of personnel to meet requirements in ample numbers and to maintain their qualifications to meet the County's suppression needs is important for safety.

One of the most successful methods to improve the safety for both the Fire Department personnel and the public is continued training for fire personnel.

2. Real Property, Public and Private Infrastructure

In many parts of Dawson County, wildfires are not only a threat to the landscape, but also to communities, homes, ranches, businesses or infrastructure facilities. Two of the biggest concerns in terms of fuel concentrations are found in either Conservation Reserve Program acres or in the timbered areas southeast of Glendive. These two categories of lands should be looked at closely in terms of putting people and property at risk.



Steep timbered slopes of Makoshika State Park southeast of Glendive-photo by Rand Herzberg

3. Cropland and Grazing Lands

Dawson County's economy depends in part upon agriculture. Croplands, especially in late summer can be at risk to wildfire. Losses of crops can be very devastating to ranchers and farmers. These losses also affect other support businesses and the county tax base.

Grazing of private, state and federal land is also an important component to some ranching operations. Losses of forage to wildfire have the same impact, as noted above.

4. Recreation and Economic Impacts

Fish and Wildlife Resource

Dawson County has a large amount of intact native wildlife habitat. The two primary habitat types are grasslands and riparian areas. According to John Ensign, Montana Department of Fish, Wildlife and Parks (FWP),

Region 7 Wildlife Manager there has been very little formal wildlife population inventories in the county, however they do have inventories on mule deer, white-tailed deer, sharptailed grouse and antelope.

Big game species include mule deer, white-tailed deer and antelope. Small mammals such as fox, badgers, hares, raccoon and coyotes are common.

Numerous raptors are found in the county including golden and bald eagles, kestrels, red-tailed hawks, Swainson's hawk and ferruginous hawks, prairie falcons and owls. Sharp-tailed and sage grouse, turkey, Hungarian partridge and pheasant are found in the uplands. Migrating ducks and geese pass through the county and shorebirds frequent the Yellowstone River. Small numbers of year-around songbirds and numbers of migratory birds pass through and/or spend some portion of the year here. There are occasional migrating whooping cranes that pass through the county.

The fishery in Dawson County is composed almost exclusively of warm water species in the ponds and in the Yellowstone River, including catfish, two species of sturgeon, walleye, sauger and paddlefish. Painted turtles, various snakes including rattlesnakes, other reptiles and amphibians are present.

Recreation Resource

Hunting and fishing provide recreation experiences in the county for residences and non-residents. According to Bea Sturtz of the FWP, Block Management Division, there are 26 landowner participants in the program. Block management lands are private lands that are made available for public hunting through this program. Non-resident hunters come primarily from the upper Midwest.

Wildfire season usually occurs during late summer and early fall when these activities are occurring and can deter hunters from coming to the area if there are fire closures or active wildfires going on. Fishing season on the Yellowstone River may also be impacted by an active wildfire season. Actual loss of wildlife habitat and water degradation may result from wildfire.

Assessment of Economic Values

Dawson County's most important economic industrial sectors are services, retail trade and transportation and public utilities. Detailed economic information is provided in Chapter III.

Assessment of Ecological Values

As a result of the ranges in elevation, aspect, temperature, precipitation, vegetation, and terrain in the county, Dawson County provides a range of wildlife habitat. The county supports species such as white-tailed and mule deer, upland game birds as well as warm water fish species in the rivers and ponds. In addition, numerous small mammals, fur-bearers, and migratory and non-migratory songbirds reside or pass through the county.

Air quality is generally excellent due to natural dispersal and lack of major industrial activity in and to the west of the county. (Source: Montana Department of Environmental Quality). Short-duration impacts to air quality include smoke from wildland fire in the summer and fall, smoke from ditch burning in the spring, dust from travel on unpaved roads, and dust from agricultural practices.

Potential Loss Estimate-Wildfire Scenario

A wildland fire scenario has been developed in order to estimate potential losses.

In this scenario, a resident of Seven Mile Drive area was burning some trash in a barrel behind his garage. While leaving the barrel unattended a south wind picks up to 25 MPH and the fire escapes into heavy dry grasses. The fire moves north through 90 acres and 15 of the homes in the area, burning four of them for a total loss. Several vehicles and outbuildings are lost to the fire. The fire seriously damages two other homes. The West Glendive Fire Department is on the scene within 15 minutes and is able to cut off the fire before it moves into more homes. The losses total \$453,610.

