

Oglala Sioux Tribe - Shannon County Multi-Hazard Mitigation Plan

July 2014



Acknowledgements

The OST/Shannon County All-Hazard Mitigation Plan would not have been completed without the many people that contributed to the plan development. Following is a list of the contributors to the Plan development:

- Frank Maynard, Emergency Manager, Shannon County
- Delbert Brewer, Emergency Management Consultant, OST
- Nicole Prince, SD State Hazard Mitigation Officer
- Jim Poppen, SD State Hazard Mitigation Specialist
- Margaret Doherty, FEMA Mitigation Specialist, Region VIII
- Jeff Sisco, Bennett County Emergency Manager, Martin, SD
- Matilda Montileaux, OLC Graduate Student, Kyle SD
- Carol Johnson, OLC Graduate Student, Porcupine, SD
- Olivia Sierra, OLC Graduate Student, Oglala, SD
- Diana Counoyer OLC Graduate Studies,
- OST Emergency Management Committee
- OST President, Bryan Brewer
- OST Executive Director, Richard Zephier
- OST Executive Director's Staff
- Jackie Pappas and Kathryn Brewer, Typists
- Troy Ferguson, OST GIS Specialist
- Stacey Martin, Shannon County GIS
- Amy Jumping Eagle, Clerical Support
- Alessandra Jerolleman, JEO Consulting Group Inc., Lincoln, NE
- Jeffrey Hanson, JEO Consulting Group Inc., Lincoln, NE

Hazard Mitigation Planning Team

Name	Title
Bryan Brewer	OST President
Delbert Brewer	OST Emergency Management Consultant
Monica Terkildsen	OST Emergency Manager
Thomas Poor Bear	OST Vice President
Rhonda Two Eagle	OST Secretary
Mason Big Crow	OST Treasurer
David Pourier	OST Fifth Members Office
Ruth Brown	OST Tribal Council
Jim Meeks	OST Tribal Council
Charles Cummings	OST Tribal Council
Craig Dillon	OST Tribal Council
Stanley Little Whiteman	OST Tribal Council
Bernie Shot with Arrow	OST Tribal Council
Barbara Dull Knife	OST Tribal Council
Paul Little	OST Tribal Council
Lydia Bear Killer	OST Tribal Council
James Cross	OST Tribal Council
Larry Eagle Bull	OST Tribal Council
Irving Provost	OST Tribal Council
Robin Tapio	OST Tribal Council
Danielle LeBeaux	OST Tribal Council
Troy Weston	OST Tribal Council
Dan Rodriquez	OST Tribal Council
Jackie Siers	OST Tribal Council
Garfield Steele	OST Tribal Council
Kevin Yellow Bird Steele	OST Tribal Council
Robert Eagle Elk	OST District Coordinator
Carol Crazy Thunder	Pine Ridge District President
Floyd Brings Plenty	Oglala District President
Patricia Catches the Enemy	Wakpamni District President
Donna Jumping Eagle	Wounded Knee District President
Margie Janis	Medicine Root District President
Virgil Bush	Porcupine District President
Hermis Bettelyoun	LaCreek District President
Marvis Bad Cob	Eagle Nest District President
Phillip Water	Pass Creek District President
Cleve Her Many Horse	BIA Superintendent
Daigre Deauville	BIA Fire Manager

Ron Duke	OST Chief of Police
Paul Iron Cloud	OST Housing Director
Charmaine Weston	Pine Ridge School Superintendent
Ted Hamilton	Red Cloud School Superintendent
Tom Short Bull	OLC -- Piya Wiconi President
Allen Davis	IHS Director
Wendell Yellow Bull	OST Ambulance Service
Loris Welch	Prairie Wind Casino Manager
Frank Means	OST Rural Water Director-Construction
Jean Whirlwind Horse	OST Department of Corrections Director
Kendra Lone Elk	OST Health Administrator
Andre Janis	OST Home Improvement Director
Reno Willard	OST Water Resources Director
Sonia Weston	OST Water Maintenance Director
David Kelly	OST Transportation Director
Harold Salway	OST Parks and Recreation Director
Dennis Yellow Thunder	OST Natural Resources Director
Lloydell Mesteth	OST Environmental Director
Bob Pille	OST Solid Waste Director
Dayna Brave Eagle	OST Education Director
Frank Maynard	Fall River / Shannon EM
Wendell Yellow Bull	Shannon County Commissioner
Lyla Hutchison	Shannon County Commissioner

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Executive Summary

The Oglala Sioux Tribe (OST) and Shannon County have developed this comprehensive risk-based, Multi-Hazard Mitigation Plan. The planning area is at risk from communicable disease, dam failure, drought, hazardous materials incidents, flooding, shallow landslide, urban fires, shortage of critical materials, summer storms, tornadoes, transportation accidents, winter storms, and wildfires. In addition to these hazards, Shannon County will also be considering the impacts of terrorism, nuclear accidents, and civil disorder.

Of these hazards, winter storms, tornadoes and summer storms are identified as being the highest priority hazards.

The plan forms a solid foundation for decision-making and participation by a wide range of tribal members, county personnel, and other affected parties who play a role in setting mitigation goals. It serves as an update to the 2003 Fall River and Shannon County Multi-Hazard Pre-Disaster Mitigation Plan. The ultimate goal of the OST and Shannon County is to identify and implement mitigation actions which will save lives and protect property.

Common goals include:

Protecting our citizens; lessening the effects of hazards on existing and future structures; reducing losses to critical facilities, utilizes, and infrastructure; preserving our natural environment; supporting and assisting community mitigation capabilities; and, improving emergency management capabilities .

The plan is divided into six main sections:

- ✓ Plan Development
- ✓ Planning Process
- ✓ Community Profiles
- ✓ Hazard Profiles, Risk Assessment and Vulnerability Analysis
- ✓ Mitigation Strategy and Capability Assessment
- ✓ Plan Maintenance, Plan Review, and Adoption

The following hazard mitigation actions are identified as high priorities for the planning area:

1. Anchor mobile homes
2. Rebuild unsafe structures
3. Update Emergency Operations Plan
4. Establish building codes
5. Provide backup generators for critical facilities
6. Education on mitigation measures
7. Provide emergency supply kits
8. Establish family shelters
9. Establish school shelters
10. Improve warning systems

Section 1: Plan Development

Introduction

The Oglala Sioux Tribe (OST) and Shannon County are susceptible to both natural and man-made hazards. The planning area is at risk from communicable disease, dam failure, drought, hazardous materials incidents, flooding, shallow landslide, urban fires, shortage of critical materials, summer storms, tornadoes, transportation accidents, winter storms, and wildfires. In addition to these hazards, Shannon County will also be considering the impacts of terrorism, nuclear accidents, and civil disorder. These hazards occur with varying degrees of frequency -- some occur annually, while others haven't impacted the planning area for many years. What each has in common is the potential to cause harm to citizens, damage to property, and detriment to the natural environment.

Some events have had minor impacts; others warranted a Presidential Disaster Declaration. The State has received 44 Presidential Declarations since 1954, of which 10 include Shannon County and/or the OST. All of these have occurred since 1976, with 9 occurring since 1997. As such, the Hazard Mitigation Planning Team (HMPT) has decided to collectively assess risks, determine vulnerability, and develop a strategy to lessen or eliminate the effects of hazards on the community, property, and natural environment. Additionally, the OST and Shannon County received two Presidential Declarations in late 2013, during the planning process.

We believe, through this careful and deliberately collaborative effort, we have developed a comprehensive blueprint to prevent damages to our built and natural environment; protect property and natural resources; and educate our citizens about the benefits of implementing sound hazard mitigation practices.

Purpose

The purpose of the Oglala Sioux Tribe – Shannon County Multi-Hazard Mitigation Plan (OST-Shannon County MHMP) is two-fold: Promote actions which eliminate or minimize the effects of hazards on the OST and Shannon County and meet the mitigation planning requirements outlined in 44 CFR Part 201.6 and 201.7. As a Federal Emergency Management Agency (FEMA) approved Local/Tribal Multi-Jurisdictional Plan, the OST-Shannon County MHMP will enable the Tribe and/or County to be a grantee or sub-grantee for certain FEMA grant programs.

The OST-Shannon County MHMP serves as an update to the 2003 Fall River and Shannon County Multi-Hazard Pre-Disaster Mitigation Plan.

Our common goals include:

Protecting our citizens; lessening the effects of hazards on existing and future structures; reducing losses to critical facilities, utilizes, and infrastructure; preserving our natural environment; supporting and assisting community mitigation capabilities; and, improving emergency management capabilities .

Scope

The geographic scope of this plan is reservation-wide and countywide, with the actual land fractionated between Tribal and non-Tribal lands. Land is owned by the Oglala Sioux Tribe, by private owners and by

the U.S. Government. The plan addresses both manmade and natural hazards and is divided into six main sections:

- ✓ Plan Development
- ✓ Planning Process
- ✓ Community Profiles
- ✓ Hazard Profiles, Risk Assessment and Vulnerability Analysis
- ✓ Mitigation Strategy and Capability Assessment
- ✓ Plan Maintenance, Plan Review, and Adoption

Authority

Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act 42 U.S.C. 5165, as amended by the Disaster Mitigation Act of 2000 (P.L. 106-390), provides for the Oglala Sioux Tribe and Shannon County to undertake a risk-based approach to reducing risks to natural hazards through mitigation planning. The OST-Shannon County MHMP is a collaborative effort between Shannon County, including the town of Batesland and the Oglala Sioux Tribe, including the districts of Pine Ridge, White Clay, Wakpamni, Porcupine, Wounded Knee, Medicine Root, LaCreek, Pass Creek and Eagle Nest. As such, the Oglala Sioux Tribe's Tribal Council and the governing bodies of Shannon County and Batesland have the authority to implement this plan and will adopt the OST-Shannon County MHMP once the plan is determined to be approvable pending adoption by the South Dakota Office of Emergency Services (SDOES) and FEMA, Region VIII. Adoption documentation is included.

The Disaster Mitigation Act of 2000 requires local governments and other groups that could receive FEMA aid to have a pre-disaster mitigation plan in place to qualify for future mitigation project funding.

The OST-Shannon County MHMP was prepared by the participants from the HMPT. The above said plan will serve as a tool for use by the County and Tribe in aiding efforts to identify and mitigate against the inevitable future impacts of both natural and / or man-made hazard events.

Objectives

The OST in collaboration with Shannon County has developed a comprehensive risk-based, Multi-Hazard Mitigation Plan. The plan will form a solid foundation for decision-making and participation by a wide range of tribal members, county personnel, and other affected parties who play a role in setting mitigation goals. The ultimate goal of the OST and Shannon County is to identify and implement mitigation actions that will save lives and protect property.

Section 2: Planning Process

Overview

FEMA Requirements 201.7 (b), 201.7 (c) (i) and (ii) specifies that an effective planning process is essential to the development of an effective mitigation plan. The mitigation planning process should include coordination with other tribal agencies, appropriate Federal agencies, adjacent jurisdictions, interested groups, and be integrated to the extent possible with other ongoing tribal planning efforts as well as other FEMA mitigation programs and initiatives.

The planning process began on July 31, 2013, with a meeting between representatives from the Oglala Sioux Tribe, Shannon County EM, SDOES, FEMA in Rapid City, SD. It was agreed upon in this meeting that the OST and Shannon County would develop a multi-jurisdictional Multi-Hazard Mitigation Plan. Following this meeting, the Executive Director of the OST sent a memorandum requesting the approval of the OST Tribal Council to move forward and begin plan development. This memorandum can be found in *Appendix A: Meeting Documentation*.

The group discussed the planning process including potential plan participants, a project timeline, and projected staff and funding needs. Delbert Brewer, OST Emergency Management Consultant, was identified as the OST Project Manager.

On August 14, 2013, JEO Consulting Group, Inc., Lincoln, Nebraska, was selected as the consultant to support the development of the mitigation plan. Alessandra Jerolleman was identified as the Project Manager representing the contractor.

On September 25, 2013, the OST-Shannon County MHMP kick-off meeting was held at the OST Prairie Winds Casino. The invitation letters for this meeting can be found in *Appendix A: Meeting Documentation*. The purpose of the meeting was to discuss the hazard mitigation planning process and begin working together toward the development of the hazard mitigation plan. Attendance at the kick-off meeting included:

Table 1: Kick-Off Meeting Attendance

Name	Title
Jeff Henson	Planner (JEO Consulting Group, Inc.)
Wendell Yellow Bull	SCO - OST
Brent Kolstad	SDOEM
Jeff Cisco	Bennett County EMA
Martin Christopherson	SDOEM
Arlene Catches the Enemy	TERC Chairperson - OST
Lloydell "Suzy" Mesteth	EPP Director - OST
Delbert Brewer	OST - EM Consultant
Frank Maynard	Fall River / Shannon EM
Nicole Prince	State SD - SHMO
Alessandra Jerolleman	JEO - Sr. Planner

Tim Jacobs	Indian Health Service - Safety HIS Hospital
Richard L. Zephier	Executive Director - OST
Art Zimiga	OST ED&B Specialist
Kevin Williams	HMA Specialist
Jim Poppen	Mitigation Specialist - SDOEM



Shortly after the Mitigation Plan Kick-off Meeting, the OST decided to utilize graduate students from the Oglala Lakota College (OLC) to assist with the hazard risk analysis and collection of hazard identification within the nine districts on the Pine Ridge Reservation. On October 9, 2013, the OLC graduate program identified three graduate college students to assist with development of the mitigation plan. The three students are: Matilda Montileaux, Coral Johnson and Olivia Sierra. The students received a mitigation plan orientation by Delbert Brewer and Alessandra Jerolleman. The district stakeholder meetings began on November 20, 2013, at Kyle in the Medicine Root district. The meeting notice flyer for this event can be found in *Appendix A: Meeting Documentation*.

Frank Maynard presented information on the OST-Shannon County MHMP to the Shannon County Commission at their meeting in November of 2013. The agenda for this meeting can be found in *Appendix A: Meeting Documentation*.

Public Involvement and Neighboring Jurisdictions

A press release was issued on October 31, 2013, by the OST and Shannon County which identified the work to create a Multi-Jurisdictional Hazard Mitigation Plan. The document was printed in the Native Sun Magazine, and can be found in *Appendix A: Meeting Documentation*. Copies of the press release were also placed at various local spots within Shannon County.

Residents of both OST and Shannon County were given the opportunity to participate through the jurisdictional meetings which are described further below.

Notices were sent to the following adjacent jurisdictions, informing them of the planning process:

Table 2: Adjacent Jurisdictions

Rosebud Sioux Tribe
Indian Health Services (IHS) Administrator
Bureau of Indian Affairs (BIA) Agency Representative
BIA School Superintendent
Oglala Lakota Council (OLC) President
Red Cloud Indian School
Prairie Winds Casino
Oglala Sioux Tribe Rural Water Supply System
Pennington County Commission
Custer County Commission
Fall River Commission
Bennett County Commission
Jackson County Commission
Dawes County Commission
Sheridan County Commission
Badlands National Park

Hazard Mitigation Planning Team Meetings

Following the kick-off meeting, the OST President formally appointed members to serve on the HMPT on behalf of OST. Representatives from the Oglala Sioux Tribal Council, OST Program Directors, OST District Presidents, the BIA Superintendent, IHS Director, BIA Education Superintendent, Red Cloud School Superintendent, and other entities were invited to serve on the planning team. Shannon County appointed three members to the HMPT, including two Shannon County Commissioners, and Frank Maynard, EM.

Table 3: HMPT Members

Name	Title
Bryan Brewer	OST President
Delbert Brewer	OST Emergency Management Consultant
Monica Terkildsen	OST Emergency Manager
Thomas Poor Bear	OST Vice President
Rhonda Two Eagle	OST Secretary
Mason Big Crow	OST Treasurer
David Pourier	OST Fifth Members Office
Ruth Brown	OST Tribal Council
Jim Meeks	OST Tribal Council
Charles Cummings	OST Tribal Council
Craig Dillon	OST Tribal Council
Stanley Little Whiteman	OST Tribal Council
Bernie Shot with Arrow	OST Tribal Council
Barbara Dull Knife	OST Tribal Council
Paul Little	OST Tribal Council

Lydia Bear Killer	OST Tribal Council
James Cross	OST Tribal Council
Larry Eagle Bull	OST Tribal Council
Irving Provost	OST Tribal Council
Robin Tapio	OST Tribal Council
Danielle LeBeaux	OST Tribal Council
Troy Weston	OST Tribal Council
Dan Rodriquez	OST Tribal Council
Jackie Siers	OST Tribal Council
Garfield Steele	OST Tribal Council
Kevin Yellow Bird Steele	OST Tribal Council
Robert Eagle Elk	OST District Coordinator
Carol Crazy Thunder	Pine Ridge District President
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Patricia Catches the Enemy	Wakpamni District President
Donna Jumping Eagle	Wounded Knee District President
Margie Janis	Medicine Root District President
Virgil Bush	Porcupine District President
Hermis Bettelyoun	LaCreek District President
Marvis Bad Cob	Eagle Nest District President
Phillip Water	Pass Creek District President
Cleve Her Many Horse	BIA Superintendent
Daigre Deauville	BIA Fire Manager
Ron Duke	OST Chief of Police
Paul Iron Cloud	OST Housing Director
Charmaine Weston	Pine Ridge School Superintendent
Ted Hamilton	Red Cloud School Superintendent
Tom Shortbull	OLC -- Piya Wiconi President
Allen Davis	IHS Director
Wendell Yellow Bull	OST Ambulance Service
Loris Welch	Prairie Wind Casino Manager
Frank Means	OST Rural Water Director
Jean Whirlwind Horse	OST Department of Corrections Director
Kendra Lone Elk	OST Health Administrator
Andre Janis	OST Home Improvement Director
Richard Iron Cloud	OST Water Resources Director
Willard Clifford	OST Water Maintenance Director
David Kelly	OST Transportation Director
Harold Salway	OST Parks and Recreation Director
Richard Iron Cloud	OST Natural Resources Director
Lloydell Mesteth	OST Environmental Director

Bob Pille	OST Solid Waste Director
Dayna Brave Eagle	OST Education Director
Frank Maynard	Fall River / Shannon EM
Wendell Yellow Bull	Shannon County Commissioner
Lyla Hutchison	Shannon County Commissioner

The first HMPT meeting was held on November 18, 2013, at the OST Prairie Winds Casino. This meeting focused on the identification of hazards with some discussion of the risk assessment. The invitation, agenda, and sign in sheet, for this meeting can be found in *Appendix A: Meeting Documentation*.

The second HMPT meeting was held on May 20th, 2014, at the OST Prairie Winds Casino. This meeting focused on the identification and prioritization of hazard mitigation actions, as well as on the finalization of goals and objectives. A list of the OST Mitigation Planning Committee members that received this letter, along with a copy of the invitation letter, agenda, and other handouts, can be found in *Appendix A: Meeting Documentation*. Completed worksheets can be found in *Appendix B: Additional Documentation*.

The HMPT was given the opportunity to provide feedback and commentary on a draft in early June 2014. This notice can be found in *Appendix A: Meeting Documentation*.

District and Jurisdictional Meetings

The HMPT decided to treat the OST voting districts as jurisdictions for the purposes of this planning process. These jurisdictional districts have their own government structures and are managed by a board of directors elected by membership in each district. Each district has a Community Action Program (CAP) office that serves as the hub for most community activities including: Administrative, food and supply distribution, social and business meetings and meals for the elderly. Most of the districts have more than one community with the Pine Ridge community serving the largest population. In addition to the nine OST districts, a meeting was held in the Shannon County jurisdiction of Batesland. All hazard risk assessments were conducted individually for all nine districts and Batesland.

Community stakeholder meetings were held in the nine districts on the Pine Ridge Reservation. Some of the districts had more than one community involved. Hazard surveys were collected from the stakeholders in these meetings. Note: These completed surveys are not included in appendices.

The community meetings concluded on March 5, 2013, in the Pine Ridge Village. Critical facilities were identified in the communities which will form the basis for identifying the population vulnerabilities.

Table 4: OST District Meeting Schedule

DATE	TIME	LOCATION	DISTRICT	COORDINATOR/STATUS
28-Jan-14	10.00 a.m.	Allen	Pass Creek	Matilda Montileaux
14-Feb-14	10:00 a.m.	Wanblee	Eagle Nest	Carol Johnson
9-Jan-14	10:00 a.m.	Martin CAP Office	La Creek	Matilda Montileaux
3-March-14	10:00 a.m.	Manderson	Wounded Knee	Carol Johnson

15-Jan-14	10:00 a.m.	Oglala	White Clay	Olivia Sierra
18-Feb-14	10:00 a.m.	Porcupine	Porcupine	Carol Johnson
5-Mar-14	10:00 a.m.	Pine Ridge	Pine Ridge	Team – Del Brewer
20-Nov-13	10:00 a.m.	Kyle	Medicine Root	Matilda Montileaux
26-Feb-14	10:00 a.m.	Pine Ridge	Wakpamni	Olivia Sierra

The meeting in Batesland was held on Tuesday, May 27th, at the Batesland Fire Department. It followed a similar to format to that of the OST district meetings.