Table 5.3 Estimated Costs of Farmstead Fire Scenario

<i>Asset</i>	<i>Number</i>	<i>Cost per each</i>	<i>Total cost</i>
Residence lost	1	\$120,000	\$120,000
Residence lost	1	\$70,000	\$70,000
Residence lost	1	\$80,000	\$80,000
Residence lost	1	\$75,000	\$75,000
Residence damaged	1	\$11,000	\$11,000
Residence damaged	1	\$12,000	\$12,000
Vehicles	3	\$20,000	\$60,000
Outbuildings	2	\$6000	\$12,000
Tons of hay	85	\$80	\$6,800
4 wheeler	1	\$2,500	\$2,500
Suppression costs*	1	\$4,310	\$4,310
Total			\$453,610

Source: John Devier, Realty One of Glendive, Randy Sanders, DNRC

These figures are approximately what the Department of State Lands pays for contracting these types of fully staffed engines.

2 Type 6 engines, fully staffed at \$1330/14 hour shift	\$2660
Structure engine, fully staffed at \$1600/14 hour shift	\$1600
Food and water	\$50
Total	\$4310

Assessment of Fire Protection Preparedness and Capability

Dawson County has three fire departments, West Glendive, Glendive and Richey. The West Glendive Fire Department is responsible for the West Glendive Fire District and is contracted by the county for the balance of the county. The City of Glendive has its own fire department and typically stays within the city limits, however they do have a mutual aid agreement with the West Glendive Fire Department to assist them when needed. The Richey Department handles the north end of the county and has a structural truck for fires in the Town of Richey. The DNRC and BLM are also available for fire suppression with equipment and personnel.

The following information about the fire departments is intended to give the reader a sense of the fire protection capabilities of the county.

Table 5.4 Fire Fighting Capability Ratings

<i>Department</i>	<i>ISO* Rating for Structure Fires</i>	<i>Rating for grass fire capability</i>	<i>Rating for wildfire capability</i>	<i>Number of firefighters</i>
Richey	7	2	5	34
W. Glendive	5/9*	1	3	22

Source: Fire Chiefs

*rating of 5 with hydrants and rating of 9 without hydrants

ISO=Insurance Services Organization

1 is very able and 10 is unable

Over the past 30 years Dawson County received the following funds through the Rural Community Fire Protection Grant (RCFP), the Volunteer Fire Assistance Grant (VFA) and the Rural Fire Assistance Grant (RFA). The funds received through these programs have purchased equipment and training and have improved the capability of the Fire Departments, especially in the last four years.

Table 5.5 Fire Assistance Funds by Program

	RCFP	VFA/RFA	VFA/RFA	VFA/RFA	VFA/RFA	Total
Year	75-2000	2001	2002	2003	2004	
Dawson	\$14,110	\$18,271	\$13,965	\$25,150	\$20,000	\$91496

Source: Mike Weiderhold, DNRC, Missoula, June 2, 2005.



Richey Fire Hall

Table 5.6 Dawson County Fire Apparatus

<i>Department</i>	<i>Description</i>	<i>Capacities/Features/Comments</i>
Richey	City of Richey Fire Truck 1968	750 gpm pumper, 1968 Mack City Use Only
Richey	Richey Rural Structure engine	750 gpm pumper, 400 gal. cap., 1964 Chevy
Richey	Water Tender	3000 gal. cap., 1974 Ford 8000.....Richey's only water source
Richey	Patrol unit	325 gal. cap., 1979 Ford F250....grass fire unit
Richey	Patrol unit	200 gal. cap., 1996 Ford F250....grass fire unit
Richey	Turn out gear	Loin-Bravo 2000, 15 each
Richey	Wildland Coveralls	Bulark-Nomex, 15 each
Richey	SCBA's County	MSA, 4 each
Richey	SCBA's City	Scott, 6 each
Richey	Radios in units	Motorola, 5 each
Richey	Portable Radios	Motorola, 5 each
W.Glendive/DR*	WG-1 Howe Pumper	1970 Class A, 1000 gal. cap. For W. Glendive fires only
W.Glendive/DR*	WG-2 Tender	2005 Freightliner, 3000 gal. cap., all fires
W.Glendive/DR*	WG-4 Foam Pumper	1970(?) International, 500 gal. water, 500 gal. Foam
W.Glendive/DR*	WG-3 Pumper	1984 Ford, Class A, 750 gal. cap., County and WG fires
W.Glendive/DR*	WG-9 Tender	1986 Ford, 2000 gal. cap., backup unit....runs when needed
W.Glendive/DR*	WG-12 Tender	1988 Ford, 2000 gal. cap., County and WG structure fires
W.Glendive/DR*	WG-14 Grass Rig/Rescue	1995 Dodge, 1 Ton, 300 gal. cap., Foam capable, county vehicle fires, back up grass rig
W.Glendive/DR*	WG-15 Grass Rig	1999 Ford, 1 Ton, 350 gal. cap., Foam capable, all grass fires
W.Glendive/DR*	WG-16 Grass Rig	2001 Ford, 1 Ton, 275 gal. cap. Foam capable, all grass fires
W.Glendive/DR*	Grass Rigs	9 at satellite positions, 250 gal. cap. All radio equipped...variety of model years
W.Glendive/DR*	WG-6	Radio in personal vehicle...Chief