A standard format, developed by OST and Shannon County was utilized for the series of meetings. The meetings included a wide cross section of community residents (stakeholders) and focused primarily on the identification of the hazards of concern within these jurisdictions. This was accomplished through the use of a survey instrument, the discussions at the actual meetings, and through data gathering by the OLC students.

The HMPT collected 113 stakeholder surveys from the 9 districts, as well as one for Batesland reflecting the input of 20 meeting participants. Additionally, a survey was completed for Shannon County as a whole. These surveys were completed by the stakeholders in the nine district meetings. Following is a table showing the number of surveys collected from each district:

Table 5: Number of Surveys Collected by District.

District	# of Surveys
Pine Ridge	10
Medicine Root	17
Wounded Knee	14
Wakpamni	11
White Clay	9
Eagle Nest	22
Porcupine	12
Lacreek	13
Pass Creek	5

Pine Ridge, Medicine Root, Wounded Knee, and LaCreek sign-in sheets are included in the Appendix.

The format that was followed to survey the stakeholders in the districts is as follows:

1. A formal announcement was distributed within the district through the posting of notices at CAP offices. District meetings were also announced on KILI radio.
2. The CAP offices were telephoned and asked to notify the community of the upcoming meeting.
3. A short presentation was provided to the stakeholders regarding the planning process and the purpose of the survey. The survey was described and information was then collected on hazards within the community.
4. Data was collected on critical facilities within the district and/or jurisdiction.
5. The data provided by the surveys, supplemented by the knowledge of the HMPT was utilized to determine primary vulnerabilities within the community.

Upon completion of the surveys, the analysis was coordinated for each community surveyed. The identified hazards were consolidated by district and the major hazard risks were identified. From this collection of data, community hazards and vulnerabilities were identified.

The survey instrument can found in *Appendix B: Additional Documentation* and the results can be found in Section 4.

General Plans, Documents, and Information

General plans, documents, and information used throughout the development and update of the plan are listed in the table below:

Table 6: References

GUIDANCE	SOURCE
Disaster Mitigation Act of 2000 (DMA)	http://www.fema.gov/media-library/assets/documents/4596?id=1935
Interim Final Rule (IFR)	http://www.fema.gov
Local Multi-Hazard Mitigation Planning Guidance (Blue Book)	http://www.fema.gov
Federal Emergency Management Agency (FEMA) Tribal Multi-Hazard Mitigation Planning Guidance (March 2010)	
Local Mitigation Planning Handbook	http://www.fema.gov/media-library-data/20130726-1910-25045-9160/fema_local_mitigation_handbook.pdf
Hazard Mitigation Assistance Unified Guidance	http://www.fema.gov/hazard-mitigation-assistance
What is a Benefit: Guidance on Benefit-Cost Analysis on Hazard Mitigation Projects	http://www.fema.gov/benefit-cost-analysis
The Census of Agriculture	http://www.agcensus.usda.gov/
National Flood Insurance Program Community Status Book	http://www.fema.gov/cis/NE.html
PLANS / STUDIES	SOURCE
State of South Dakota Hazard Mitigation Plan, November 2013	
Pine Ridge Indian Reservation, Community Mini-Plan, SDSU, 2003	
Spirit Lake Nation Tribal Mitigation Plan, 2011	
Standing Rock Sioux Tribe and Sioux County Multi-Hazard Mitigation Plan, 2011	
Shannon County Multi-Hazard Mitigation Plan, January 2014	
Bennett County Hazard Mitigation Plan, 2004/Updates	
Jackson County Hazard Mitigation Plan, Update 2013	
Lawrence County Pre-Disaster Mitigation Plan, 2012	
Shannon County Comprehensive Plan 2000-2020	
The OST Emergency Operations Plan	
The Oglala Lakota College Emergency Operations Plan, 2012	
The Bureau of Indian Affairs Emergency Operations Plan	
The OST Rural Water Emergency Operations Plan	

The OST Water and Sewer Emergency Operations Plan

DATA SOURCES / TECHNICAL RESOURCES	SOURCE
Federal Emergency Management Agency	http://www.fema.gov
United States Department of Commerce	http://www.commerce.gov/
National Oceanic Atmospheric Administration	http://www.noaa.gov/
National Environmental Satellite, Data, and Information Service	http://www.nesdis.noaa.gov/
National Climatic Data Center	http://www.ncdc.noaa.gov
Storm Prediction Center Statistics	http://www.spc.noaa.gov
United States Geological Survey	http://www.usgs.gov/
United States Department of Agriculture	http://www.usda.gov
United States Department of Agriculture – Risk Assessment Agency	http://www.rma.usda.gov
National Agricultural Statistics Service	http://www.nass.usda.gov/
High Plains Regional Climate Center	http://www.hprcc.unl.edu
United States Census Bureau	http://www.census.gov
National Flood Insurance Program	http://www.fema.gov http://dnrdata.dnr.ne.gov
National Flood Insurance Program Bureau and Statistical Agent	http://www.fema.gov/national-flood-insurance-program
FEMA Map Service Center	http://www.msc.fema.gov
National Drought Mitigation Center – Drought Monitor	http://drought.unl.edu/dm/monitor.html
National Drought Mitigation Center – Drought Impact Reporter	http://www.droughtreporter.unl.edu
National Historic Registry	http://www.nps.gov/nr
United States Small Business Administration	http://www.sba.gov
Bureau of Indian Affairs, Great Plains Region Website	http://www.bia.gov/WhoWeAre/RegionalOffices/GreatPlains/index.htm
Bureau of Indian Affairs, Pine Ridge Agency Website	http://www.bia.gov/WhoWeAre/RegionalOffices/GreatPlains/WeAre/Agencies/PineRidge/index.htm
Oglala Lakota College Website	http://www.olc.edu/
Oglala Sioux Nation Website	http://oglalalakotanation.org/oln/Home.html
State of South Dakota Department of Emergency Management Website	http://dps.sd.gov/emergency_services/emergency_management/default.aspx

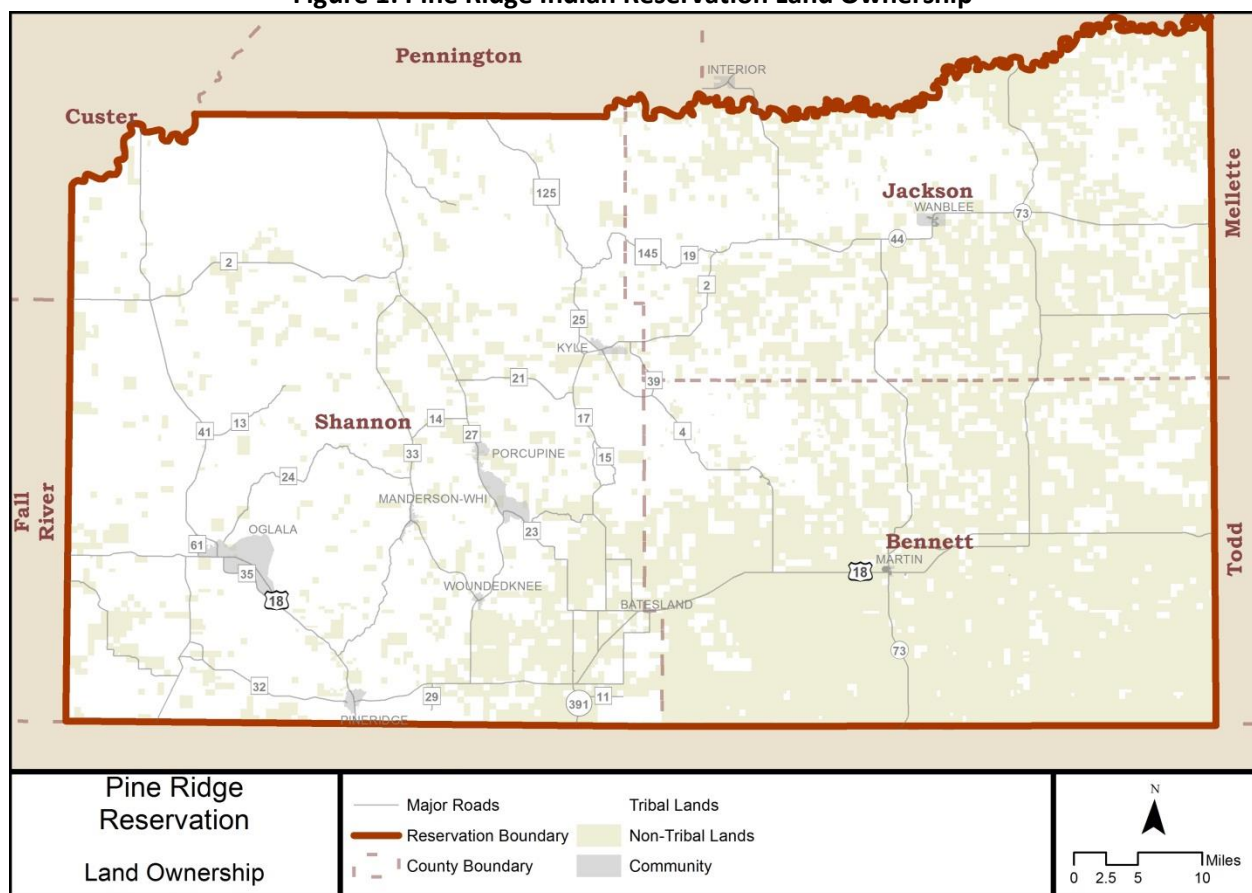
Section 3: Community Profiles

Location

Pine Ridge Reservation

The Pine Ridge Indian Reservation is home to the Oglala Sioux Tribe. The people and the lands of the Oglala Lakota Nation are located in southwestern South Dakota. The Pine Ridge Reservation occupies the entirety of Shannon County, the southern half of Jackson County and Bennett County in southwestern South Dakota. The total land area of the Reservation is 2.1 million acres with 1.7 million acres of U.S. land in trust to Tribal or individuals (BIA Pine Ridge Agency).

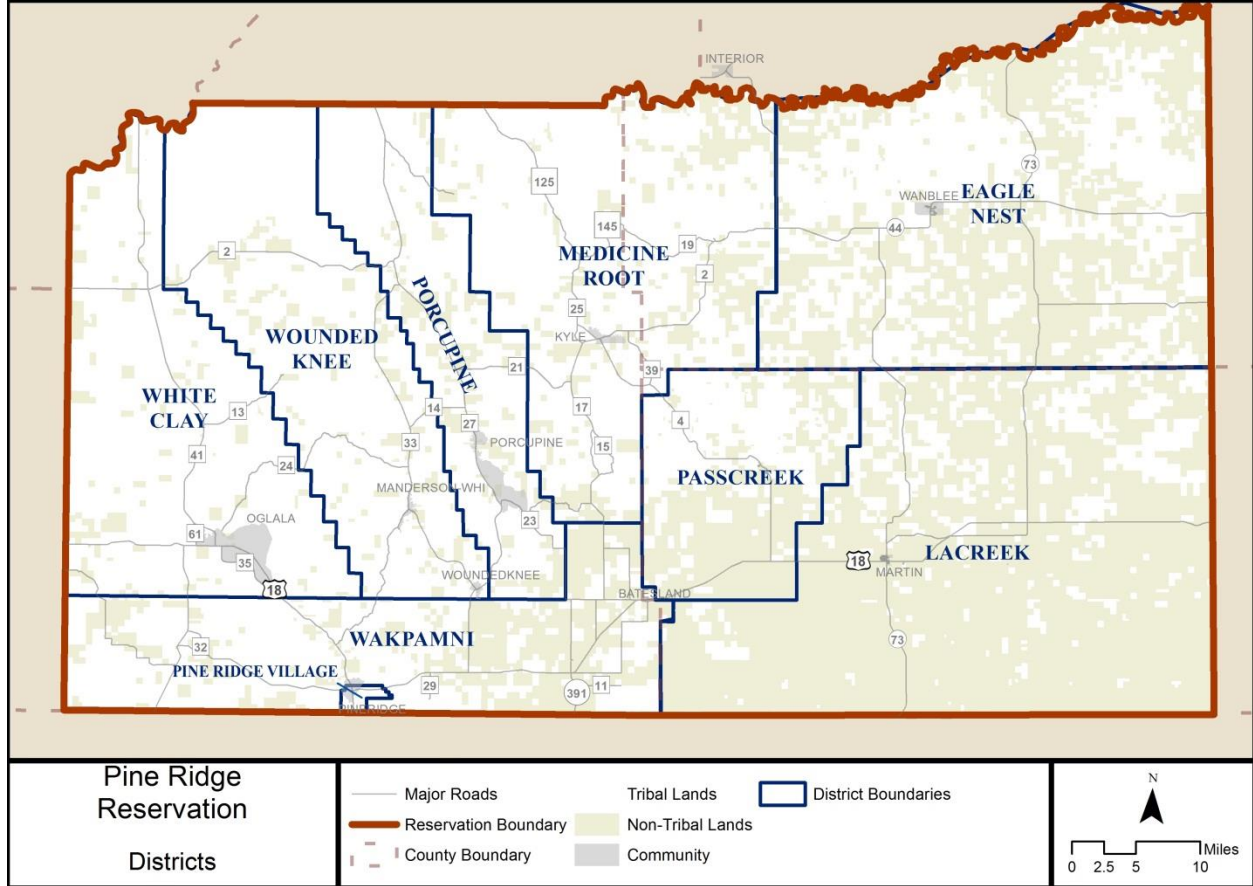
Figure 1: Pine Ridge Indian Reservation Land Ownership



Politically, the Reservation is divided into nine Districts. They include:

- Eagle Nest
- La Creek
- Medicine Root
- Pass Creek
- Pine Ridge
- Porcupine
- Wakpamni
- White Clay
- Wounded Knee

Figure 2: Pine Ridge Indian Reservation Districts



The districts were established as voting districts and were determined by population within the districts.

Major communities include:

Table 7: Major Communities

Pine Ridge	Shannon County
Kyle	Shannon County
Wanblee	Jackson County
Martin	Bennett County
Allen	Bennett County
Porcupine	Shannon County
Wounded Knee	Shannon County
Oglala	Shannon County
Red Shirt	Shannon County

Shannon County

Shannon County lies within a 5,275 square mile portion of southwest South Dakota. The concentration of persons resides in the southern portion of the county, near and in the City of Pine Ridge. For the purposes of this plan, the portion of Shannon County described is the non-tribal ground, largely located

in the southeast corner of Shannon County. There are private parcels of land scattered throughout the county also. The total population of Shannon County as of the year 2010 was 13,296 inhabitants. The area covered under this plan has 7,778 registered voters, primarily located in and around the town of Batesland. It is not possible to identify the breakdown between tribal and non-tribal voters. The Batesland population in 2010 was 108 with 29 housing units and a total of 34 structures.

Shannon County is home to several creeks and to the White River. The Cheyenne River serves as the boundary between Shannon County and Custer County. White River runs southwest to northeast through the county. Porcupine, Medicine Root, Three Mile, American Horse and Wounded Knee creeks are some of the more prominent creeks in Shannon County. Flood damage has occurred in many areas due to the amount of streams, creeks, and water sheds that contact the road systems in Shannon County.

Figure 3: Shannon County Location

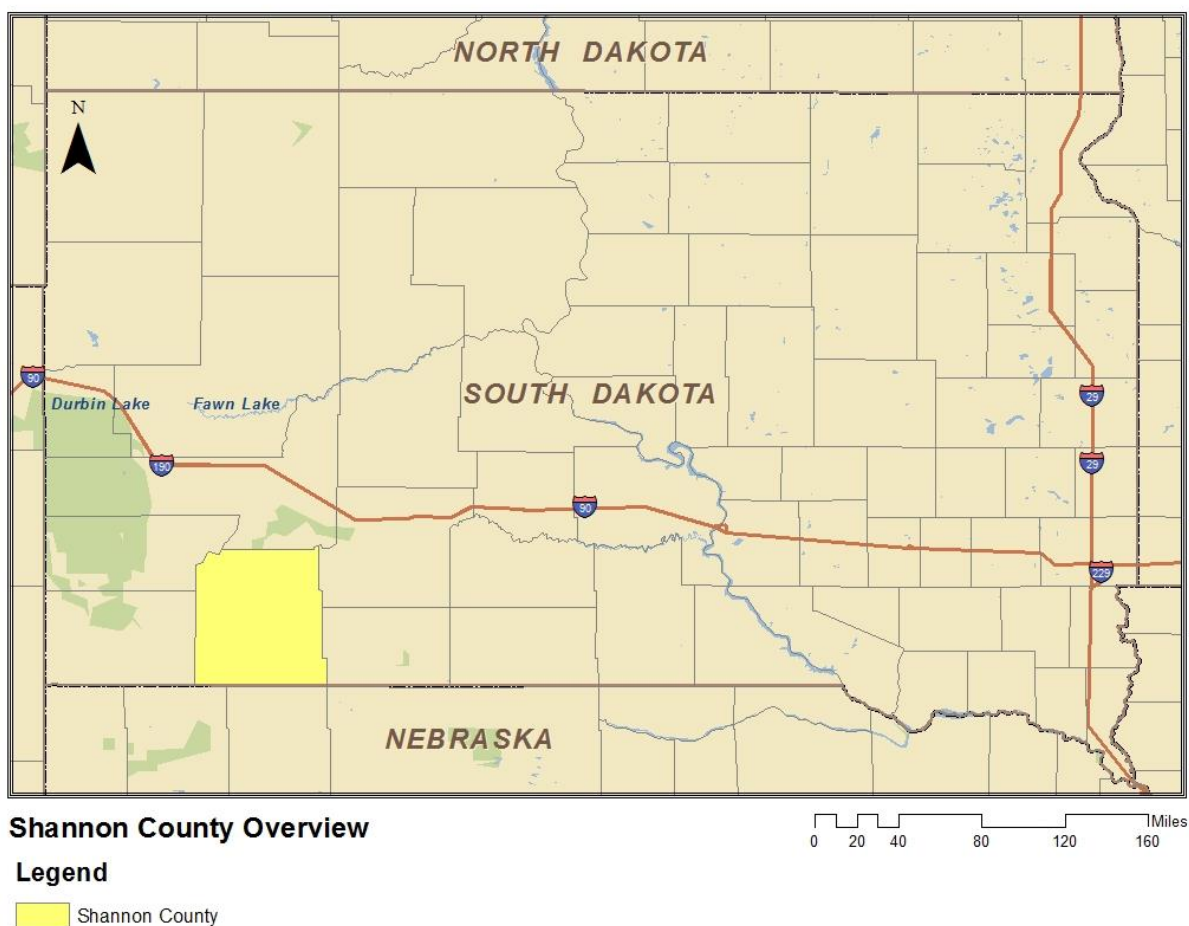
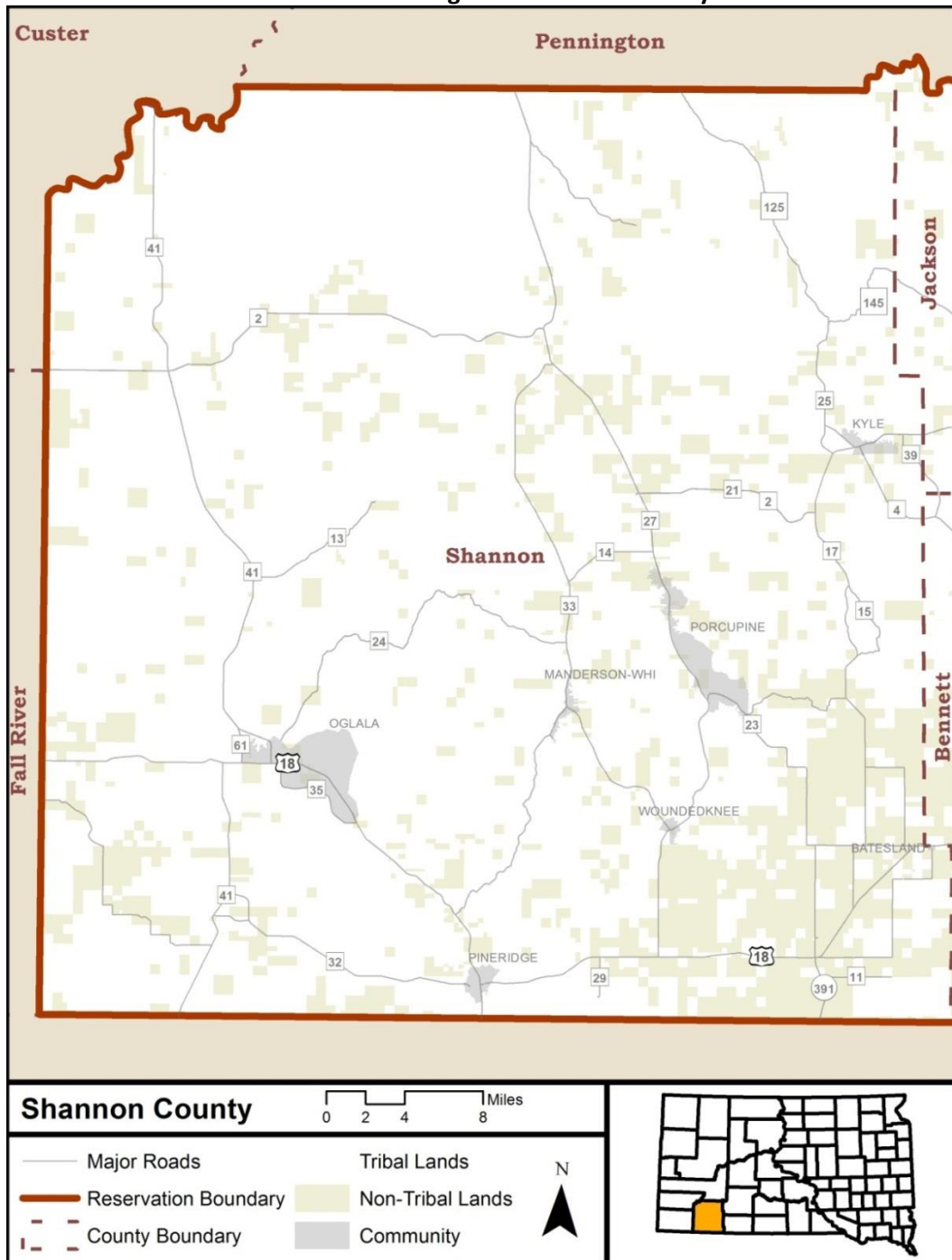


Figure 4: Shannon County



Geography, Geology and Topography

Three diverse geographic regions exist within the planning area. Wide-open grasslands are characteristic of the southern and eastern areas of the planning area. To the north are approximately 133,000 acres of Badlands. The Badlands landscape has a combination of mixed grass prairie, eroded ridges, peaks, mesas, and canyons. In the west central section, the open grassland merges with the eastern edge of the Black Hills -- further to the west. The resulting landscape is an area of rolling pine-

covered hills and ridges giving name to Pine Ridge.