W.Glendive/DR*	WG-7	Radio in personal vehicle...Asst. Chief
W.Glendive/DR*	WG-5	Radio in personal vehicle...First Officer
W.Glendive/DR*	WG-10	Base station at fire hall
W.Glendive/DR*	SCBA's	Scott (high pressure), 24 each
W.Glendive/DR*	Hand held radios	Motorola, 15 each
W.Glendive/DR*	Mobile radios	Motorola, 14 each
W.Glendive/DR*	PPE, wildland	Overalls, hardhats, gloves, fire shelters for every firefighter
W.Glendive/DR*	PPE, structure	Coats, pants, boots, gloves, helmets, hoods for every firefighter
W.Glendive/DR*	Foam applicator	Foam Pro, 1 each
W.Glendive/DR*	Drip torches	4 each
Glendive FD	Engine 1, Type 1	1250 gpm
Glendive FD	Engine 2, Type 1	1000 gpm
Glendive FD	Command	Ford Van
Glendive FD	SCBA, 20 each	Scott high pressure
Glendive FD	Air compressor	1 (Bauer)
Glendive FD	Hose 3" NH Supply	NH Handline 6" Hard Suction
Glendive FD	Monitor	1 each
Glendive FD	Positive Pressure Fan	1 each
Glendive FD	Drip torch	1 each
Glendive FD	Saw	1 chain and 1 circular
Glendive FD	Smoke ejectors	2 each
Glendive FD	High angle rescue	Tripod, Harness 2, Ropes 4
Glendive FD	Haz-Mat Decon	
Glendive FD	PPE, Structural	

Source: Fire Chiefs

In addition to the above listed apparatus, the BLM has the following resources available to assist Dawson County. From Miles City (to Glendive) one Type 6 engine and two Type 4 engines with a response time of one hour and two Single Engine Airtankers (SEAT's) with a response time of 45 minutes.

MITIGATION

Background

- a. Existing situation

Most of the critical infrastructure in the county is in defensible space for wildfire.

Dawson County has been in a drought for almost a decade. Historically this is a common cycle in weather patterns broken by periods of above average moisture. In the spring and early summer of 2005 rainfall has been far above average. However, live fuel moistures in juniper trees are still below normal. (Brad Sauer, Fuels Specialist, BLM, Miles City, MT, June 2005). The drought may have been mitigated some, but it is still in effect. To recover from the current drought situation, it will likely take years of above average precipitation.

Recent history indicates that most wildfires are relatively small, about 75 acres and have not been a serious threat to the communities. However there have been several large fires in adjacent counties and the potential under the right weather and fuel conditions wildfire could enter the urban interface or certainly impact rural residences. The county does have some notable issues with structures and facilities near CRP lands across the county, Makoshika State Park and crops from mid-summer into the fall. There are also some safety issues with some of these areas, primarily from a fire equipment access standpoint.

The wildland fire service in the county has a number of positive attributes.

The West Glendive and Rich fire departments are spread fairly well geographically. The fire departments have been proactive in positioning their satellite equipment. They have trained firefighters near them for staffing. The equipment for the fire departments appears to be relevant to their needs, (with the exception of the Glendive fire department which has no wildland firefighting capability) however some of it is outdated, especially in the Richey Fire Department. Volunteer firefighter numbers seem to be appropriate, but as with almost any volunteer fire department, many of the firefighters are not available part of the time. Training for volunteer firefighters is usually a challenge for most departments. It is difficult to find the time to work in training, when most have jobs and other responsibilities. The level of fire protection in Dawson County is good and all of the fire departments work well together, sharing information and assisting each other with fires in their areas of responsibility.

b. Organizational structure

During the first CWPP meeting a number of firefighters from throughout the county were present. In order to have a smaller working group, the Core Group was established at the first meeting. The Core Group consisted of the Fire Chiefs of West Glendive and Richey fire departments and the county DES Coordinator. There was also assistance from the Montana Department of State Lands, BLM, District IV DES Representative, Glendive Fire Chief and Farm Services Agency. The contractor took feedback provided from the Core Group to develop this mitigation plan. Once the plan was written the Core Group and the others mentioned above had the opportunity to review the plan to add, subtract or modify it. Public involvement was solicited at the third PDM meeting and those items were included in this plan. The draft CWPP went out for review in September, 2005 and those comments were considered in the finalization of the CWPP.