The planning area is located in southwestern South Dakota. The planning area consists of three distinct geographic areas. Wide-open grassy plains dominate the southern and eastern sections. West central section is dominated by small spurs from the Black Hills that are located beyond the western border of the reservation. This area is dominated by pine-covered hills and ridges that were the inspiration for the name Pine Ridge. The northern part of the Reservation is dominated by Badlands that are characterized by colorful and roughly eroded peaks, ridges and mesas.

Elevations increase from northeast to southwest with rock outcroppings. Three diverse geologic units are exposed in the surrounding area, the Niobrara Formation (calcareous shale interbedded with beds of chalk and limestone), the Arikaree Formation (fine-grained sandstone with local beds of volcanic ash, silty sand and sandy clay) and the Ogallala Formation (medium-grained sandstone with poorly sorted sand, gravel, silt and clay) (USGS, 1991).

The Soil Survey of Shannon County (USDA, 1971) identifies typical surface soils in this area about seven inches thick, grayish-brown silt loam that is soft when drying and very friable when moist. Subsoil is about 32 inches thick. The soils are characterized as well-drained, fertile and easy to work. The area is better suited to grazing than crops due to limited precipitation. Surface runoff is slow to medium and permeability is moderate and water-holding capacity is high.

Two major rivers, the Cheyenne River and White River, are located within or at the Reservation boundaries and flow northeast to their confluence with the Missouri River. (MATRIX, 2003). Distance between Pine Ridge and Kyle is 45 miles; Pine Ridge to Martin is 50 miles; Rapid City to Pine Ridge is 100 miles.

Climate

The planning area's average annual temperature is 47.2 degree Fahrenheit. The average precipitation is 17.4 inches per year. The average amount of snowfall is 34.24 inches. The area experiences severe weather extremes during the summer and winter months. Summer temperature can reach 100+ degrees and in the winter months the temperature can reach below zero.

History and Culture

Pine Ridge Reservation

The Pine Ridge Indian Reservation is rich in history and cultural sites. A site older than 50 years may be considered a cultural resource and may require protection. Sites that contain cultural resources such as old buildings, fossils, tipi rings, fire pits, old bones and flake chips from the making of arrowheads are protected. In order to protect these sites from the illegal removal of artifacts, the location of these sites is not public information. Historical areas such as the Wounded Knee Battlefield and the Stronghold are cultural resources. The OST and the BIA are responsible for cultural resources on Tribal ground. The South Dakota State Historic Preservation Office is responsible for cultural resources on fee patent land.

The Lakota/Dakota people maintained their sacred and traditional practices and ceremonies which explains their very existence and survival. They continue a common practice for living off the land by utilizing the wild turnip (*timpsila*), June berries (*wipazuntkan*), choke cherries (*canpa sapa*), raspberries (*takanhecala*), buffalo berries (*mastinca pute*) and plums (*Kanta*). They gathered various plants from

which to make tea and other medicinal uses. They never took more than they could use in their *tiwahe* or *tiospaye*. They gathered what was ready seasonally, such as spring and summer, for the plants and medicines that would be prepared. They did their hunting in the fall, making ready for the long, cold winter months. They also practice their social activities such as *oskate wacipi* -- powwows, rodeos, Ironman horse racing, and district celebrations, mud bogging, memorial and honoring celebrations for education completion and/or military acceptance, give away and feast were a part of the celebration of these events. The future of Lakota existence is in the youth of today.

The greatest asset of the OST and the Pine Ridge Indian Reservation is the people and their culture. According to the OST Website, 46,855 people are members of the Oglala Sioux Tribe. Rich in the history of the Nation, the elders have passed on to the youth the spiritual beliefs of their ancestors, which place caring for family and community above other priorities.

The home and community are the places of gathering and strength for the people. It is the "space of places" which offers the cultural ethic of caring and nurturing the youth of the Tribe (Agyeman, Bullard & Evans, 2003, p. 146-147). Although the economic basis for Tribal members has changed radically in the last 125 years, the desire for providing for family is a strong motivator for the people. New business development remains a challenge in providing the alternative economy for Tribal members.

Providing a supporting infrastructure to empower the social capital of the Tribe is a key in further building the future of the Reservation (Warner, 1999, pg. 373-393). Opening opportunities for greater communication, transportation and business development are fundamental to this growth. Offering opportunities for the elders and others in the community to interact with each other and the youth can be increased through the ability to gather and meet. Basic infrastructure also enhances access to businesses and services, thereby strengthening the economic base of the Reservation.

Wounded Knee Visitor Center: Information and history surrounding the 1890 Massacre and the 1973 American Indian Movement Occupation are available to visitors here. The Wounded Knee Massacre site is a National Historic Site and is located east and north of the Pine Ridge Village.

Shannon County

Shannon County was founded on January 11, 1875 and was named for Peter Shannon, Chief Justice of the Dakota Territory Supreme Court. Shannon County was attached to Fall River County for judicial purposes and was governed by the board of Fall River County until July 17, 1979 when Shannon County elected their own commissioners. In 1982, Shannon and Washabaugh counties were the only two unorganized counties in the United States and were granted a home rule charter. The Pine Ridge Indian Reservation and the Badlands National Park comprise the majority of the land located within the boundaries of Shannon County.

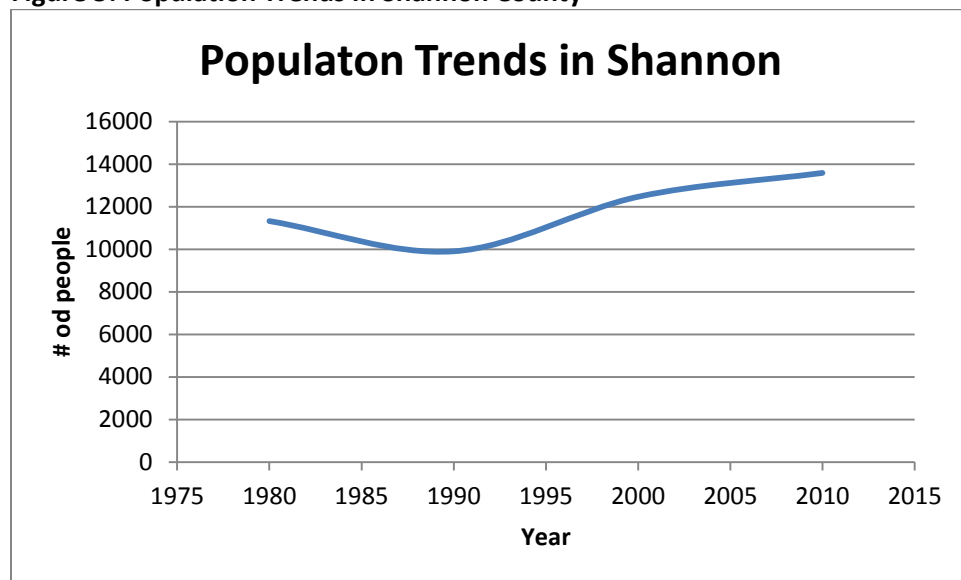
Demographics: Population, Income, and Social Characteristics

Population

The Census 2010 population estimate of Pine Ridge Indian Reservation is 16,720. Shannon County lies entirely within Pine Ridge Indian Reservation. Shannon County contains 13,586 people, or 79 percent of the Reservation population. . The population of Shannon County is as follows: 11,323 in 1980; 9902 in 1990; 12,466 in 2000; 12,852 in 2001; 13,228 in 2002; and 13,586 in 2010. Changes in the population

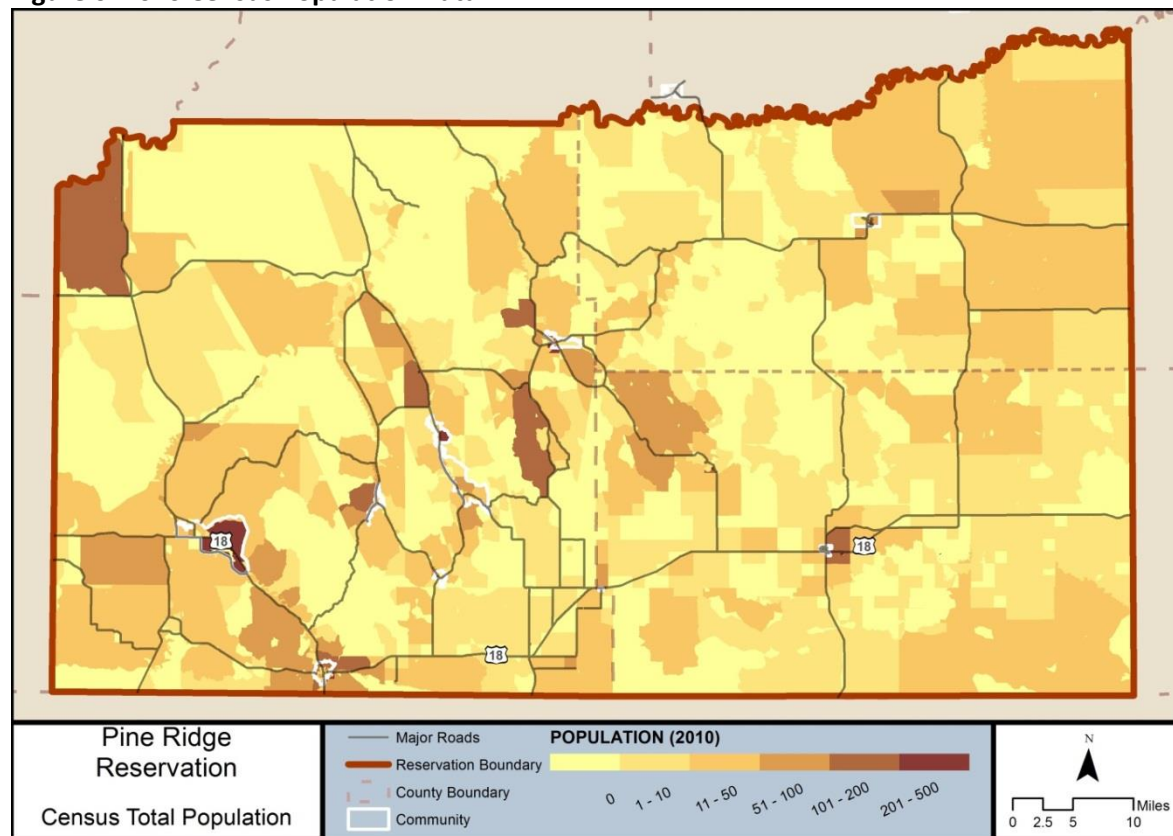
are difficult to predict because Shannon County residents move on and off the reservation in search of employment. The following chart indicates population trends in Shannon County.

Figure 5: Population Trends in Shannon County



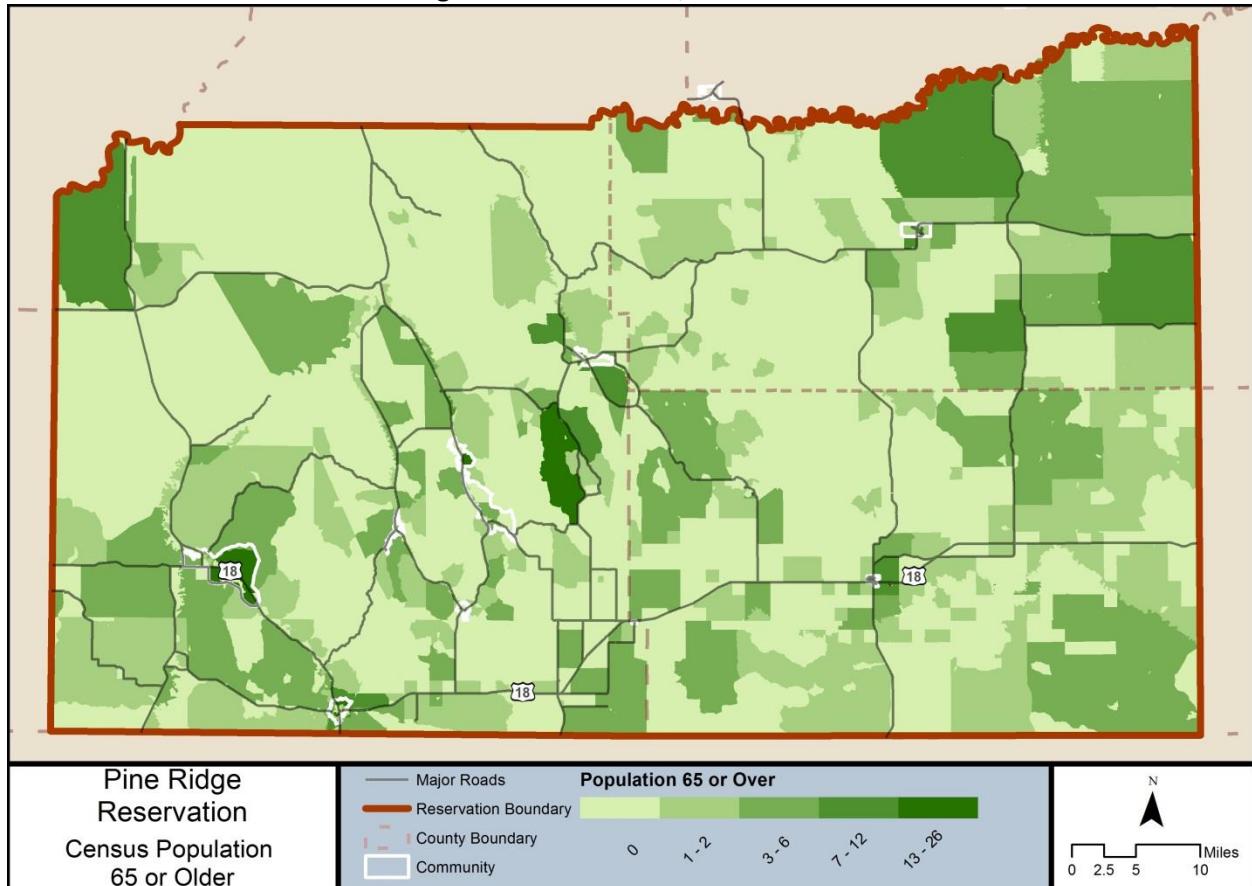
The following figure provides a visual representation of population across the planning area.

Figure 6: 2010 Census Population Data



In Shannon County, 39.3 percent of the population is 18 years or younger, compared with 24.9 percent of the population in South Dakota that is under the age of 18. 49.3 percent of the population is male and 50.7 percent of the population is female. Per 2010 Census data, 13,036 or 96 percent is American Indian (U.S. Census Bureau, 2010, DP-01 Profile of general population and housing characteristics, Shannon County). Figure 6 provides a visual representation of the concentration of elderly across the planning area.

Figure 7: 2010 Census, 65 and older

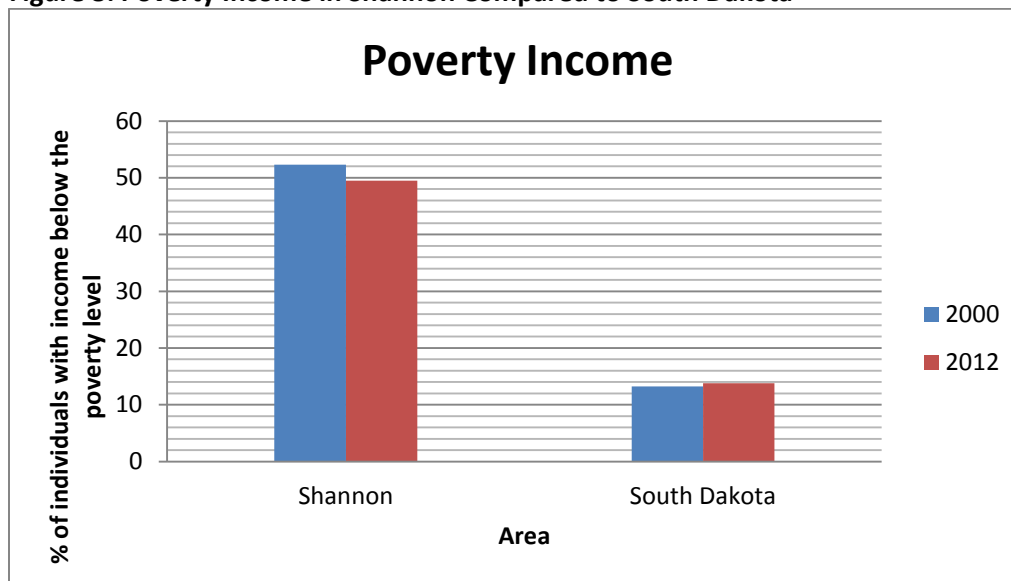


According to the Oglala Sioux Tribe webpage, one third of tribal members speak Lakota as their first language. Oglala Sioux Tribal population counts are higher than Census 2010 because the Census has not proved to be an effective means of determining tribal populations.

Income

According to 2012 ACS 5-year estimates, the median household annual income in Shannon County is \$26,282. 20.1 percent of households have an annual income of less than \$10,000. Those households that earn more than \$50,000 annually are reported at 24.3 percent. In 2012, 49.5 percent of the population of Shannon County reported income below poverty income, compared to 52.3 percent in 2000. In 2012, 13.8 percent of the population of South Dakota reported income below poverty income, compared to 13.2 percent in 2000. Figure 8 represents this information below:

Figure 8: Poverty Income in Shannon Compared to South Dakota



Source: U.S. Census Bureau, DP-03, 2000; ACS 2012 5 year estimates, DP-03,2012

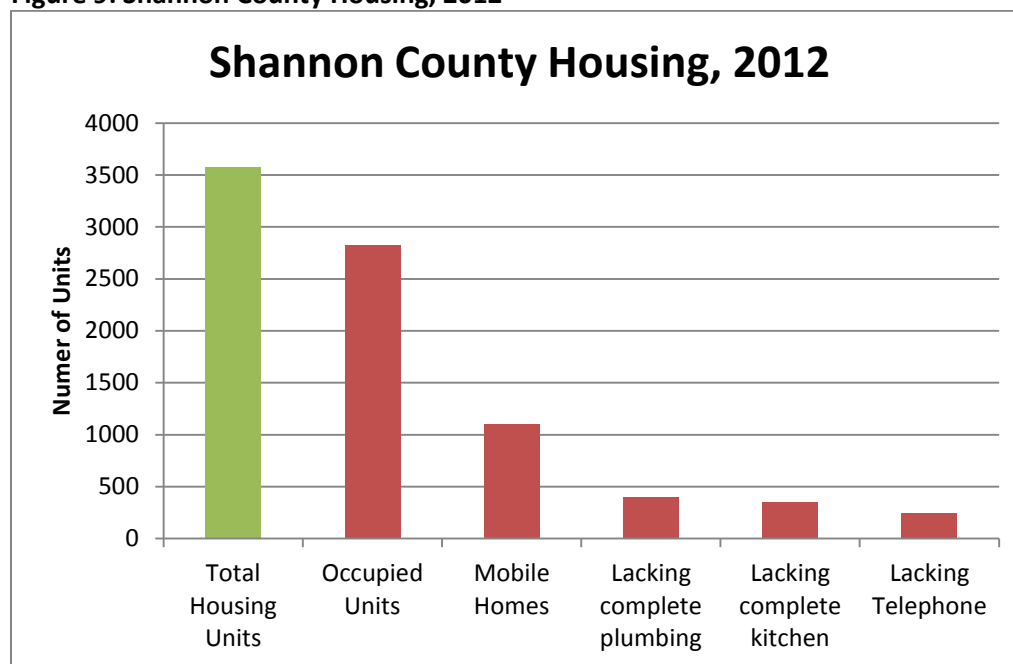
For the planning area as a whole, the median household annual income is \$35,559. 15.2 percent of households have an annual income of less than \$10,000. In 2012, 37.1 percent of the planning area population reported income below poverty income.