Goals and Objectives

The intent of developing the Community Wildfire Protection Plan is to reduce the impacts of wildfire to the County. Dawson County firefighters and DES Coordinator developed the following goals, objectives, and projects with additional suggestions from the Pre-Disaster Mitigation Steering Committee and the contractor.

Goal 1: Reduce the area of Wildland Urban Interface and critical resources burned.

Objective 1: Provide information to landowners and CRP contract owners

about effective approved methods to reduce the risk to their buildings and crops. Encourage the BLM and DNRC to conduct strategic fuels reductions projects.

1.1.1. Fire departments identify private, state and federal properties at risk.

1.1.2. Plan and install fire breaks around farmstead/ranch

improvements and crops. Utilize the local Farm Services

Agency personnel to assist in getting this information out to

landowners at risk.

1.1.3. Develop a demonstration project with a farmer or rancher and promote the defensible space with nearby CRP lands by on-

site visits. This would be a coordinated effort with the Fire Department, Farm Services Agency and the landowner.

- 1.1.4. Farm Services Agency share information with CRP landowners about new changes (2002) in CRP rules for fire protection.
- 1.1.5. Request that the BLM and DNRC plan and implement fuels reduction projects in key locations, especially near Wildland Urban Interface boundaries. This includes the continuation of the work being done by the BLM in the Cedar Creek area.
- 1.1.6. Look for funding opportunities to provide wildland firefighting equipment for the City of Glendive FD.

Objective 2: Provide information and assistance to other landowners either in the wildland urban interface or with properties away from communities who are at risk to wildfire.

- 1.2.1. Utilize the “Living with Fire, A Guide for the Homeowner”, a Northern Rockies Fire Prevention Team publication to assist property owners at risk. Fire Department personnel will identify and work with these property owners.

Objective 3: Look for opportunities to provide additional reliable water sources in key locations.

- 1.3.1 Firefighters identify areas in the county that need to have new or improved reliable water sources.
- 1.3.2. Convene fire department personnel with other county personnel such as the road crew, local farmers/ranchers and the DES Coordinator to identify and improve existing water sources and establish new key locations for water sources.
- 1.3.3. Fire departments apply for funding of these identified needed new or improved water sources.

Objective 4: Look for areas of poor accessibility for suppression activities.

- 1.4.1. Identify areas where there are fire equipment access issues that can be worked on to improve effectiveness of fire responses.
- 1.4.2. Work with the country roads department to identify and improve poor road access into critical areas.

Goal 2: Educate the public about wildfire in the county.

Objective 1: Look for new and creative ways to raise public awareness about fire danger and proactive means of prevention.

- 2.1.1. The Fire Department sponsors a Defensible Space exhibit at the County Fair.**
- 2.1.2. In high fire danger years, especially during the hunting season, develop a fire danger awareness poster directed at sportsmen to be placed in motels, restaurants, sporting goods stores, bars and service stations. Look for business sponsors to help fund and create the poster.**
- 2.1.3. Place fire danger signs in key road locations to alert locals and non-locals of the fire danger. Suggest one sign to be placed in front of the West Glendive Fire Department and one in front of the Richey Fire Department.**
- 2.1.4. Raise the awareness of residents building new homes to consider defensible space, fire resistant building materials and emergency vehicle access to their property.**

Goal 3: Expand firefighting capabilities.

Objective 1: Increase the number of qualified firefighters and raise the number of firefighter with leadership skills in each fire department so that the depth of leadership skills is appropriate for most incidents.

- 3.1.1. Fire department leadership will determine their current and future needs for firefighters and leadership positions.**
- 3.1.2. Recruit new firefighters as needs determine.**
- 3.1.3. Identify areas of specialized training, such as fighting fire in the oil fields.**
- 3.1.4. Look for funding sources for training.**

Objective 2: Continue training opportunities for fire fighters.

3.2.1. Work with existing firefighters to find out what their training needs are and what specific interest that have.

- 3.2.2. Train new leadership to meet the identified needs. Determine best method to get training accomplished and implement. Example to contact the oil companies and have them give the department some training of what extra hazards may exist.**

Objective 3: Ensure financial support for needed training and equipment.

- 3.3.1. Assign an individual or task force to look for funding opportunities for these needs**

Desired Condition/Strategic Plan

The desired condition for Dawson County is to maintain a safety conscious, well-trained firefighting force with adequate personal protective equipment and up-to-date fire apparatus commensurate with the county's needs. The projects to reach this desired condition are listed in Table 5.7.