The unemployment rate for Pine Ridge Indian Reservation varies from 50-60%.

Housing

According to 2012 ACS 5 year estimates, there are 3,580 housing units in Shannon County. There are 2,829 occupied housing units, of which 30.8 percent are mobile homes. The median value of owner occupied housing units is \$19,400. 51.8 percent are owner occupied. 2,277 are 1-unit detached homes and 1,101 are mobile homes. Selected characteristics of the 2,829 housing units include 404 units or 14 percent that lack complete plumbing facilities, 349 units or 12 percent that lack complete kitchen facilities. Nine percent of these households do not have telephone service. This information is visually represented in figure 9.

Figure 9: Shannon County Housing, 2012



The Oglala Sioux Tribal Housing Authority is constructing homes to reduce the backlog of substandard housing and to provide homes for the four percent of the families that do not have housing of their own. There are hundreds of substandard mobile units scattered across the Pine Ridge Reservation; many poorly anchored and at risk during wind storms.

Economy and Labor Force

Census 2010 states the number of people in Shannon County age 16 and over is 9112. The number of people in the labor force is 4500. This is 49.4 percent of the total population age 16 and over. There are 4612 of the people age 16 and over that are not in the labor force. The unemployment rate is 50.6 percent of the total population age 16 and over. The following table illustrates the occupational categories of 3404 people in the labor force. The remaining 1126 people in the labor force are not accounted for by Census 2000 data.

Table 8: Labor Force

Occupation	Number of People	Percent of Total
Managerial and Professional Specialty	1368	39.6
Sales and Office	657	19.0
Service Position	829	24.0
Production, transportation & material moving	337	9.8
Construction, extraction & maintenance	263	7.6
Total	2601	100%

The 3,454 members of the labor force are employed in one of the classes listed in the following table.

Table 9: Job Category

Class of Worker	Number of Workers	Percent of Total
Private wage and salary workers	969	28.1
Government workers	2252	65.2
Self-employed workers	233	6.7
Unpaid family workers	0	0
Total	3454	100%

The following table illustrates the economic impact of crop and livestock production in the planning area:

Table 10: Job Category

District	Total # of Farms with Crops	Total # of Farms with Livestock	Total Production of crops	Total Production of livestock	Total # of Employees on Crop Farms	Total # of Employees on Livestock Farms
Eagle Nest	34	15	\$ 3,571,000.00	\$ 1,179,000.00	54	23
La Creek	27	5	\$ 4,107,000.00	\$ 2,985,000.00	50	48
Medicine Root	7	10	\$ 557,000.00	\$ 1,175,000.00	11	18
Pass Creek	1	2	\$ 110,000.00	\$ 153,000.00	2	4
Pine Ridge	0	2	\$ 0.00	\$ 240,000.00	0	5
Porcupine	4	5	\$ 370,000.00	\$ 372,000.00	5	9
Wakpamni	4	3	\$ 346,000.00	\$ 291,000.00	5	4
White Clay	46	1	\$ 4,967,000.00	\$ 98,000.00	81	2
Wounded Knee	1	0	\$ 90,000.00	\$ 0.00	1	0

Source: Dun & Bradstreet (NAIC 111)

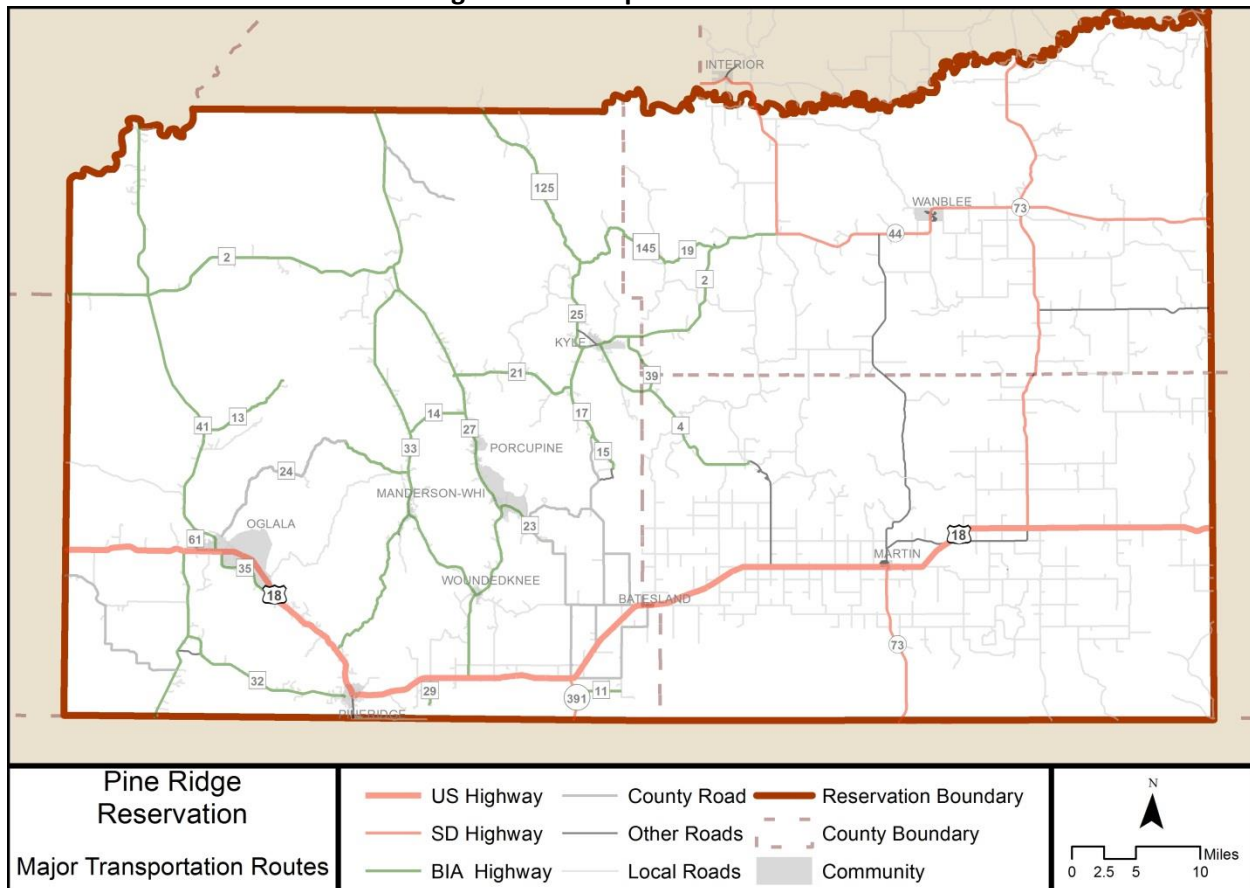
Transportation

South Dakota Highway 18 travels across the Reservation from east to northwest and is the major artery. Other paved major all-weather roads include SD 87, 29 and 75, BIA 2, 27, 28, 40 and 41. Isolated homes and communities are served by gravel and dirt roads. Many homes on the Reservation are inaccessible during periods of blizzards or heavy rain.

There are a total of 197.85 miles of South Dakota highways on the Reservation, including 59.33 in Shannon County, 72.05 in Bennett, and 66.27 in Jackson. A total of 462.3 miles of BIA roads and 352 miles of county roads run through all three above-mentioned counties. The mileage totals do not include secondary and bus route dirt roads, for which there is no estimate.

The highway system in Shannon County consists of 118 miles of county road, and US Highway 18, which travels west to east through the county. Several secondary county/tribal roads intertwine throughout the county, and are maintained by the OST/county.

Figure 10: Transportation Routes



There are 3,371 employed people over the age of 16. The mean travel time to work is 16.8 minutes. Method of commute is illustrated in the table below.

Table 11: Type of Commute

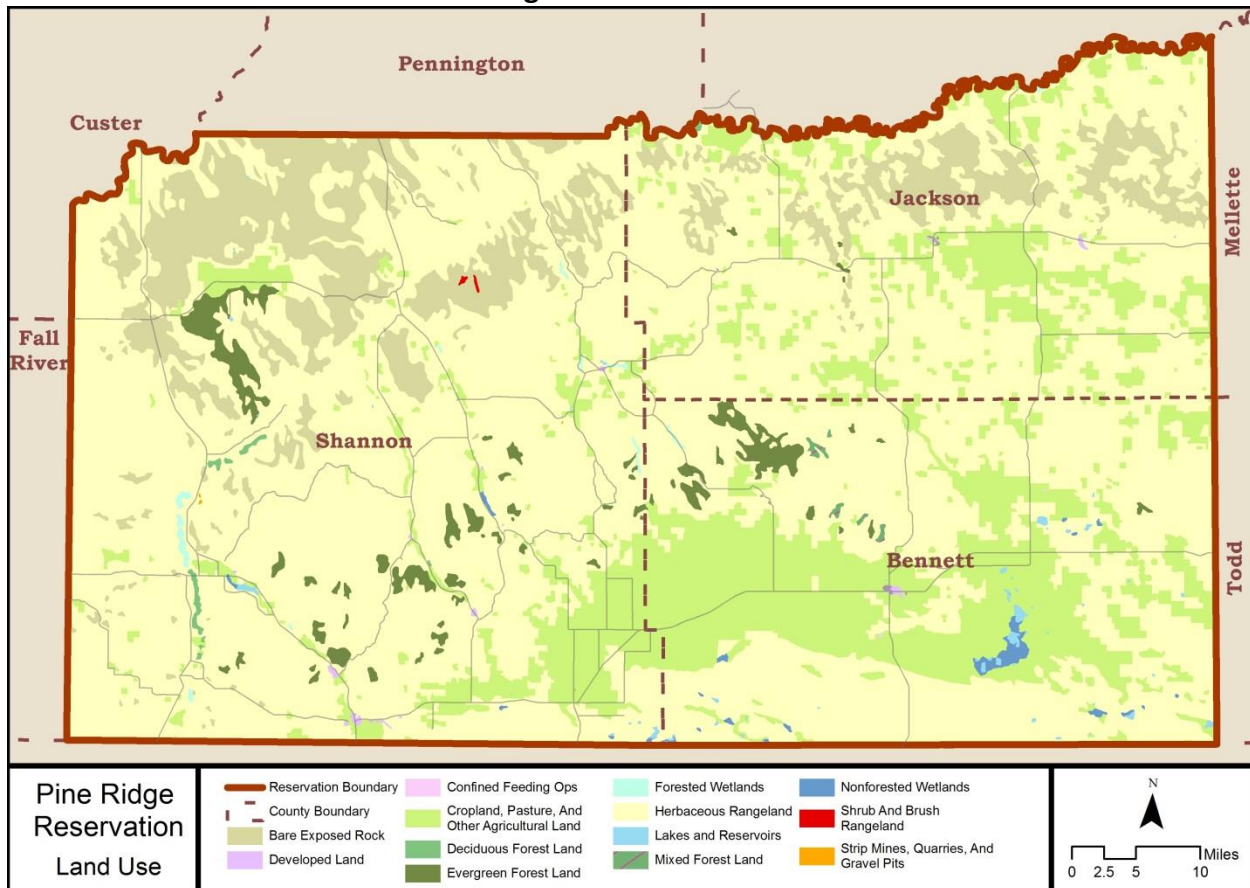
Type of Commute	Number of People	Percent of Total
Car, truck or van – drove alone	2161	64.2
Car, truck or van -- carpooled	479	14.3
Public transportation	70	2.0
Walked	302	8.9
Other means	68	2.0
Worked at home	291	8.6
Mean travel time to work (minutes)	16.8	

Land Descriptions and Usage

Pine Ridge Reservation

There is no planning and zoning on the Pine Ridge Indian Reservation. The following map illustrates land use types in the planning area.

Figure 11: Land Use



In lieu of an adopted plan, estimates of the land use were overlaid on the Village of Pine Ridge to show the approximate division of land use types in that community.

The major land use, or 332 acres, is housing in the Village of Pine Ridge. There are some mobile homes in Pine Ridge, but the vast majority of the housing is single-family constructed homes. The constructed homes include housing for Indian Health Service and Bureau of Indian Affairs employees. There are no apartment buildings. There is one elderly and handicapped facility, Cohen Memorial Home. The second largest land use is recreation. This includes the powwow grounds and campground, and the softball fields. The third largest land use is 132 acres of green space. This land includes the White Clay Creek and areas without buildings such as the former golf course and grassed areas around Indian Health Services and the Old Hospital.

The fourth largest land use is 58 acres of schools. This includes Pine Ridge High School, Middle School and Grade School and the Pine Ridge College Center of Oglala Lakota College. The fifth largest land use is government. This includes the Tribal Headquarters, Red Cloud Building, and all Tribal offices. Federal offices in Pine Ridge include Bureau of Indian Affairs, Indian Health Services and the USDA Natural Resources Conservation Service. South Dakota State Offices include Social Services and Job Service.

The hospital, Indian Health Services, is the fifth largest land use consisting of approximately 17 acres.

Business shares the fifth largest land use with hospital. There are 17 acres of businesses. The businesses in Pine Ridge include in alphabetical order: Ace Hardware, Big Bat's Shell, Bowk Flowers, Butch's Barber Shop, Casey Family Programs, Cohen Memorial Home, Dakota Plains Legal Services, L & S Video, Lakota Café, Lumber Yard, Madeline's Hair Salon, Murdock Electric and Maintenance, Pronto Auto Parts, Pine Ridge Oil Co., Pizza Hut, Post Office, Rick's Ready Mart, Sioux Funeral Home, Sioux Nation Shopping Center, Subway, Taco Johns, and Yellow Bird's Store. There is not warehouse, storage, industrial or manufacturing use on the Reservation. Many individuals may have a home business that produces items on a smaller scale such as arts, crafts, quilts or clothing. These home businesses are often not accounted for in statistical data.

The sixth largest land use is four acres of churches. This includes Lakota Baptist Church, LDS Missionaries, Oglala Recreation and Worship Center, Pine Ridge Episcopal Mission, Pine Ridge Gospel Fellowship, Presbyterian Church and Sacred Heart Church.

Possible land use options for the Village Pine Ridge are to develop the green space. The green space consists of open fields and land along the creeks. This land would benefit from natural resource and wildlife management and provide opportunities for recreation. In areas with vast amounts of range land, there is a tendency to develop housing on prime range land. Prime range land is being removed from production by housing. Lease money is lost to the Tribe in these areas. Consideration could be given to placing the housing in other areas.

Shannon County

The county has experienced minimal population growth, and significant growth is not expected. The town of Batesland population has remained fairly stable. Primary travel is to the towns of Pine Ridge to the west, Martin to the east, and Gordon, Nebraska to the south. This area is fairly isolated, and consists of basic needs for the residents. OST and BIA provide all ambulance services, healthcare services, and law enforcement.

Utilities

The Pine Ridge Reservation provides a solid waste landfill that services the entire Reservation. The utility provider for Batesland is LaCreek Electric. Water is provided to residents via city wells, but Batesland is scheduled to be hooked up to the rural water system in December of 2014.

The OST *Mni Wiconi* Rural Water Project brings water to the Lower Brule, Pine Ridge, and Rosebud Reservations as well as the West River/Lyman-Jones Rural Water System. West River/Lyman-Jones serves the people located in nine counties outside of the reservations. Prior to the construction of the *Mni Wiconi* Rural Water Supply Project, most people in southwestern South Dakota had serious water quantity and water quality problems. Once completed, the Project is estimated to serve 52,000 people, including more than 40,000 people on the three Indian reservations.

Government

Pine Ridge Reservation

The OST Government operates under a constitution that is consistent with the Indian Reorganization Act of 1934. OST membership and the OST Council of the OST sanctioned the constitution. An elected

assembly that consists of a five-member Executive Committee and a nineteen-member Tribal Council govern the Tribe. Tribal Council members serve a two-year term.

The OST Council President is the administrative head of the Tribe. The Executive Committee assists the Tribal Chairman. The Executive Committee consists of the President, Vice-President, Secretary, Treasurer, Fifth Member, and Sergeant at Arms. The President and Vice-President of the Tribal Council are elected at large and the others are elected from their Districts by the Tribal membership. Members of the OST Executive Committee are: Bryan Brewer, Tribal President; Tom Poor Bear, Tribal Vice-President; Mason Big Crow, Treasurer; Rhonda Two Eagle, Secretary; and David Pourier, Fifth Member (Oglala Sioux Tribe, 2013).

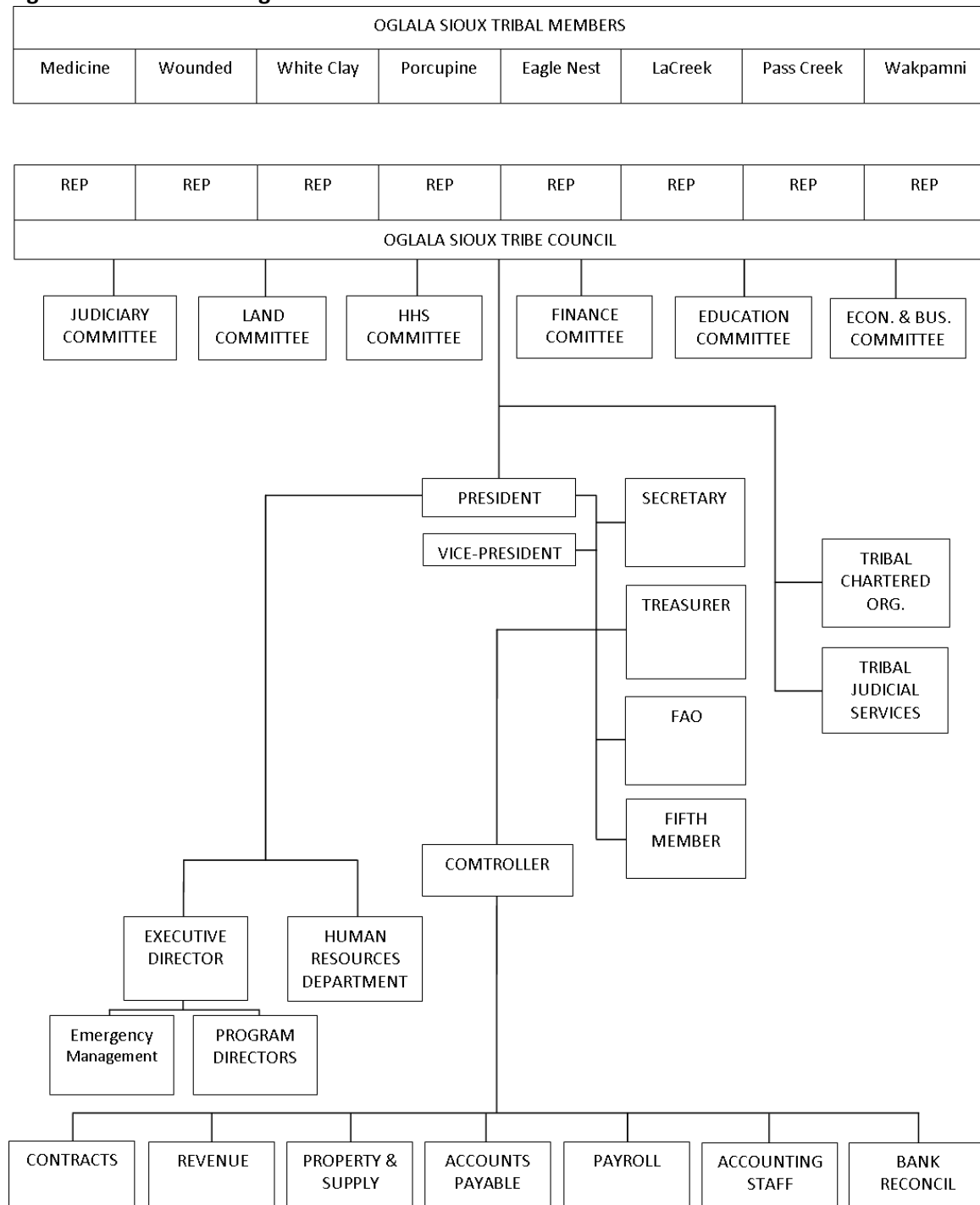
The Oglala Sioux Tribal Council Members are elected from each District. Tribal Council members serve on one or more of the following committees: Economic Development, Health and Human Services, Judiciary, Land, and Education. The Oglala Sioux Tribal Council Members are listed below.