Table 5.7 Projects

Goal, Objective, Project #	Description	Ranking	Potential Resources To Accomplish
1.1.1	Fire depts. identify properties at risk	M	F.D.'s, DNRC, BLM
1.1.2	Install fire breaks around farmsteads	H	Landowner, FSA and F.D.'s
1.1.3	Develop a demonstration project with CRP lands	H	Landowner, FSA and F.D.'s
1.1.4	FSA share CRP rule changes	M	FSA
1.1.5	Work with BLM/DNRC on fuels reduction projects, including the ongoing project in Cedar Creek	M	F.D.'s, BLM and DNRC
1.1.6	Look for funding opportunities to add wildland firefighting equipment to the City of Glendive Fire Dept.	M	F.D.'s, BLM and DNRC
1.2.1	Utilize "Living with Fire" publication	M	F.D.'s, landowners
1.3.1	Firefighters identify new/improved water sources	M	F.D.'s
1.3.2	Meet with others to identify and establish new water sources	M	F.D.'s, county
1.3.3	Apply for funding of new water sources	M	F.D.'s and DES
1.4.1	ID areas of poor access for fire response	M	F.D.'s
1.4.2	Work with county road crew to improve access	M	F.D.'s and road crew
2.1.1	Fire Dept. sponsors Defensible Space exhibit at county fair	M	F.D.'s
2.1.2	Fire danger poster during hunting season	M	F.D.'s and local businesses
2.1.3	Fire danger signs posted at key locations	M	F.D.
2.1.4	Raise homebuilders awareness on items to consider	M	F.D. and DES
3.1.1	Determine needs for firefighter and leadership skills for now and future	H	F.D.'s
3.1.2	Recruit firefighters as needed	H	F.D.'s
3.1.3	ID areas of specialized training...example oil field fires.	H	F.D.'s and oil companies
3.1.4	Look for funding sources for	M	F.D., BLM, DES

	equipment & training		and DNRC
3.2.1	Training for existing firefighters...needs and interest	M	F.D.'s
3.2.2	Train new leadership to meet identified needs	H	F.D.'s, DNRC, and BLM
3.3.1	Assign responsibility to look for funding sources	M	F.D.'s, DNRC, and BLM

F.D. = Fire Department, FSA=Farm Services Agency, DNRC=Dept. of Natural Resources

The above rankings were made using three criteria, 1) public and firefighter safety, 2) minimize the area burned in the WUI, and 3) raising public awareness for prevention of wildfire

Implementation

Roles and Responsibilities

The goals in this Community Wildfire Protection Plan will be realized through implementation of the projects. The plan contains a variety of types of projects. Due to the variety, many individuals and agencies will play a role in project implementation.

Individual property owners will be responsible for educating themselves and taking appropriate action to create defensible space around their structures, both residential and commercial. Subdivision associations will have the opportunity to work with their local fire departments, state, and federal agencies to select specific fuel treatment alternatives.

Businesses may be involved in sharing expertise, as in the case of the Burlington Northern Santa Fe on hazardous materials or the oil field companies in providing guidance on wildfires around their facilities.

County responsibilities fall in the area of education on existing regulations and investigation of additional regulatory needs. The county may also assist in bringing together parties for cooperative projects.

The Department of Natural Resources and Conservation will continue to provide assistance to local fire departments in the form of grants, technical expertise, and resources.

The Bureau of Land Management (BLM) will both provide technical assistance, project funds, suppression assistance, educational materials, and training. The BLM will schedule and carry out fuel reduction projects in cooperation with neighboring landowners including other agencies and private individuals.

The Farm Services Agency may be asked to assist in educating producers about regulations dealing with methods of fuels reduction on Conservation Reserve Program acres and monitoring the acreage enrolled in the CRP as a way to better understand the fuel hazard.

The Federal Emergency Management Agency (FEMA) may provide grant funds to accomplish projects and may be involved in post-disaster assistance in the event of a catastrophic fire.

Schedule

No firm schedule has been established for accomplishing the listed projects. Accomplishment of projects depends on the availability of resources and funding. Some of the projects can proceed through the efforts of an individual or individual agency or organization.

As required by the National Fire Plan, federal agencies are to align their funding and staff resources with the priorities expressed in this community wildfire protection plan. As a result, accomplishment of many of the projects will depend on the funding and staffing of the BLM. Additionally, the amount of VFA/RFA funds available to the local fire departments will have an effect on the ability of those departments to participate in the planning and execution of projects on the ground.

By jointly identifying the projects and their priorities with city, county, state, and federal partners, it is hoped that project planning and execution will be well coordinated and occur first on the highest priority projects.