Table 12: Oglala Sioux Tribal Council Members 2012-2104

District	Elected Oglala Sioux Tribal Council Members
Eagle Nest	Ruth Brown, Jim Meeks
La Creek	Craig Dillon, Charles Cummings
Medicine Root	Stanley Little Whiteman, Bernie Shot With Arrow
Oglala	Paul Little, Barbara Dull Knife
Pass Creek	Lydia Bear Killer, James Cross
Pine Ridge	Larry Eagle Bull, Irving Provost, Robin Tapio
Porcupine	Troy (Scott) Weston, Danielle (Dani) LeBeau
Wakpamni	Dan Rodriguez, Jackie Siers
Wounded Knee	Garfield Steele, Kevin Yellow Bird Steele

A District Chairman, Secretary, and Treasurer govern each of the nine Districts at the local level. There is a Community Action Program (CAP) office located in each of the Districts. The CAP officers have a meeting room for District meetings, community events and elderly meal programs.

Figure 12: OST Tribal Organization



The OST administers approximately 63 Tribal programs. A partial listing of OST programs and services is illustrated below.

Table 13: OST Programs

OGLALA SIOUX TRIBAL PROGRAMS	
Access to Recovery	Gaming Commission
Ambulance Service	Economic Development
Anpetu Luta Otipi (four locations)	Financial Services
Attorney's Office	Health Administration
Benefits Office	Health Education Program
Burial Assistance Program	Home Improvement Program
Community Health Representatives	Higher Education
Child Care and Development Office	Financial Services
Clinical Lab	Emergency Management
Commodity Food Distribution Program	Human Resources Dept.
Community Action Programs (CAP)	IHS Security
Court administration	Johnson O'Malley Program
Court of Appeals	Land Office
Dept of Corrections	Meals for the Elderly
Diabetes Prevention Transportation	Native Healing
Emergency Youth Shelter	Natural/Water Resources
Enrollment Office	ONTRAC
Employee Assistance Program	Pesticide Enforcement
Environmental Protection Program	Revenue Department
Energy/LIHEAP	Solid Waste

Shannon County

Shannon County is governed by a five-member board of commissioners with a staff of 19 employees that provide traditional services common to county government. Fall River County provides auditor, treasurer, register of deeds, states attorney and clerk of courts services to Shannon County. The Shannon County courthouse is located in the City of Hot Springs, at 906 N. River Street. The Sheriff is full time, with three part time deputies.

The town of Batesland is governed by a three person Board.

County business for Shannon County, such as motor vehicle license and County Commissioner meetings, is conducted in Fall River County. Fall River County is not part of the Reservation, but borders Shannon County to the west. Shannon County was organized in 1875 and consists of 2,094 square miles (NACO, 2003). Shannon county has an appointed sheriff and three part time deputies that work with OST and BIA.

Tribal Community Services

The Indian Health Service operates a hospital in Pine Ridge on the western end of the Pine Ridge Indian Reservation, serving a Sioux Indian population of more than 20,000 and is the largest in the Aberdeen area. A physician staff sees medical, obstetrical, pediatric, and surgical patients. This facility includes full service general surgery, an obstetrical ward, and dental. Operating within the Pine Ridge Service

Unit are the Kyle and Wanblee Health Centers and three health stations (Allen, Manderson, and Porcupine). Centrally located on the Pine Ridge Reservation is the Kyle Health Center which has an ambulatory care center with outpatient services. The outpatient department is staffed with four physicians (Podiatrist, Medical Doctor, Physician Assistant, and Nurse Practitioner), four nurses, pharmacist, optometrist, laboratory technician, and radiology technician. In addition, the Health Center offers dental services with four operatories staffed by two dentists. The Kyle Health Center also provides mental health services, public health nurses and environmental health care. In addition to the Pine Ridge Hospital, Wanblee Health Center, which is on the eastern end of the Pine Ridge Reservation, is staffed by a pharmacist, dentist, clinic nurse, a physician's assistant, and physician consultants. The OST also provides elderly meal programs which serve hot lunches daily within each of the nine districts.

The OST operates and maintains the Reservation wide ambulance service. The ambulance service provides patient transportation throughout the entire Reservation. Ambulance units are used for transporting patients to the main hospital facility in Pine Ridge. Three units are stationed in Pine Ridge; one in Oglala, one in Kyle, and one in Wanblee. Thirty Five trained Emergency Medical Technicians are on call to provide emergency medical services in the ambulances. The OST contracts with the Rapid City Regional Hospital and the Scottsbluff, Nebraska Hospital to provide helicopter services in extreme emergencies. The OST ambulance service provides twenty four hour service.

The Oglala Sioux (Lakota) Housing Authority (OSLHA) serves approximately 14,000 people on the Pine Ridge Reservation and manages more than 1200 low-income rental units and 400 home ownership units. There are cluster housing units in each of the nine districts. The Tribe has brought in some Governor Houses for some of the elderly. The need for housing is still great for the people of the Pine Ridge Indian Reservation. Based on the population, approximately 2100 additional houses are needed.

The OST Department of Public Safety (OST DPS) serves nearly 50,000 people over 3.2 million acres on the Pine Ridge Reservation. The OST Department of Public Safety is a P.L. 93-638 Self Determination Contract to provide Law Enforcement services.

Schools

There are four types of schools on the Pine Ridge Reservation -- Public, BIA, Grant and Private schools. **Public Law 81-874** Shannon County Schools are public schools and are located in four different places on the reservation. Red Shirt, a K to grade 8 school; Batesland, Rockyford and Wolf Creek are Pre-K to 8th grade schools. There is also a Shannon County Virtual High School. **BIA Public Law 95-561** Bureau of Indian Affairs funded school at Pine Ridge School (Pre-K to 12). **638 Grant/Contract Schools:** American Horse in Allen, Loneman in Oglala, Porcupine School and Wounded Knee in Manderson are all K-8 grade schools. Little Wound School in Kyle and Crazy Horse School in Wanblee are both K-12 schools. Private Schools on the Pine Ridge Indian Reservation are Red Cloud Indian School in Pine Ridge which is Pre-K through 12th grade school and Our Lady of Lourdes in Porcupine is a K-8 grade school. Lakota Waldorf School located in Kyle was founded in 1993 by a group of Lakota parents and is focused on teaching the Lakota language. Another school founded by the Oglala Lakota College's Council of Elders is the *Tokeya Lakota Woglakapi*, a Lakota immersion school now in its fifth year.

The Oglala Sioux Tribe also provides Day Care Services in Kyle, Allen and Pine Ridge for the utilization of working parents. There is a Community Action Program office in each of the nine districts for the people to obtain energy applications or utilizing district services daily.

There are 11 Head Start and Early Childhood Programs across the Reservation. There are fourteen schools on the Pine Ridge Indian Reservation. Four high schools and fourteen elementary schools serve approximately 6275 students who are predominantly of Native American descent. The Bureau of Indian Affairs Office of Indian Education is the primary funding source for the majority of schools. Reservation schools categorized by location, grades taught and funding source are listed below.

Table 14: School Enrollment-Tribal Education (2014)

School	Location	Grade	Enrollment	Funding Source
Pine Ridge School	Pine Ridge	K-12	853	BIA
Little Wound School	Kyle	PreK-12	774	Grant School
Crazy Horse School	Wanblee	K-12	249	Grant School
Red Cloud Indian School	Pine Ridge	K-12	387	Parochial
Pahi Sinte Oioeiaha	Porcupine	K-8	N/A	Grant School
Wounded Knee District School	Manderson	K-8	138	Grant School
American Horse School	Allen	K-8	267	Grant School
Loneman School	Oglala	K-8	N/A	Grant School
Wolf Creek School	Pine Ridge	K-8	613	Public
Batesland School	Batesland	K-8	213	Public
Red Shirt School	Red Shirt	K-8	81	Public
Rockyford School	Rockyford	K-8	458	Public
Our Lady of Lourdes	Porcupine	K-8	141	Parochial
The Christian Academy	Wakpamni	K-8	N/A	Parochial

In 1971, the Oglala Lakota College (OLC) system was established as a Charter Organization independent from the Tribe. OLC granted its first Bachelor's Degree in Elementary Education in 1978. Today, OLC offers over 25 degrees including Masters in Lakota Leadership/Management, eight Bachelor Degrees including Nursing and 19 Associate Degrees. The 2014 Spring Enrollment for OLC was 1,680. There are 12 college centers including Piya Wiconi, the administrative center for OLC. Other programs offered include Bilingual/Bicultural Certificate, General Equivalency Diploma, Lakota Summer Institute, and graduate coursework in Education, Lakota Studies, and Human Resources (Oglala Lakota College, 2010).

Shannon County

Shannon County has a population of 4,956 enrolled in kindergarten through grade 12. The number of Shannon County students enrolled in different grade levels is illustrated below.

Table 15: School Enrollment-Shannon County

School Enrollment 3 Years and Over	Number of Students	Percent of Total
Total enrollment	4956	100%
Nursery school, preschool	383	7.7
Kindergarten	373	7.5
Elementary school (grades 1-8)	2732	55.2
High school (grades 9-12)	931	18.8
College or graduate school	537	10.8

Table 16: Shannon County Schools

Shannon County Schools					
School	Phone	Location	Grade	Enrollment	# of Build
Batesland	288-1948	Batesland	PreK-8	213	5
Wolf Creek	867-5174	Wolf Creek	PreK-8	613	9
Rocky ford	455-2438	Rocky Ford	PreK-8	458	11
Red Shirt	255-4224	Red Shirt	PreK-8	81	6
Virtual High School	455-6700	Rockyford	HS	112	N/A

Fire Protection

The BIA manages the Branch of Fire Management at Pine Ridge Indian Reservation. The Branch of Fire Management has the following fire engines: Seven grass units, four tenders and one structure unit. There are 9 Federal employees with the Branch of Fire Management. Those employees are Wildland Fire Program Manager, Fuels Management Technician, Fire Control Specialist, Secretary, six Forestry Technicians, and three Forestry Aides.

The Fires Control Office averages about 500 fires a year. The fire season usually runs from mid-April to early November, depending on the weather. During the fire season, the Branch of Fire Management utilizes AD Firefighters, Blade Operators, Timekeepers and Dispatchers. A Heliteck Team (emergency strike team) and a Single Engine Aircraft Team were used for the first time in 2003 (BIA, Branch of Fire Management). The Branch of Fire Management serves the entire Reservation. There are hydrants located along the Mni Wiconi waterline. If necessary, livestock wells and ponds can be used as a water source for firefighting. The fire crews can be used outside the Reservation.

Batesland Fire Department provides services in Shannon County. Emergency Management services are provided under the South West District for Shannon County.

Environment

The OST adopted Ordinance No. 98-09 in 1998, establishing a "policy for the protection and preservation of the environment and the health and safety of the Oglala Sioux People of the Pine Ridge Indian Reservation". In doing so, it adopted the OST Environmental Review Code, which established the environmental regulations governing the PRIR. (OST Ordinance 98-08).

Floodplains and Water Tests

The Water Quality Coordinator from OST Environmental Protection Program is responsible for surface water monitoring in the rivers and six reservoirs at Pine Ridge. There are 44 monitoring sites in the creeks and rivers on the Reservation. The six reservoirs are Kyle, Denby, Yellow Bear, Wamblee, Poor Bear, Charging Crow, Oglala and White Clay. Concerns with surface water quality include metal content that is naturally occurring in the creeks and rivers of the Badlands and the occasional contamination

from livestock. The floodplains at Pine Ridge are not monitored. There are houses located in the floodplains, and flooding can present problems.

Green Belts and Open Space

The majority of the land at Pine Ridge Indian Reservation is used as range land. Since the Reservation is rural, green belts and open spaces are most likely to be actively managed if the land is range. Tribal members use the range land and wooded areas to gather herbs, berries (such as chokecherries), wild turnip and plants for ceremonies.

Animals

Wildlife on the Reservation include Rocky Mountain Bighorn sheep, mule deer, whitetail deer, Mariam turkey, coyote, prairie dog, black-footed ferret, mountain lions, bobcats, badgers, elk and many varieties of songbirds and raptors.

Plants

The range land on Pine Ridge Indian Reservation is dominated by western wheatgrass, little and big bluestem, kentucky bluegrass, and grama grasses. Cedars and ponderosa pine dominate the draws and ravines. Cottonwoods, ash and willows are seen along the rivers and lowlands. Commonly known medicinal and spiritual plants such as Echinacea and sage are scattered across the range land. Identity and use of many other plants is not public knowledge.

Structures and Critical Facilities

The Department of Homeland Security (DHS) defines critical infrastructure as “assets, systems, and networks, whether physical or virtual, so vital to the United States that their incapacitation or destruction would have a debilitating effect on security, national economic security, national public health or safety, or any combination thereof”.

According to FEMA, “A critical facility is a structure that, if flooded (or damaged), would present an immediate threat to life, public health, and safety.” Examples of critical facilities include hospitals, emergency operations centers, schools, wells, and sanitary sewer lift stations, etc.

This plan addressed the major communities that lie within the nine voting districts with the Pine Ridge Indian Reservation. The planning team identified the buildings, infrastructure, and critical facilities within each of these communities. Within each of these nine communities, OST Rural Water supplies the water. OST Water and Sewer provide and maintain the water and sewer systems within each of these communities. The electrical supply system is provided by three electrical companies that service these communities; LaCreek Electric Co., Nebraska Power and Black Hills Electric. All Reservation roads are owned and maintained by the Oglala Sioux Tribe. The following tables provide an overview of the major facilities in each of the nine communities on the Pine Ridge Indian Reservation.

Table 17: Pine Ridge Village Critical Facilities

<u>Structure</u>	<u>Age</u>	<u>Prior Damages</u>	<u>Vulnerability</u>
Pine Ridge High School	New	None	High - students
Pine Ridge Grade School	New	None	High - students
Pine Ridge School Dormitory	New	None	High - students
OLC College Center	New	None	High - students

Pine Ridge School Dining Room	Old	None	High - students
OST Admin Office Buildings	Old	None	High - employees
Commercial Buildings	Old	None	High - shoppers
OST Maintenance Buildings	Old	None	Medium
OST Justice Center	New Const	None	High - employees
OST Corrections Facility	New	None	High - inmates
OST Court House	Old	None	High - employees
BIA Admin Office	Old	None	High - employees
BIA Maintenance Shop	Old	None	High - employees
BIA Fire Station	New	None	Medium
OST Rural Water Maintenance	New	None	Medium
BIA Road Maintenance	New	None	Medium
IHS Hospital	New	None	High - patients
OST Housing Admin	New	None	High - employees
Boys & Girls Club	New	None	High - students
SD State Offices	New	None	High - employees
Cohen Home	Old	None	High - elderly
OST Nursing Home	New Const	None	High - elderly
Various Churches	Old	None	Medium
CAP Office	Old	None	High - elderly
Red Cloud Indian School	Various	None	High - students
Bills Mills Hall	Old	None	High - employees

*Age Legend: New = Under 20 years old

Table 18: Kyle Community Critical Facilities

<u>Structure</u>	<u>Age</u>	<u>Prior Damages</u>	<u>Vulnerability</u>
Little Wound School K-12	Old	Bldg.–Wind Storm	High - students
OST Day Care Center	Old	None	High - children
Oglala Lakota College	New	None	High - students
OST Rural Water Office	New	None	Medium
Kyle Health Center	New	None	High – patients
Elderly/Handicap Apartments	New	None	High – residents
Kyle Police Station	New	None	Medium
Kyle Detention Center	New	None	High – inmates
Kyle Court House	New	None	Medium
OST Parks and Recreation	New	None	Medium
Tipi Iyokihe CAP Office	Old	None	High – elderly
Kyle Senior Meals Center	Old	None	High – elderly
Lakota Trade Center	New	None	Medium
OST Anpetu Luta Otipi	Old	None	Medium
Piya Wiconi College Center	New	None	High - students
Lakota Ranch Resort	New	None	Medium
Various Churches	Old	None	Medium

Table 19: Porcupine Community Critical Facilities

<u>Structure</u>	<u>Age</u>	<u>Prior Damages</u>	<u>Vulnerability</u>
Porcupine School K-8	New	None	High - students
Our Lady of Lourdes Mission School K-8	Old	None	High – students
Police Station	Old	None	Medium
Porcupine Clinic	Old	None	Medium
Elderly/Handicap Center	New	None	High – elderly
OLC Head Start	New	None	High – children
Community Center	Old	None	High - elderly

Table 20: Oglala Community Critical Facilities

<u>Structure</u>	<u>Age</u>	<u>Prior Damages</u>	<u>Vulnerability</u>
Loneman School K-8	New	None	High - students
OST Police Station	Old	None	Medium
Cluster Housing	Old	None	High – residents
**Belt Village	New	Yes – Tornado	High – residents
2 Churches	New	None	High – recreational
Community Store	New	Yes – rebuilt	Medium
Post Office	Old	None	Low

**Legend – Belt Village was built as a result of tornado damage to the Oglala cluster housing. FEMA mitigation funds were used to build storm shelters for residents in the Village.

Table 21: Manderson Community Critical Facilities

<u>Structure</u>	<u>Age</u>	<u>Prior Damages</u>	<u>Vulnerability</u>
Manderson School K-8	Old	None	High - students
CAP Office	Old	None	High – elderly
Store	Old	None	Medium
Post Office	Old	None	Low
Cluster Housing	Old	None	High - residents

Table 22: Wamblee Community Critical Facilities

<u>Structure</u>	<u>Age</u>	<u>Prior Damages</u>	<u>Vulnerability</u>
Crazy Horse School K-12	Old	None	High - students
CAP Office	Old	None	High – elderly
Post Office	Old	None	Low
OLC College Center	New	None	High - students

Table 23: Allen Community Critical Facilities

<u>Structure</u>	<u>Age</u>	<u>Prior Damages</u>	<u>Vulnerability</u>
Allen School K-8	Old	None	High - students
CAP Building	Old	None	High – elderly
Senior Center	Old	None	High - elderly

Table 24: LaCreek Community – Martin Critical Facilities

Structure	Age	Prior Damages	Vulnerability
Cluster Housing	Old	None	High – residents
Casino	New	None	High – patrons
CAP Building	Old	None	High - elderly

The previous list of tables is a more extensive list of critical facilities than those maintained solely by OST.

Figure 13 and Table 25 illustrate the locations of structures and critical facilities within the planning area. The information on structures is limited to those within Shannon County which have been addressed at this time.

Figure 13: Addressed Structures

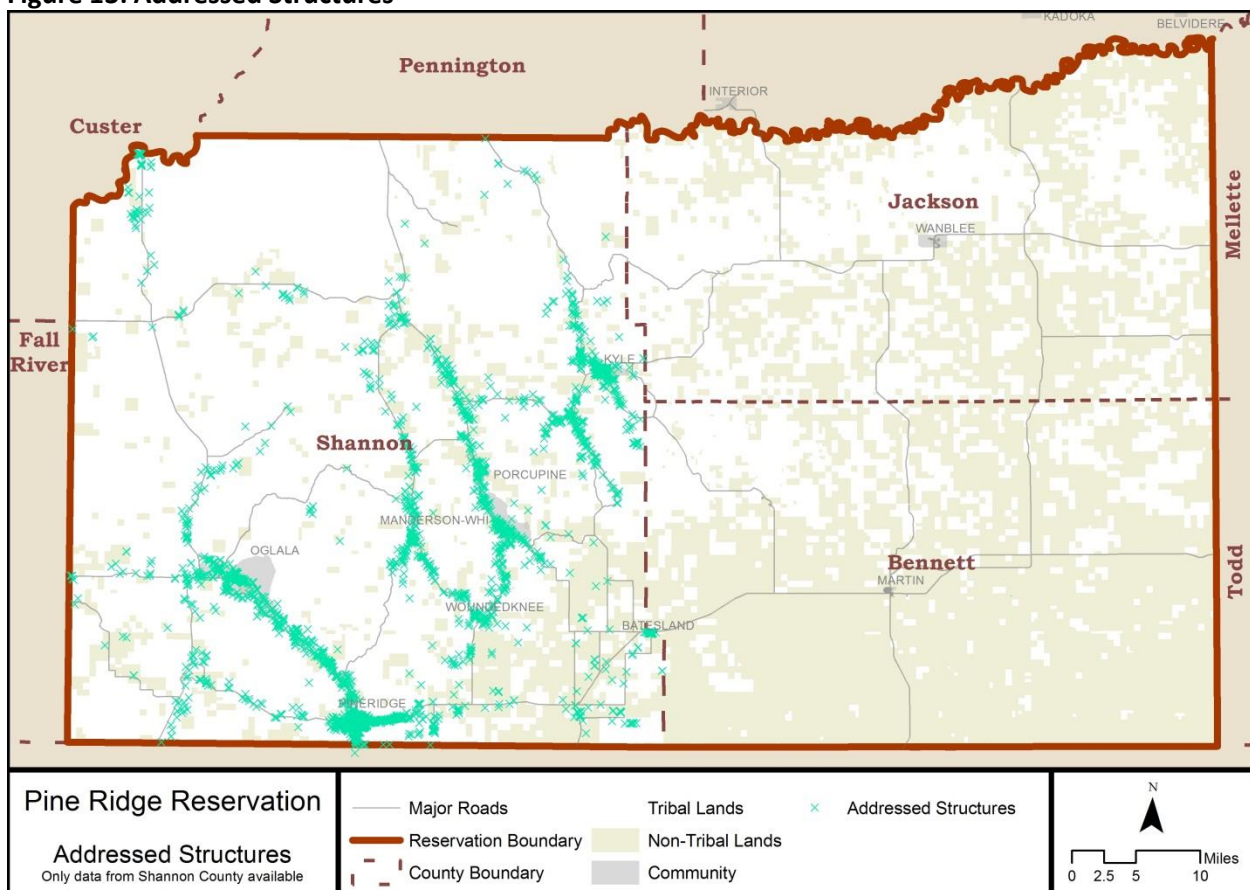


Table 25: Addressed Structures

City	Count
BATESLAND	225
BUFFALO GAP	43
CHADRON	14
HERMOSA	57
KYLE	656

MANDERSON	260
OGLALA	473
PINE RIDGE	1545
PORCUPINE	446
SCENIC	12
WHITE CLAY	1
WOUNDED KNEE	161
Grand Total	3893

Figure 14 and Table 26 illustrate the locations of structures and critical facilities maintained by OST.