Plan Review and Updating

This plan should be reviewed for currency every three to five years, unless there are major changes in the county that would require an earlier update. Items that may initiate a need for a change in the plan would be things like a major wildfire, accidents involving serious injury or loss of life related to wildfire or a change in county leadership. The county commissioners have the responsibility to make that determination.

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Meeting Notes, Sign-in Sheet

Dawson County CWPP Meeting Notes—February 8, 2005

This meeting was held in conjunction with the PDM meeting at the Court House in Glendive from 7 to 9 pm.

Objectives for this meeting

- *Give you an introduction to the project**
- *Explain the purpose of the project and the scheduling to get it accomplished**
- *Enlist your help.....you have the knowledge of the local situation and know best what your county needs**
- *Need your help to identify the wildfire hazards and prioritize those**
- *Have you identify the critical facilities and the vulnerable populations in communities and the county. This was done in the PDM meeting earlier this evening.**
- *Give me a sense of the values at risk (examples: high value forage, critical wildlife habitats, etc)**
- *Have you understand that this is a plan for the county's use and the more involvement I get from you and the county, the more useful it will be and the better your chances are for funding of additional on-the-ground projects.**
- *Establish a Core Group of key individuals to work with me on this project**

Funding

***Funds from the BLM have paid for the contract to develop these plans for your county. The contract products are both a Predisaster Mitigation Plan and a Community Wildfire Protection Plan. Cossitt consulting out of Park City, MT has the contract....we have 5 counties, McCone, Richland, Dawson, Wibaux and Prairie. McCone County has agreed to be the primary contact for all of these counties for the administration of the contract. However, the contents of the plans will come from each of the counties. The PDM plan will take into account all hazards and the CWPP focuses on wildfire as part of that plan. My job is to help these counties develop a CWPP that suits the county's needs.**

A little background on Community Wildfire Protection Plans

- *2003 Healthy Forest Restoration Act (primarily affects BLM and Forest Service)**
- *provides incentives for communities to get involved in fire protection**

need
*several reasons, who knows better than the local folks what they

*once a plan is developed, makes counties and communities more competitive for project \$'s

*allows lots of flexibility---some minor requirements, but depth is really up to you

***Minimum requirements of CWPP are:**

***1 Collaboration....developed by local and state government reps in consultation with federal agencies (in this case the BLM)**

***2 Prioritized Fuel Reduction... identifies and prioritizes areas for hazardous fuel reduction treatments & recommend the types and methods of treatment that will protect one or more at-risk communities and essential infrastructure---usually done by the local fire depts..**

***3 Treatment of Structural Ignitability.... recommends measures that homeowners and communities can take to reduce the ignitability of structures throughout the area of the plan.**

Who must mutually agree to the final contents of the plan?

***Local governments (county and communities)**

***The local fire departments**

***State entity responsible for forest management, DNRC**

The above group will need to consult with local representatives of the BLM...my contact for the BLM for this project is through Dena Lang from Miles City, who I have found to be very helpful and interested in seeing the county get a grassroots-based plan.

What kinds of things can be addressed in the plans?

***wildfire response, hazard mitigation (projects to reduce hazards), community preparedness, structure protection...whatever you think best suits your communities**

Other benefits

***the process can help communities clarify and refine its priorities for protection of life, property, and critical infrastructure (water plant as example) in the Wildland**

Urban Interface (more on that in just a minute) It also allows you to determine the boundaries of what your WUI's are.

Your role

***In a series of meetings (probably just 2), phone calls, etc. you can help me describe the setting of your county, identify existing hazards in terms of wildfire, what capabilities the county has for suppression, what projects you would like to do, what the priorities of those projects are and determine what the substance and detail of your plans will be. You will also have the say so on what the WUI boundaries for your communities will be. There are some guidelines for this, but they do allow quite a lot of flexibility. You can also help me by identify other key people who should be involved in this process.**

Wildland Urban Interface

I want to talk just briefly about this. This is something your group will need to give some thought to in the next few months. The WUI is describes as the zone where structures and other human development meet and intermingle with undeveloped wildland or vegetative fuels. This is where a high percentage of the risk to life and property occurs...where it hits the fan so to speak. It is where the most complex and dangerous situations for firefighters exist.

One of the most important benefits of having a CWPP completed is that it allows you to establish your WUI interface. Without a CWPP the boundaries are limited to within ½ mile of a communities boundary or within 1 and ½ miles when mitigating circumstances exist (example....a long steep slope leading into a community with heavy vegetation) This is a canned definition that may not fit your communities, but with a CWPP you dictate where that boundary is to be drawn. Once the plan is accepted, the WUI boundary is given a higher priority for funding than non-WUI lands. Half of the Healthy Forest Restoration Act funds must be spent in the WUI. I should also mention that fuel treatments can occur along evacuation routes regardless of the distance from the community.

Questions?

- 1) **What are the wildfire hazards in the county and near your communities?**

***CRP lands, usually in late summer....some lands have heavy grass stands near some communities. As an example there are some areas that have as much as 15 miles of continuous fuels across CRP.**

*Makoshika State Park and timber stands south of the park in long stringer of juniper/ponderosa pine mix. In the Park, these fires are difficult to fight because of management policies, such as driving off road. The land in the Pine Unit is mixed BLM and private. It is very broken ground and access by vehicle is sometimes an issue.

*Lightning strikes in the cottonwood bottoms which allow hold over fires that can and do eventually get into the grass and take off later.

*Cattle forage....at certain times of the year some of these grazing areas are ripe for wildfire.

2) What is your first cut on prioritizing them? Same order as listed above.

3) What other values besides people and infrastructure do you want to include in this plan? Oil field facilities. (there are numerous facilities in the county, most have reasonable fuel reduction treatment (some by default) around them. These facilities do represent a large investment by the oil companies and do have a positive bearing on the economy of the county.

4) What mapping resources can you give me to serve as information and to serve as a base map for this project?

BLM maps and should be able to get some maps from the West Glendive Fire Dept.

Establish a Core Group

How will this work and by when? Herzberg hopes to get this information compiled from you and other sources by July 1st, that way avoiding a busy summer season and the possible busy fire season to come.

Who should be on the Core Group to work with the contractor?

Dawson County Core Group

NAME	TITLE
Richie Crisafulli	Asst. Chief, W. Glendive
Tim Mort	Chief, W. Glendive
Ed Crockett	Asst. Chief, Richey
Joe Beery	Capt., Richey

Richie Crisafulli will serve as chairman

See sign-in sheet in Chapter 2 for the above meeting.

Second round of meetings for CWPP with Core Group for Dawson County

Meeting was held at 8 p.m. on March 28, 2005 at the W. Glendive Fire Hall

Attendees sign in sheet is attached.

CRP lands

After introductions we discussed what the possibilities are with Conservation Reserve Program lands are. Nancy Heins of the Farm Services Agency (FSA) of Sidney prepared a handout sheet about CRP. Herzberg gave the group a quick rundown on what Nancy had talked about in Sidney earlier that day. Heins believes that there is a less of problem in the last few years with CRP being a fire danger. The rules of CRP lands have changed since 2002 and those changes allow for some mowing to reduce the fire danger. Firebreaks are also now acceptable. There are two kinds of firebreaks, barren ground or mowing. In order to conduct firebreaks on CRP lands an amendment must be made to the conservation plan through the FSA office.

If there is a going fire it is permissible to blade or disk on CRP ground to stop a fire. This does not require contact with the FSA in an emergency situation.

A portion of the risk assessment (values at risk and the assessment of fire protection preparedness and capability) was handed out for the Core Group to look at for changes or omissions. They were given a month to review and give their comments to the contractor.

Fire Frequency/Fuels hazards

The group revisited what fuel types they typically fight fire in and they validated that the information gathered on the first meeting was sufficient. The Core Group talked about fire frequency and if there were any places in the county that seem to show a pattern of lightning starts. No readily identifiable pattern exists.

For future feedback Herzberg asked for several items:

From the portion of the Risk Assessment Herzberg handed out, the contractor asked them to validate the preparedness and firefighter capability.

The group had a discussion about what should be on the base map and the items asked for where: 1. critical infrastructure/water sources/etc, 2.

Wildland Urban Interface boundaries, and 3. a wish list of attributes they would like to see on a base map.

Draft Goals for the CWPP

The group reviewed the draft goals and the core group agreed to the ones as presented.

Ignition Sources

The Core Group went over the draft list of ignition sources and the group added 1. haying/combining, 2. fireworks and 3. oil field activity.

Project Proposals

The group had a discussion about hazardous fuels reduction and educational component is desired (both for firefighters and the public). The group talked about that this effort was not for acquisition of equipment or gear. Herzberg encouraged them to include projects on state and BLM lands. Signing is also a possibility for a proposal, such a fire danger rating signs in key locations. Herzberg told them that the BLM is interested in a wide range of projects and if they had any questions about whether or not a project would be considered to call Dena Lang 233-2907 or Rand Herzberg at 446-2121.

Herzberg asked for a list of preliminary projects by April 30th.