Figure 14: Critical Facilities

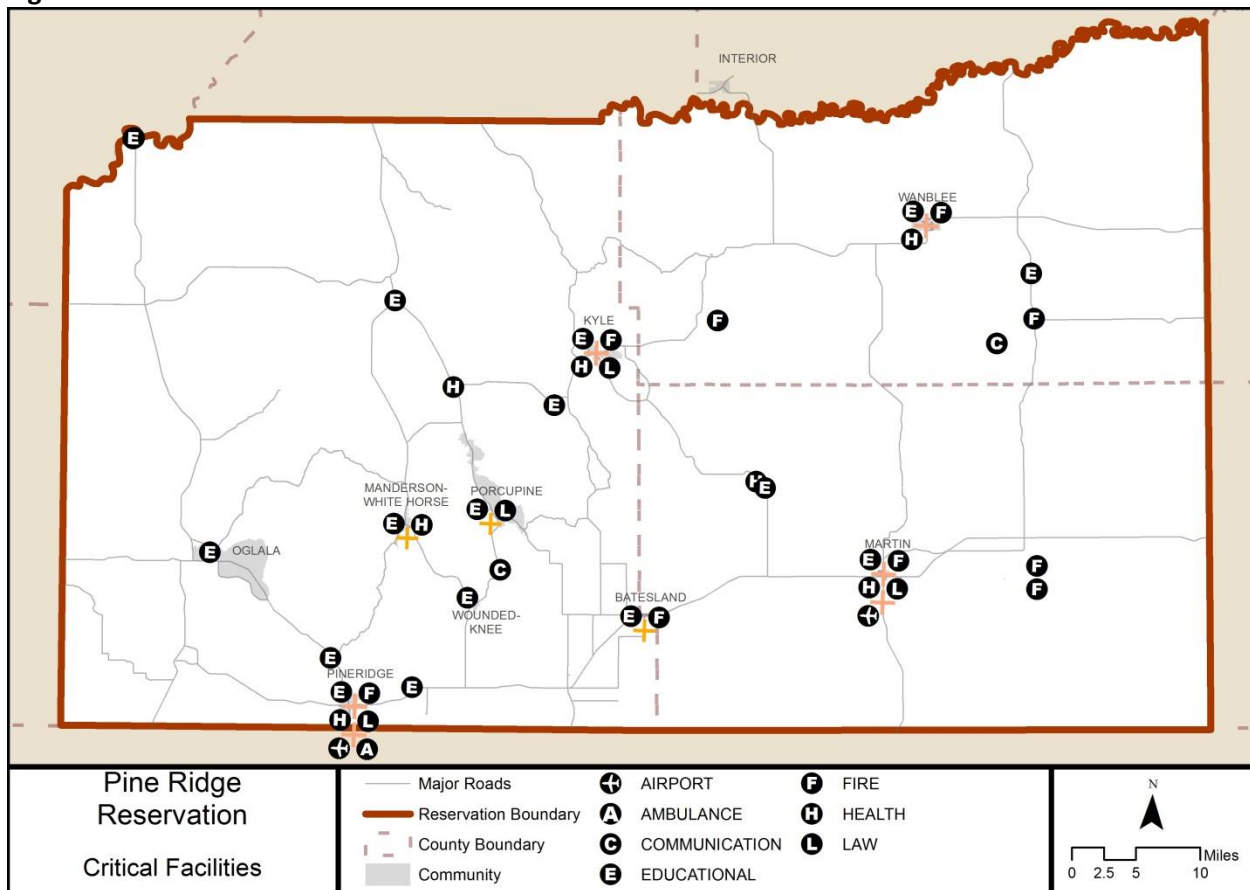


Table 26: Critical Facilities

Critical Facility	Type
AIRPORT	2
AMBULANCE	4
COMMUNICATION	2
EDUCATIONAL	30

FIRE	9
HEALTH	7
LAW	7
NURSING HOME	1
WASTEWATER	2
Grand Total	64

Pine Ridge Reservation Districts

All of the districts on the Pine Ridge Reservation have similar infrastructures. The dominant structures are schools, community buildings, stores, tribal offices and churches. All Reservation communities have scattered residential areas with a mixture of frame and mobile units. Much more information is available for Pine Ridge than the other districts, due to the larger population concentration.

Pine Ridge

The Pine Ridge district is the largest population district and includes the largest community on the Pine Ridge Reservation, the Pine Ridge Village. The Pine Ridge Village includes:

- The Tribal Administration Headquarters and associated office buildings.
- The Bureau of Indian Affairs Agency Building.
- The Indian Health Service Hospital and Administration Buildings.
- The Pine Ridge School (K-12).
- The Oglala Lakota College.
- The Pine Ridge Justice Center and Corrections Facility.
- The Pine Ridge Boys and Girls Club.
- SD State Social Services Office.
- OST Rural Water Administrative Offices.
- Multiple businesses and vendors.
- Several churches and cemeteries.
- The largest residential area.
- Billy Mills Hall

The permanent population of the Pine Ridge Village community is estimated at 5,271. Pine Ridge Village is the hub for most Tribal business and shipping on the Reservation and has approximately 1,200 workers moving in and out of the community.

The Pine Ridge community infrastructure is the oldest on the Pine Ridge Reservation. There are many historical buildings that are over 100 years old.

Figure 15: Addressed Structures – Pine Ridge Village

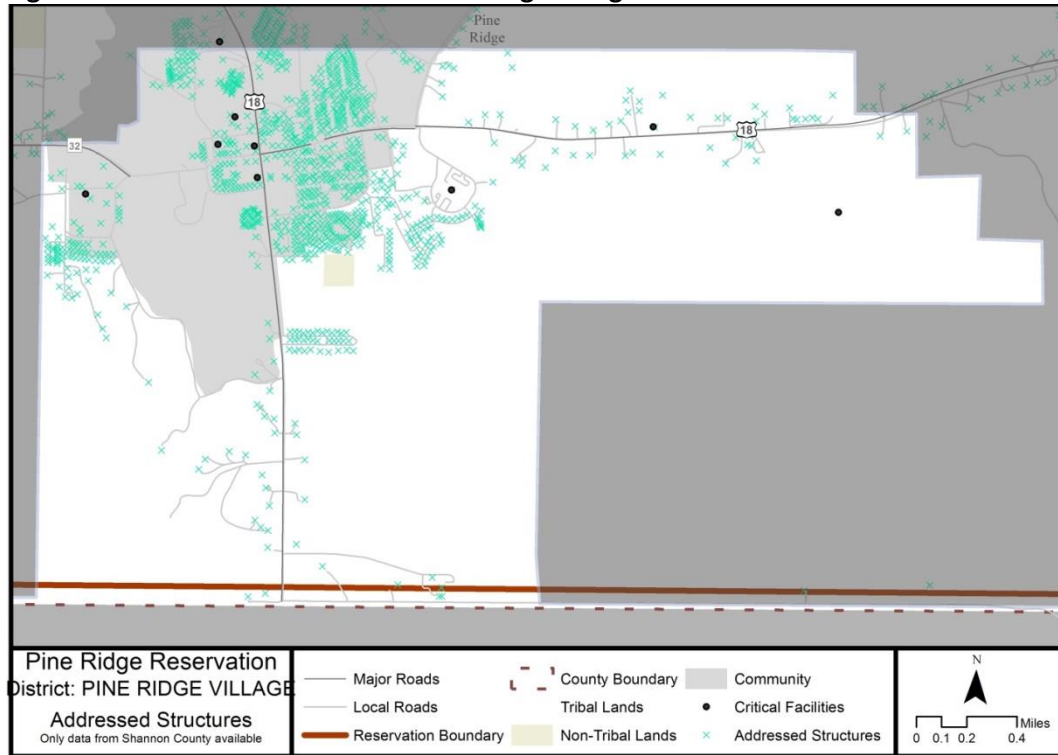
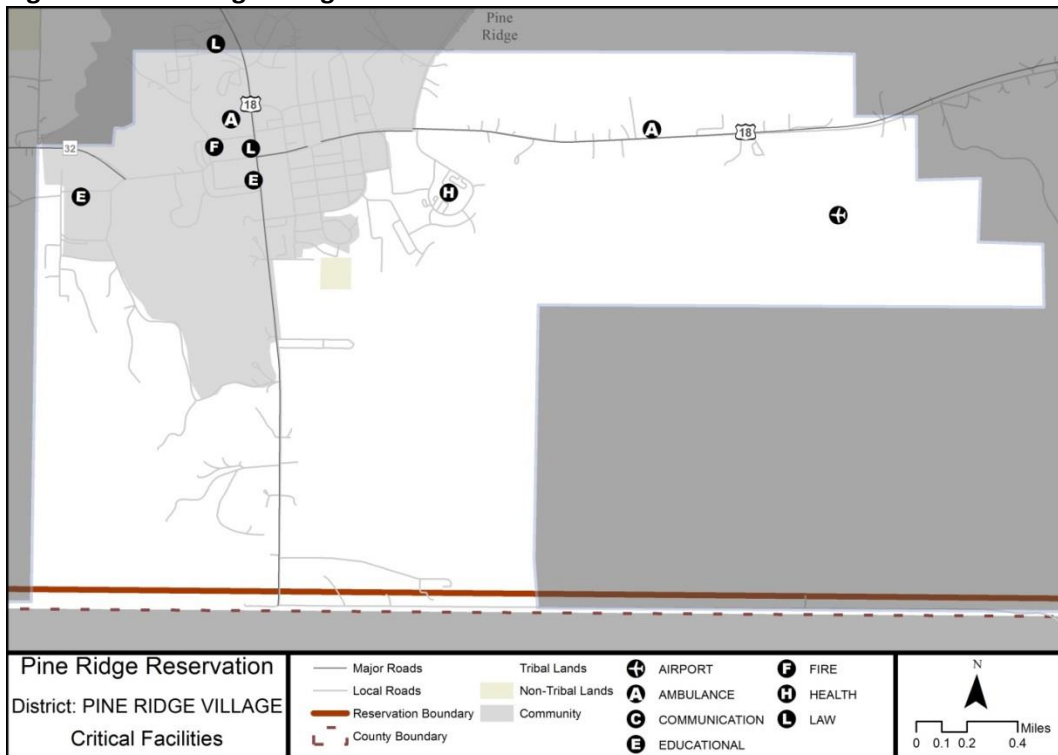
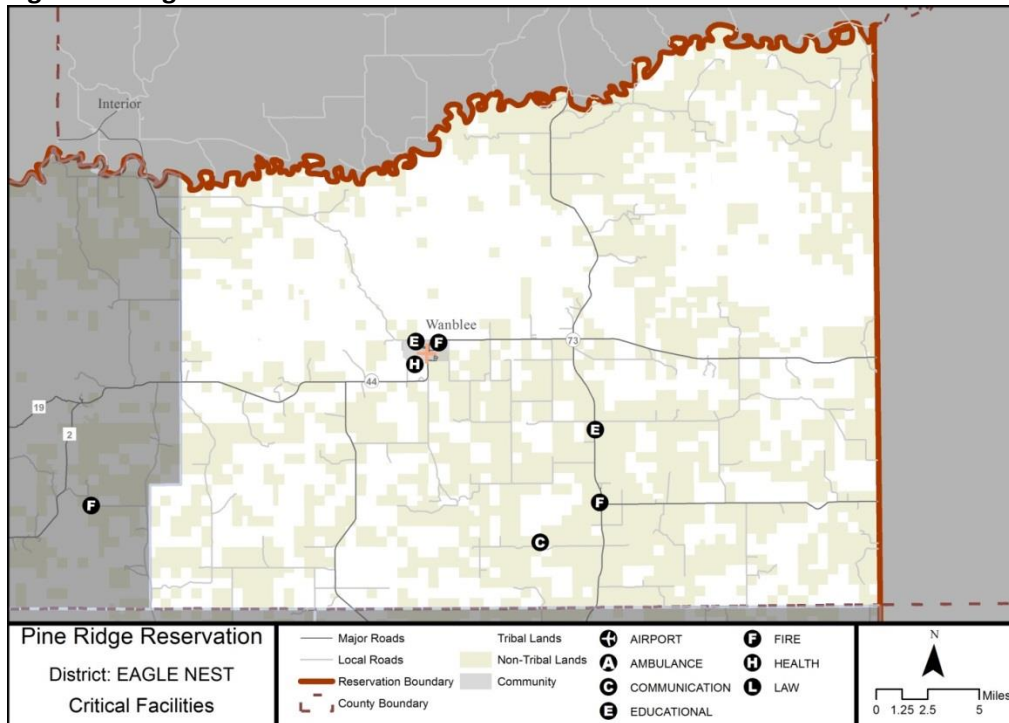


Figure 16: Pine Ridge Village – Critical Facilities



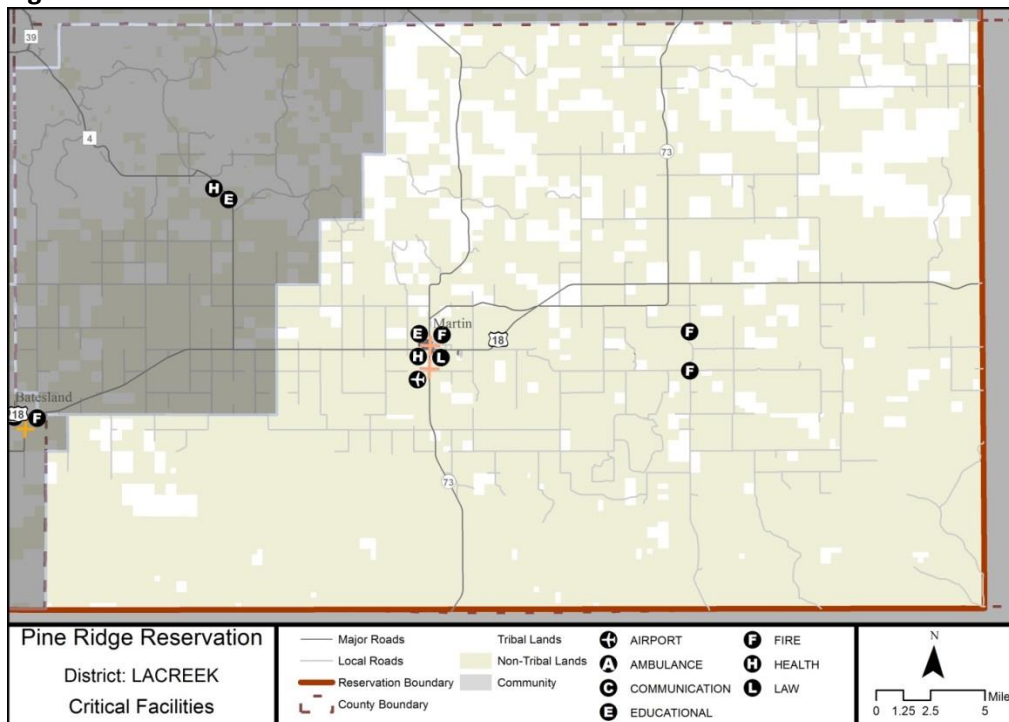
Eagle Nest

Figure 17: Eagle Nest – Critical Facilities



La Creek

Figure 18: La Creek – Critical Facilities



Medicine Root

Figure 19: Assessed Structures – Medicine Root

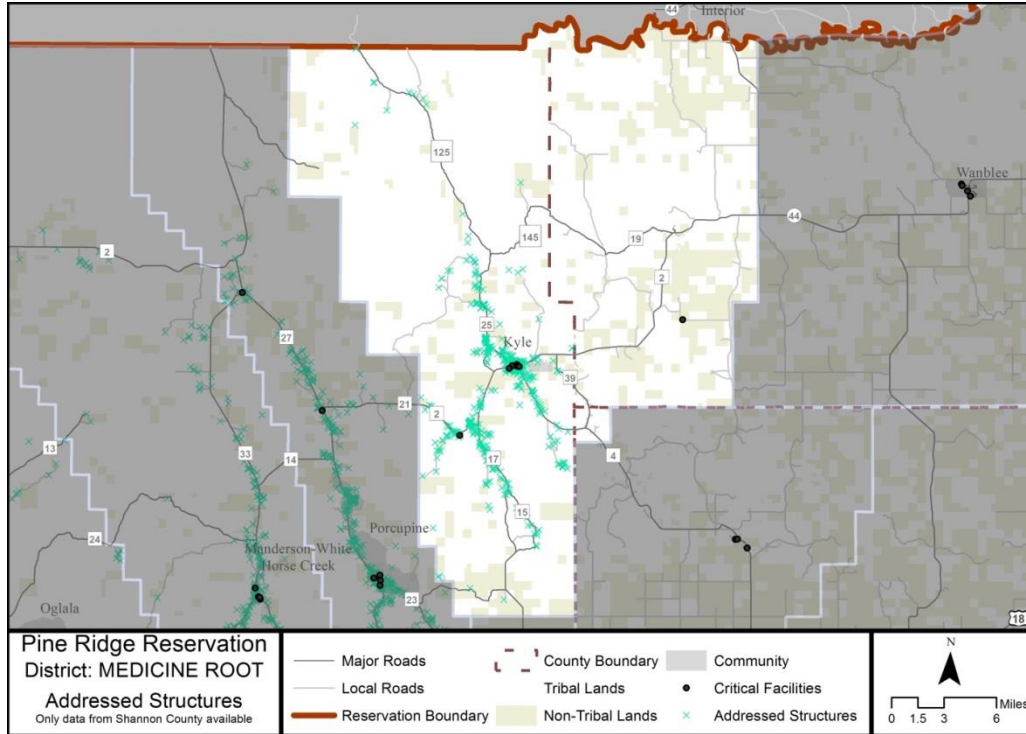
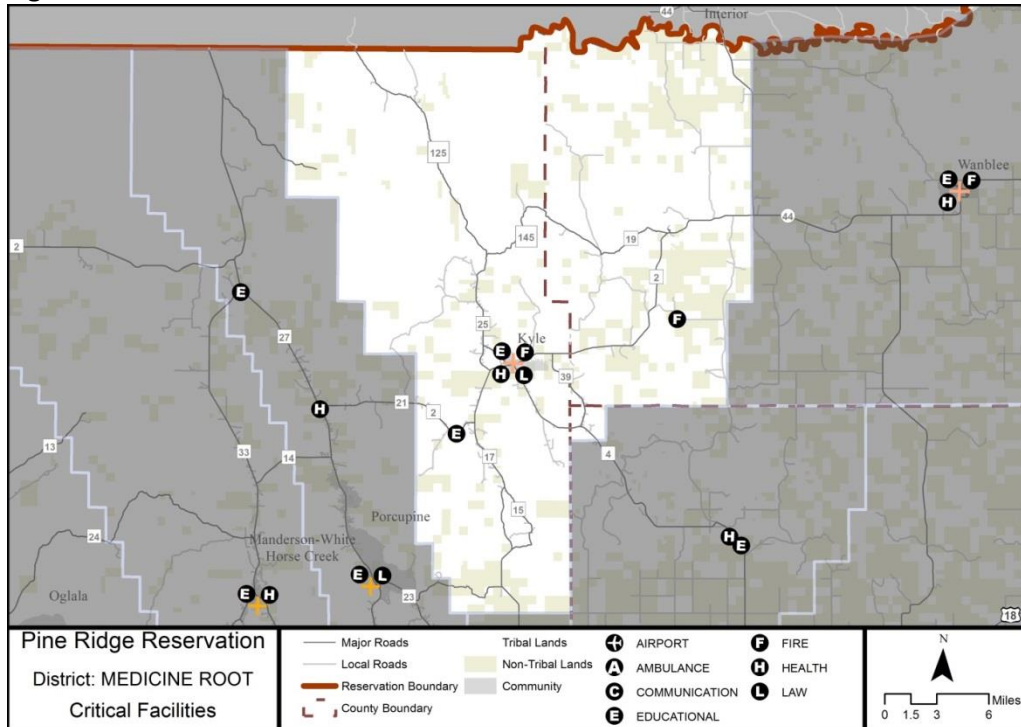
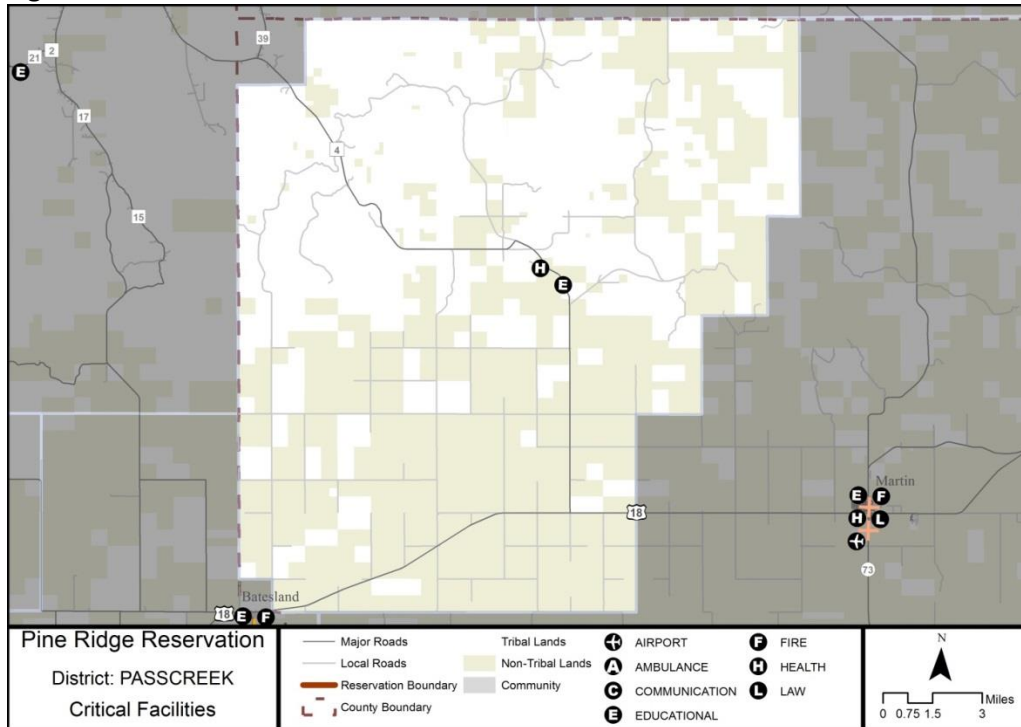


Figure 20: Medicine Root – Critical Facilities



Pass Creek

Figure 21: Pass Creek – Critical Facilities



Porcupine

Figure 22: Assessed Structures - Porcupine

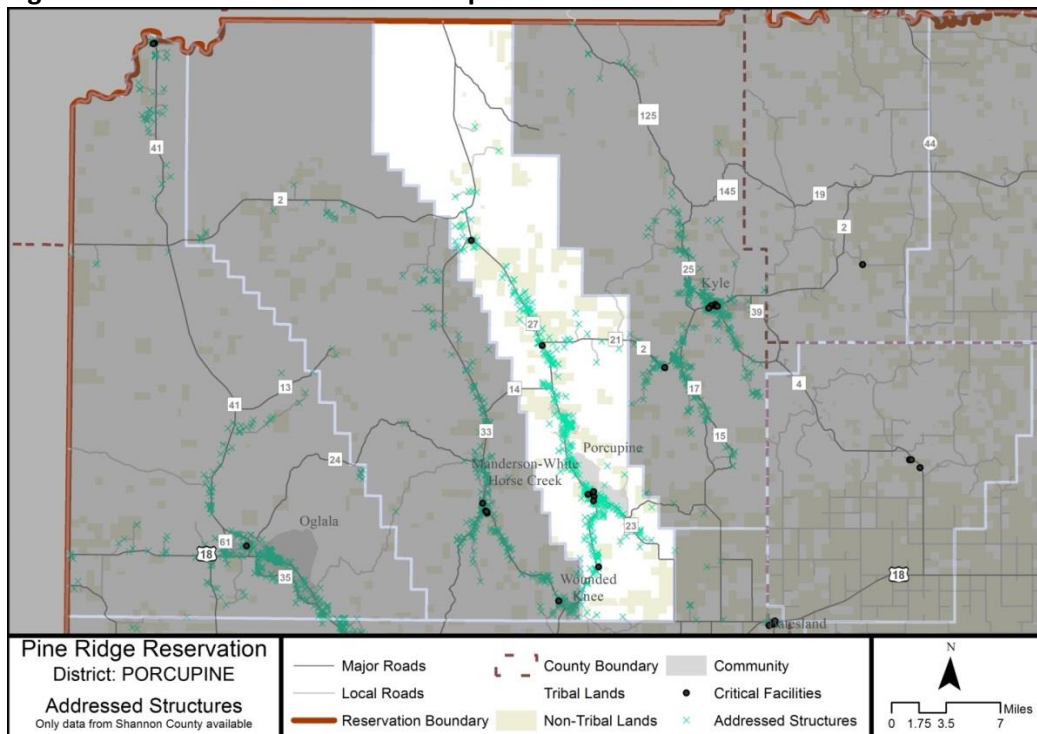
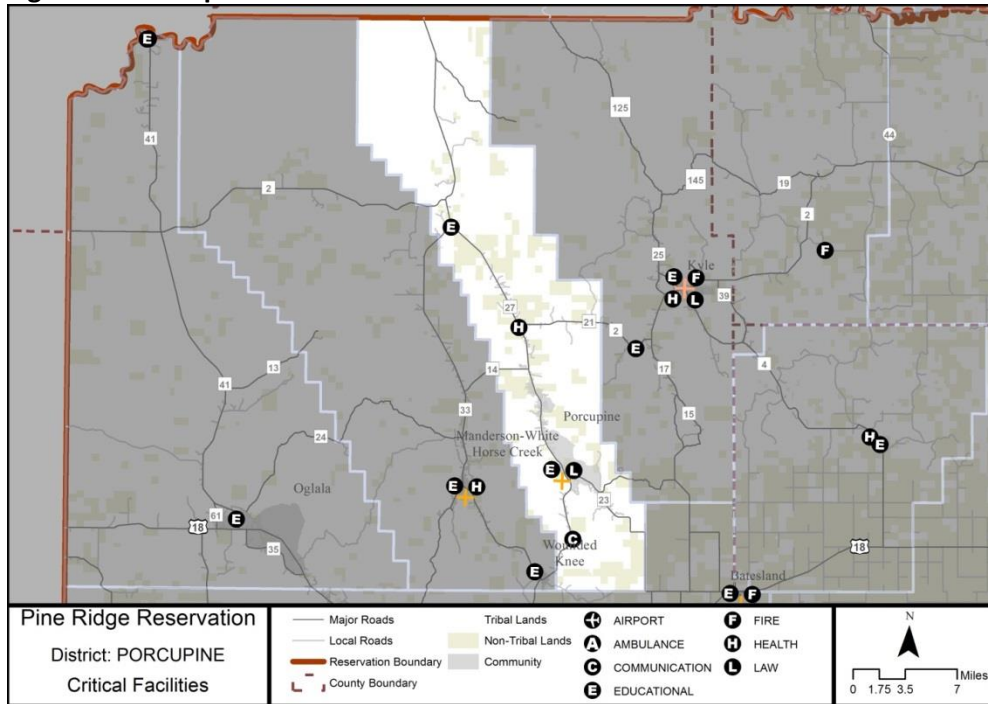


Figure 23: Porcupine – Critical Facilities



Wakpamni

Figure 24: Addressed Structures - Wakpamni

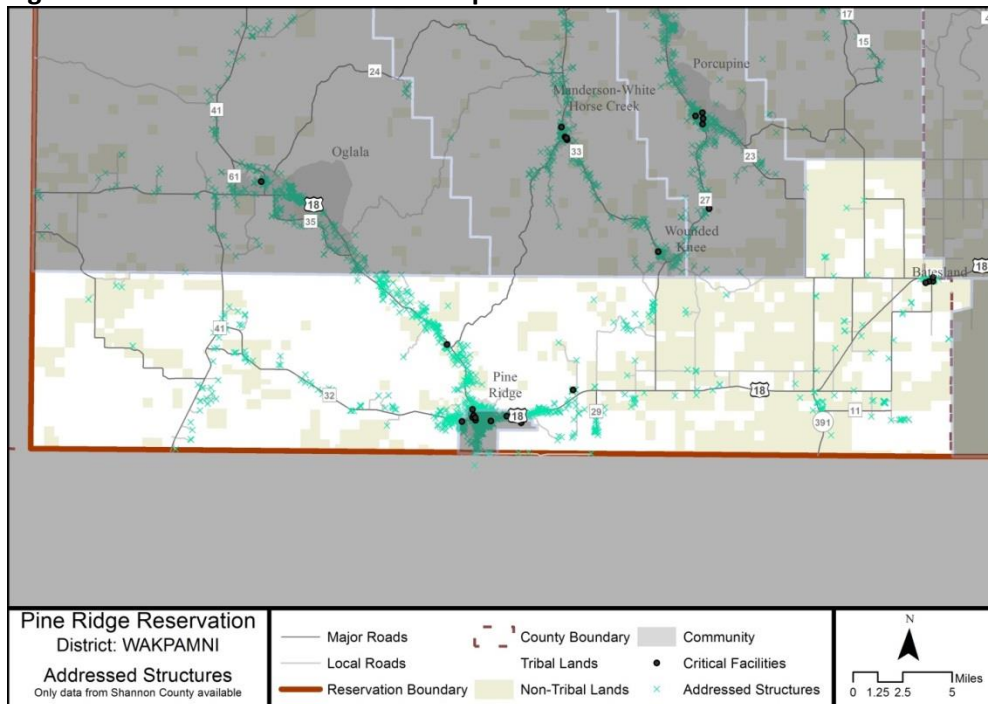
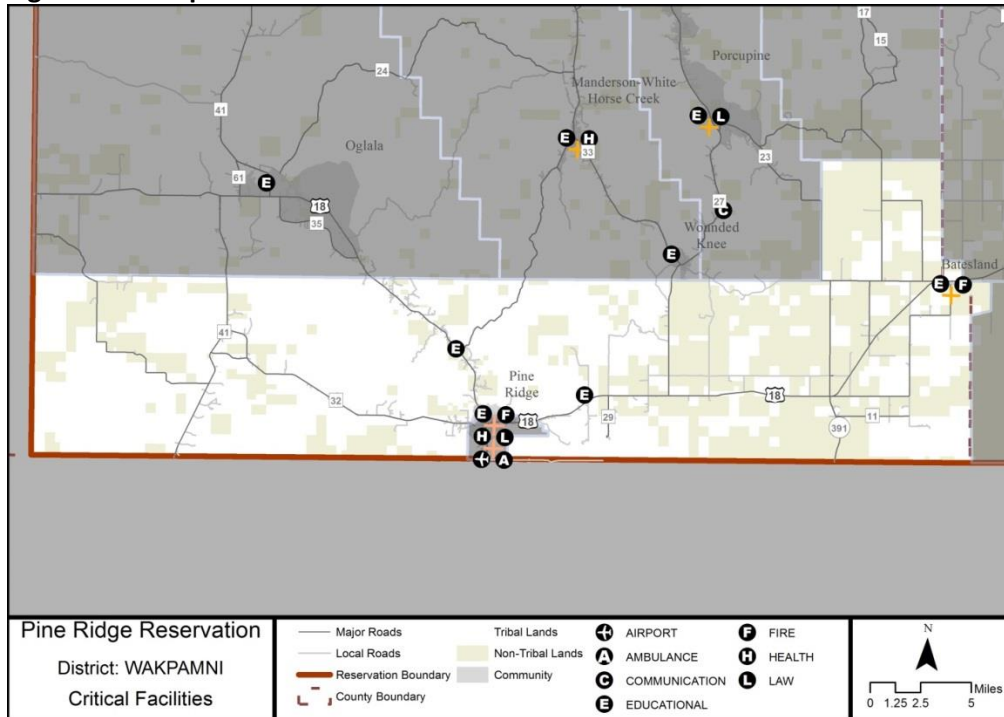


Figure 25: Wakpamni – Critical Facilities



White Clay

Figure 26: Addressed Structures - White Clay

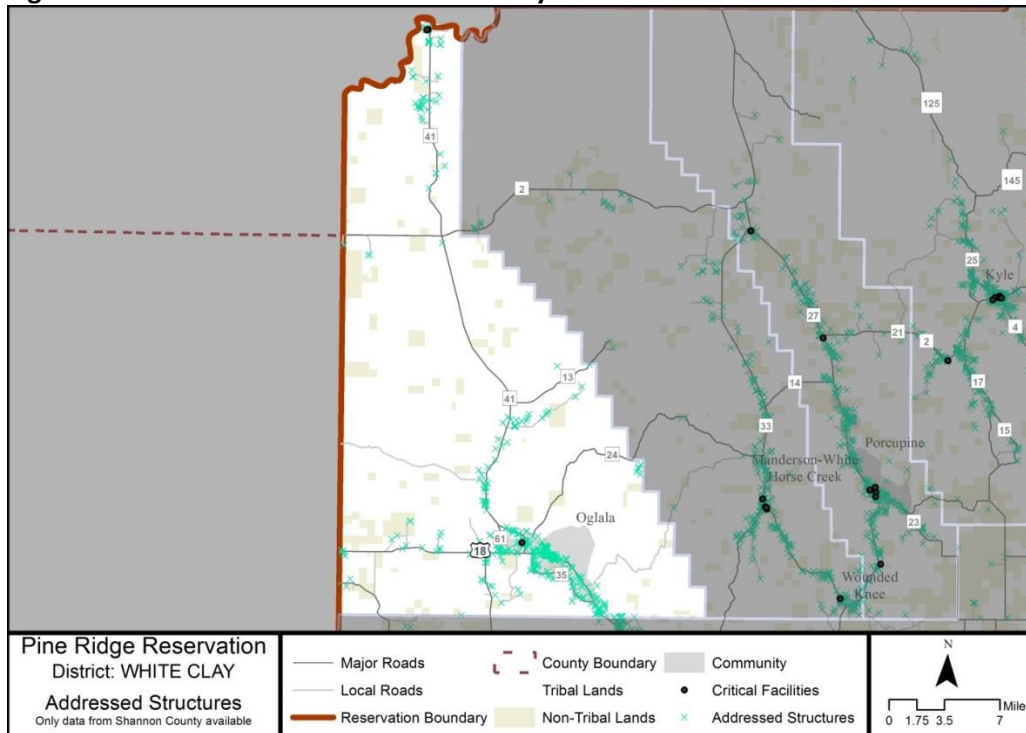
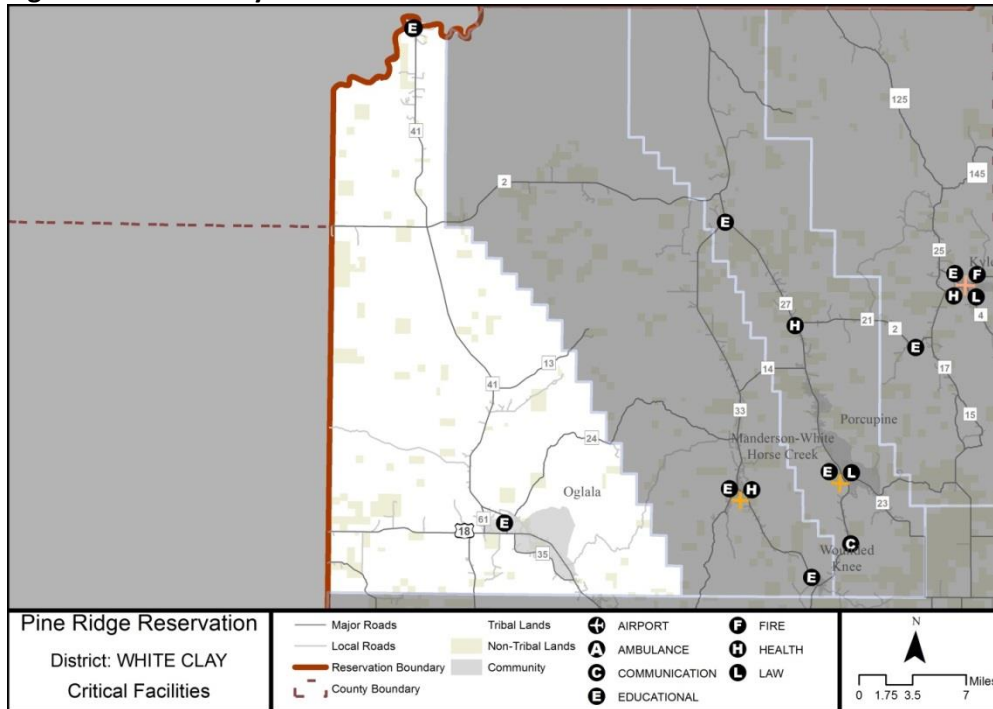


Figure 27: White Clay – Critical Facilities



Wounded Knee

Figure 28: Assessed Structures – Wounded Knee

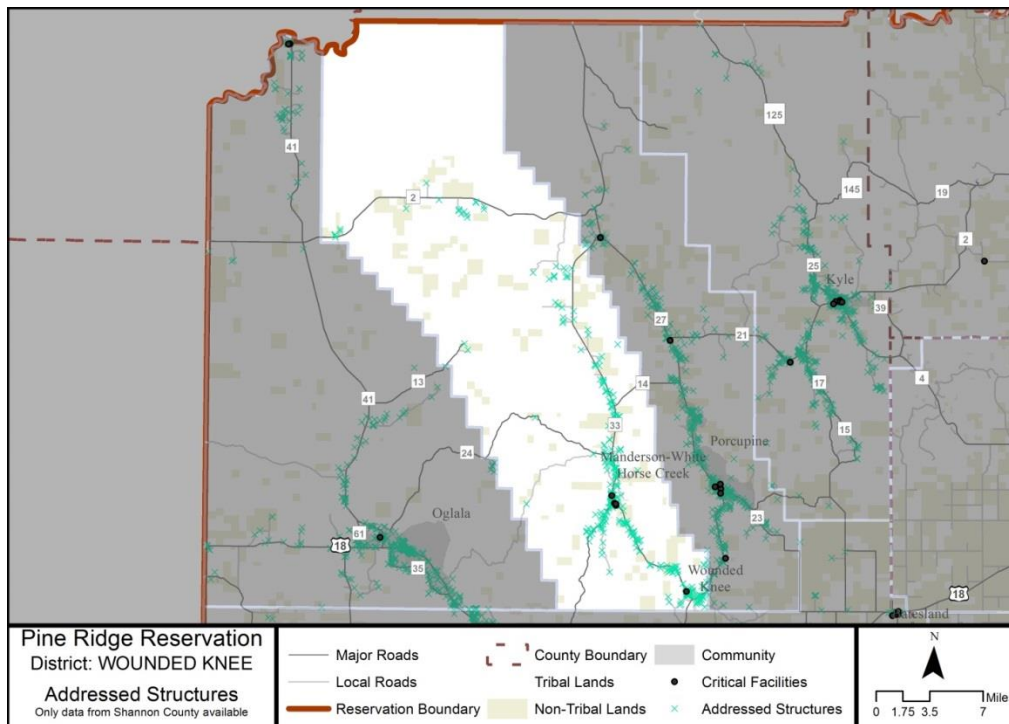
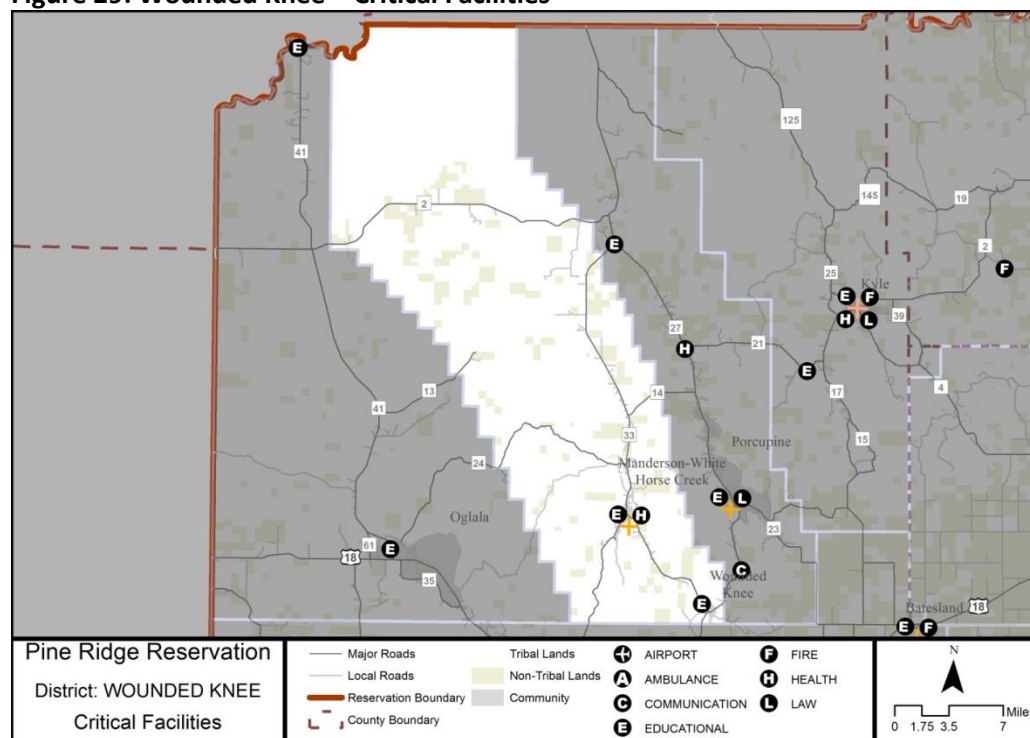


Figure 29: Wounded Knee – Critical Facilities



Shannon County Jurisdictions

Batesland

Batesland is the 7th most populated community in Shannon County, with 108 residents in 2010. It is located along Highway 18 in the southeastern portion of the county.