The Core Group talked about what was next in the project. Herzberg told them that his job was to collect their information to create a final draft of the risk assessment, which they will have a chance to review. After receiving their comments back, Herzberg will finalize the risk assessment and then begin on the mitigation plan.

Rand Herzberg

Attendance Sheet

Activity CWPP Core Group Meeting
 Location Glendive Date(s) March 29, 2005
 Duration 1.25 hrs.

Name & Title	Affiliation	E-Mail Address & Phone#	Agency Use Only		
			H	M	T
Name: <u>Richie Crisafulli</u> Title: <u>Asst. Chief</u>	<u>West Glendive Fire Dept</u>	<u>richie.c@crisafulli.com</u> <u>(406) 377-9630</u>			
Name: <u>Helzer Conradson</u> Title: <u>DES Coordinator</u>	<u>Dawson Co DES</u>	<u>dawcodes@midrivers.com</u> <u>406-377-2566</u>			
Name: <u>Dena Dang</u> Title: <u>Fire Mitigation/Education</u>	<u>BLM - Miles City Fire</u>	<u>dslang@mt.blm.gov</u> <u>406-233-2907</u>			
Name: <u>Tim Mont</u> Title: <u>Chief Firewarden</u>	<u>westglendive Dawson Rural</u>	<u>montdist@men.west</u> <u>406-989-1015 406-365-2177</u>			
Name: <u>Cliff Conradson</u> Title: <u>Depty DES Coordinator</u>	<u>DES</u>	<u>mapro@midrivers.com</u> <u>377-8437</u>			
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Rev. 4/23/03

Chapter VI: Plan Maintenance and Coordination

Responsible Parties

The Dawson County Commissioners will be responsible for ensuring that the CWPP/PDM Plan is kept current and also for evaluating its effectiveness. With the adoption of this plan, the commissioners designate the Dawson County Disaster and Emergency Services Coordinator and the Chair of the Local Emergency Planning Committee (LEPC) as the co-leads in accomplishing this ongoing responsibility on their behalf.

Review Triggers

Any of the following three situations could trigger review of the plan's effectiveness or currency and update of the CWPP/PDM Plan.

1. The occurrence of a major natural disaster either in the county or nearby.
2. The passage of five years.
3. A change in state or federal regulations with which the county must comply.

Criteria for Evaluating the Plan

When review of the CWPP/PDM plan is triggered by one of the three situations listed above, the plan will also be evaluated for effectiveness and comprehensiveness. The criteria against which the plan will be evaluated will include, but not be limited to;

- Whether any potential natural hazards have developed that were not addressed in the plan,
- Whether any disasters have occurred which were not addressed in the plan,
- Whether any unanticipated development has occurred that could be vulnerable to natural disasters, and
- Whether any additional project ideas have been developed.

Procedures

Should a major natural disaster occur in Dawson County the LEPC shall meet following the disaster to review the incident. Upon review, any changes needed to the CWPP/PDM Plan will be recommended to the County Commission and made by the County Disaster and Emergency Services Coordinator following their concurrence.

In the absence of a major natural disaster, each January starting in 2007, the LEPC will meet to review the PDM Plan and recommend any needed changes. The LEPC meeting will be noticed in the Ranger Review and the public and

individuals who served on the Steering Committee for development of the original plan will be encouraged to attend. In the interim, the County Disaster and Emergency Services Coordinator will maintain a file into which comments or input on changes to the plan can be kept. The comments in this file will be provided at the LEPC/public meeting to review the plan.

Finally, should state or federal regulations with which the County must comply be significantly changed, the County Disaster and Emergency Services Coordinator will notice and hold an LEPC meeting. At this meeting he/she will inform the LEPC of the new requirements and together with the LEPC, determine whether changes to the CWPP/PDM Plan are warranted.

Every five years, beginning in 2010, the CWPP/PDM Plan will be submitted to Montana Disaster Emergency Services and subsequently to the Federal Emergency Management Agency (FEMA) for approval.

Incorporation into other Plans

Dawson County and the city of Glendive have jointly initiated the preparation of a Growth Policy. There is no target completion date for the Growth Policy. City and county staff have been made aware of the CWPP/Pre-Disaster Mitigation Plan by the County Disaster and Emergency Services Coordinator and through the planning process. The projects in the CWPP/PDM Plan can be incorporated into the Growth Policy as appropriate.

The County Disaster and Emergency Services Coordinator was extensively involved in the preparation of the CWPP/PDM Plan. The Coordinator will direct consideration of the CWPP/PDM plan during the preparation of the upcoming Interoperable Communications Strategy.

The town of Richey does not currently have its own land use plan or growth policy. No growth policy is scheduled to be prepared at this time by Richey.