Table 27: Batesland – Facilities

Facility Name	Address	Facility Type	Size of Bldg.
City of Batesland			
Public Works Dept	Batesland	City	NA
Public Works Quonset	Batesland	City	NA
County Highway Shop	Batesland	City	NA
Batesland Fire Station	Batesland	City	NA
Batesland City Hall	Batesland	City	NA
Shannon County Schools		City	

Section 4: Hazard Profiles, Risk Assessment and Vulnerability Analysis

Overview

The entire planning area is at risk from communicable disease, dam failure, drought, hazardous materials incidents, flooding, shallow landslide, urban fires, shortage of critical materials, summer storms, tornadoes, transportation accidents, winter storms, and wildfires. Shannon County will additionally address civil disorder, nuclear accidents, and terrorism.

This plan serves as an update to the 2003 Fall River and Shannon County Multi-Hazard Pre-Disaster Mitigation Plan which looked at the following hazards: drought, flooding, hailstorm, tornado, winter storm, windstorm, hazardous materials incident, ground transportation incident, urban fire, nuclear attack and civil disorder. All of these hazards are considered within this update.

The South Dakota 2014 Hazard Mitigation Plan identifies Shannon, Bennett, and Jackson counties amongst the most vulnerable in the state. The planning area has received the following Presidential Declarations:

Table 28: Presidential Disaster Declarations for Shannon County

Disaster Declaration Number	Declaration Date	Disaster Type	Individual Assistance Counties	Public Assistance Counties
DR-4155	November 8, 2013	Severe Winter Storm, Snowstorm, And Flooding	--	Shannon
DR-4115	May 10, 2013	Severe Winter Storm And Snowstorm	--	Shannon
DR-1886	March 9, 2010	Severe winter storm and snowstorm	--	Shannon
DR-1811	December 12, 2008	Severe winter storm and record and near record snow	--	Shannon
DR-3234	September 10, 2005	Hurricane Katrina evacuation	--	Shannon
DR-1330	May 19, 2000	Severe winter storm, flooding, landslides and mudslides	--	Shannon
DR-1280	June 9, 1999	Severe storms, tornadoes and flooding	Shannon	Shannon
DR-1173	April 7, 1997	Severe flooding, sever winter storms, heavy rains high winds	Shannon	Shannon
DR-1156	January 10, 1997	Severe winter storms and blizzard conditions	--	Shannon
DR-3015	June 17, 1976	Drought	--	Shannon

Source: Federal Emergency Management Agency

Table 29: Presidential Disaster Declarations for Jackson County

Disaster Declaration Number	Declaration Date	Disaster Type	Individual Assistance Counties	Public Assistance Counties
DR-4155	November 8, 2013	Severe winter storm, snowstorm, and flooding	--	Jackson
DR-1984	May 13, 2011	Flooding	--	Jackson
DR-1811	December 12, 2008	Severe winter storm and record and near record snow	--	Jackson
DR-1774	July 9, 2008	Severe storms and flooding	--	Jackson
DR-1759	May 22, 2008	Severe winter storm and record and near record snow	--	Jackson

DR-1702	May 22, 2007	Severe storms, tornadoes, and flooding	Jackson	Jackson
DR-1647	June 5, 2006	Severe winter storm	--	Jackson
DR-3234	September 10, 2005	Hurricane Katrina evacuation	--	Jackson
DR-1531	July 20, 2004	Severe storms and flooding	--	Jackson
DR-1330	May 19, 2000	Severe winter storm, flooding, landslides and mudslides	--	Jackson
DR-1173	April 7, 1997	Severe flooding, severe winter storms, heavy rains high winds	Jackson	Jackson
DR-1156	January 10, 1997	Severe winter storms and blizzard conditions	--	Jackson
DR-3015	June 17, 1976	Drought	--	Jackson

Source: Federal Emergency Management Agency

Table 30: Presidential Disaster Declarations for Bennett County

Disaster Declaration Number	Declaration Date	Disaster Type	Individual Assistance Counties	Public Assistance Counties
DR-4125	June 28, 2013	Severe storms, tornado, and flooding	--	Bennett
DR-1811	December 12, 2008	Severe winter storm and record and near record snow	--	Bennett
DR-1759	May 22, 2008	Severe winter storm and record and near record snow	--	Bennett
DR-1647	June 5, 2006	Severe winter storm	--	Bennett
DR-3234	September 10, 2005	Hurricane Katrina evacuation	--	Bennett
DR-1173	April 7, 1997	Severe flooding, severe winter storms, heavy rains high winds	Bennett	Bennett
DR-1156	January 10, 1997	Severe winter storms and blizzard conditions	--	Bennett
DR-3015	June 17, 1976	Drought	--	Bennett

Source: Federal Emergency Management Agency

Table 31: Fire Management Assistance Declarations for Shannon County

Disaster Declaration Number	Declaration Date	Disaster Type	Individual Assistance Counties	Public Assistance Counties
FEMA-5010-FM	September 1, 2012	Wellnitz Fire	--	--

Hazard Profiles

Communicable Disease

The Center for Disease Control (CDC) defines communicable disease as, “illnesses due to infectious agents or their toxic products, which may be transmitted from a reservoir to a susceptible host either directly as from an infected person or animal or indirectly through the agency of an intermediate plant or animal host, vector, or the inanimate environment.

The South Dakota Department of Health tracks multiple communicable disease threats, including:

- Campylobacteriosis

- Chlamydia
- Cryptosporidiosis
- Shiga toxin-producing E. coli
- Giardiasis
- Gonorrhea
- Hepatitis B, Chronic
- HIV/AIDS
- Hepatitis C, Chronic
- Methicillin-resistant Staphylococcus aureus, invasive (MRSA)
- Pertussis
- Q fever
- Salmonellosis
- Tuberculosis
- Varicella
- West Nile Disease

Bioterrorism can also involve communicable diseases. The CDC has identified high priority biological agents that have the potential for major public health impact. These include:

- Anthrax (*Bacillus anthracis*)
- Botulism (*Clostridium botulinum* toxin)
- Plague (*Yersinia pestis*)
- Smallpox (variola major)
- Tularemia (*Francisella tularensis*)
- Viral hemorrhagic fevers (filoviruses [e.g., Ebola, Marburg] and arenaviruses [e.g., Lassa, Machupo])

Communicable diseases are typically spread through direct contact. The following are three of the most common ways of direct contact transmission:

- **Person to person.** This involves direct transfer of bacteria, viruses or other germs from person to person. This may involve blood transfusion, coughing, kissing, sexual contact, touching etc.
- **Animal to person.** Infected animals can transfer communicable diseases to humans via biting and scratching. Coming in contact with an infected animal's waste may also transmit diseases.
- **Mother to fetus.** Infected pregnant women can pass bacteria, germs, and viruses through the placenta, such as AIDS. Bacteria, germs and viruses can also be spread during labor, such as with group B streptococcus.

Communicable diseases are also transmitted indirectly, such as touching a germ infected door handle. Other ways that communicable diseases are spread is through particle transmission through the air (such as tuberculosis or SARS), through bites and stings from insects (such as West Nile Virus or Lyme Disease), and through food contamination (such as E. Coli).

Historical Occurrences

South Dakota has had few communicable disease pandemics. The most severe event occurred during the 1918 flu epidemic, also known as the Spanish Flu, which caused 28 percent of the total number of deaths (6,728) in South Dakota for that year.

In South Dakota, communicable disease statistics are collected by South Dakota Department of Health at the county level. The planning area, which includes Shannon County, Bennett County, and Jackson County, is used as a proxy for the entire Pine Ridge Indian Reservation. The following tables illustrate the prevalence of select communicable diseases in Shannon County and the planning area from 2009 to 2012.

Table 32: Number of Communicable Diseases Cases, 2009-2012

Disease	Shannon	Planning Area
Campylobacteriosis	6	30
Chlamydia	1200	1354
Cryptosporidiosis	0	0
Giardiasis	12	18
Gonorrhea	382	422
Hepatitis B, Chronic	3	3
Hepatitis C, Chronic	48	60
Methicillin-resistant Staphylococcus Aureus, invasive (MRSA)	25	37
Pertussis	0	0
Q fever	13	13
Salmonellosis	6	6
Shiga toxin-producing E. coli	0	3
Tuberculosis	9	15
Varicella	3	6
West Nile Disease	0	3
Total	1707	1970

Source: South Dakota Department of Health

Table 33: Cumulative HIV/AIDS Cases by County, 1985-2012

Time Span	Shannon	Planning Area
1985-2012	20	20-30
1985-2011	17	17-27
1985-2010	17	17-27
1985-2009	15	15-25

Source: South Dakota Department of Health

Table 34: South Dakota Influenza Cases, 2009-2013

Year	Number of Cases	Number of Influenza Associated Hospitalization	Number of Influenza Associated Deaths
(2009-2010)	2,302	430	24
(2010-2011)	860	290	20

(2011-2012)	505	164	17
(2012-2013)	993	365	38

Source: South Dakota Department of Health

Collectively, these tables indicate the prevalence of communicable diseases within the planning area. From 2009 to 2013, Chlamydia and Gonorrhea, both Sexually Transmitted Diseases (STDs) were the most common communicable disease. These outbreaks are typically handled by local hospitals and the state's department of health.

Probability of Occurrence

Of the communicable diseases that the South Dakota Department of Health routinely tracks, the five most common events to occur in the planning area are:

- 1) Chlamydia
- 2) Influenza
- 3) Gonorrhea
- 4) Hepatitis C
- 5) Methicillin-resistant Staphylococcus Aureus, invasive (MRSA)

The following table indicates the rate of occurrence for the planning area(s), the state of South Dakota, and the country.

Table 35: Incidence Rates (per 100,000 persons) of Communicable Diseases, 2009-2012

Disease	Shannon	Planning Area Average	South Dakota
Campylobacteriosis*	11.06	51.26	35.75
Chlamydia	2186.01	845.43	413.3
Cryptosporidiosis	0.00	0.00	15.375
Giardiasis*	21.92	17.85	14.325
Gonorrhea	696.40	249.14	64.675
Hepatitis B, Chronic	5.54	1.38	5.9
Hepatitis C, Chronic	87.38	44.18	45.225
Methicillin-resistant Staphylococcus Aureus, invasive (MRSA)*	45.63	35.42	11.25
Pertussis	0.00	0.00	5.925
Q fever	23.35	5.84	0.8
Salmonellosis	11.06	2.76	21.875
Shiga toxin-producing E. coli*	0.00	5.46	5.925
Tuberculosis*	16.40	15.02	2.025
Varicella*	5.52	6.84	0.8
West Nile Disease*	0.00	5.50	6.525

Source: South Dakota Department of Health,

Note: *To safeguard privacy, infectious diseases with under 4 cases are reported as “≤ 3”. The incidence rates above assume that for these events, three cases occurred. This assumption may inflate the designated diseases’ rate artificially.

This table indicates the planning area has extraordinary high incidence rates for Chlamydia and Gonorrhea. The assumption (see note above) does not negate this statement. Based on these calculated incidence rates, the populations within the planning area may have a disproportionately high probability of contracting Chlamydia and Gonorrhea.

Combining influenza data with communicable disease data, 1,409 cases were reported for the four year time period between 2009 and 2012. This suggests an annual recurrence interval of 1,409. This suggests that approximately 1,409 cases of communicable disease will occur within the planning area annually.

Extent

Within the planning area, the entire population is subject to communicable diseases. Locations with higher population density may be exposed to higher numbers of the aforementioned diseases than less dense areas. However, rural areas are more conducive to communicable diseases such as Lyme disease. The State Hazard Mitigation plan also lists livestock diseases which can be spread from animals to humans.

Vulnerability

While communicable diseases affect all populations, certain groups are more likely to contract certain diseases. The following table indicates the age range for communicable disease cases in South Dakota:

Table 36: New Communicable Disease Cases by Age Group, 2009-2012

Disease	Age Range						
	<1	1- 4	5-14	15-24	25-39	40-64	65+
Campylobacteriosis	34	165	148	195	246	279	103
Chlamydia	1	0	151	9646	3471	249	5
Cryptosporidiosis	8	98	93	63	96	84	62
Giardiasis	7	119	76	33	105	98	30
Gonorrhea	0	0	20	1197	792	107	3
Hepatitis B, Chronic	0	1	7	36	77	68	14
Hepatitis C, Chronic	0	2	1	78	367	972	63
Methicillin-resistant Staphylococcus Aureus, invasive (MRSA)	3	5	10	7	28	139	177
Pertussis	38	25	55	27	17	23	9
Q fever*	0	0	0	0	2	9	2
Salmonellosis	41	75	127	88	128	177	78
Shiga toxin-producing E. coli	11	48	47	29	20	27	12

Tuberculosis	1	3	3	9	15	24	12
Varicella	14	45	111	34	9	0	0
West Nile Disease	0	0	9	16	54	111	55

*Q fever only represents data from 2009 & 2010

Source: South Dakota Department of Health

This table indicates that of the communicable diseases reported, infants aged less than 1 are most afflicted by Campylobacteriosis, Pertussis and Salmonellosis. Children ages 1 to 4 are most afflicted by Campylobacteriosis and Giardiasis. Children aged 5 to 15 are most afflicted by Chlamydia, Campylobacteriosis, and Salmonellosis. People aged 15 to 24 are most afflicted by Sexually Transmitted Diseases (STDs), such as Chlamydia and Gonorrhea. Adults aged 25 to 39 are most afflicted by Chlamydia, Gonorrhea and Chronic Hepatitis C. People aged 65 and older are most afflicted by MRSA.

A 2012 report issued by the United States Attorney's Office recognizes the prevalence of sex trafficking in the planning area. The presence of sex trafficking in the planning area increases the population's vulnerability to sexually transmitted diseases.

A 2013 report released by Trust for America's Health (TFAH) and the Robert Wood Johnson Foundation (RWJF) indicates how the capabilities of the state of South Dakota fare in protecting their residents against communicable disease threats, which may influence the population's vulnerability to communicable disease. Positive highlights of this report for South Dakota are that they require the HPV vaccine for teens; they vaccinated 50% of the populations during the 2012-2013 flu season, and has quality state public health labs. Negative highlights include the state's failure to address climate change component of public health, it does not cover routine HIV Medicaid screening, decreased funding for public health from the previous fiscal year, and others.

Future development in the planning area may increase the level of vulnerability to communicable diseases.

Dam Failure

A dam is defined as a barrier constructed across a watercourse for the purpose of storage, control, or diversion of water. Dams are typically constructed of earth, rock, concrete, or mine tailings. Dam failure is the uncontrolled release of impounded water resulting in downstream flooding, affecting both life and property. Dam failure can be caused by any of the following: flooding; earthquakes; flow blockages; landslides; lack of maintenance; improper operation; poor construction; vandalism; or terrorism. South Dakota dam safety statutes are contained in the South Dakota Codified Laws (SDCL) Chapter 46-7, enacted in 1955 and last amended in 1996. Dam safety regulations are in Administrative Rules of South Dakota (ARSD) Chapter 74:02:08, which became effective in 1986 and were last amended in 1992.

The term *dam* is defined in ARSD 74:02:08:01 (7) as "an artificial or manmade barrier that is 25 feet or more in height or that may store more than 50 acre-feet of water". A barrier is not considered a dam if the height does not exceed 6 feet regardless of storage capacity, or if the storage capacity at maximum storage elevation does not exceed 15 acre-feet regardless of height. The term *height* is defined in the same section as "the difference in the elevation of either the natural bed of the stream or watercourse or the lowest point on the toe of the dam, whichever is lower, and the crest elevation of the dam.

Dams are classified according to hazard potential and size:

Table 37: Hazard Potential

Category	Loss of Life Potential	Economic Loss Potential
3	none expected	minimal
2	none expected	appreciable
1	potential loss	extensive

Table 38: Size Classification

Size	Storage Capacity (acre-feet)	Height (feet)
Small	50 - 1000	25 - 40
Intermediate	1001 - 50,000	41 - 100
Large	greater than 50,000	greater than 100

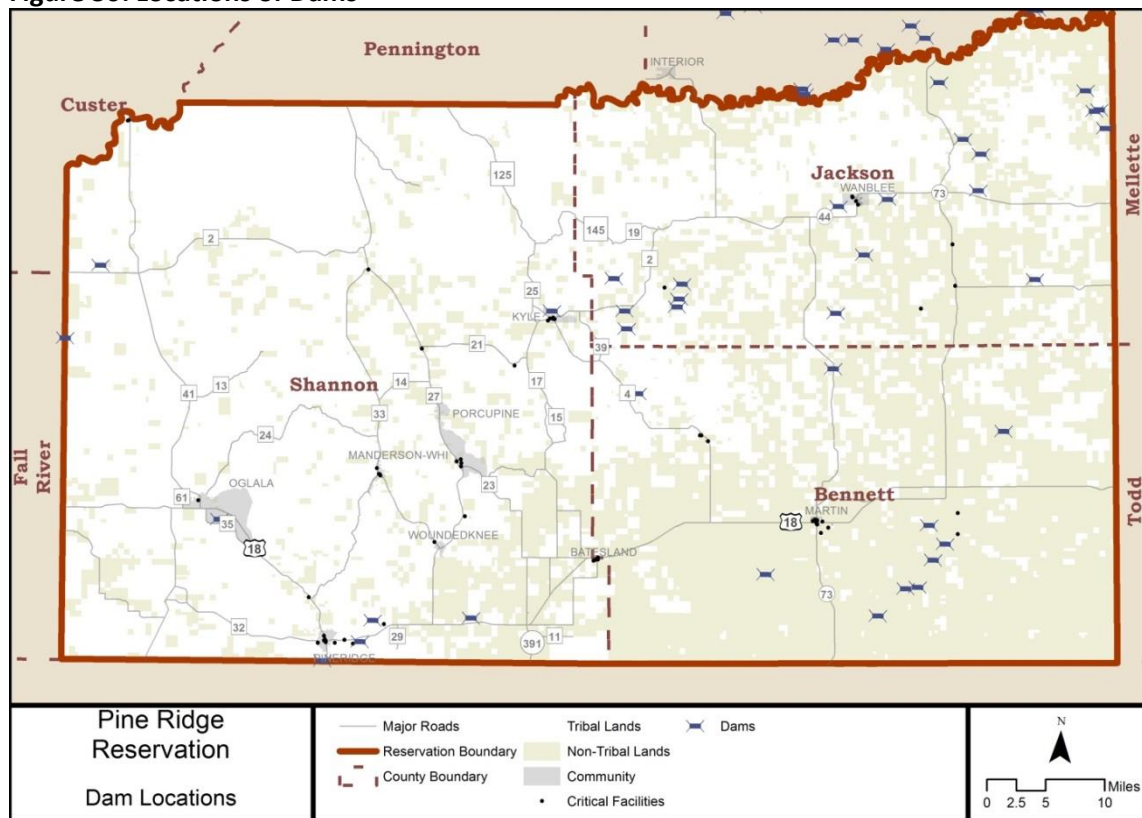
The Chief Engineer of the SD Water Rights Program has the statutory authority to review and approve or disapprove plans to construct, alter, maintain or repair dams. The Water Management Board is responsible for the promulgation of rules to establish minimum safety standards for the design, construction, alteration, maintenance and repair of works.

ARSD 74:02:08:11 authorizes the Chief Engineer to inspect all category 1 dams at least once every 5 years or as often as necessary in order to ensure the continued safety of a dam. Section 46-7-3 of the statutes charges the owner of a dam with the responsibility of keeping the works "in good repair at all times" to ensure safety of the works. Additionally, the rules (section 74:02:08:04) require that periodic inspections, detailed investigations, and analysis of existing dams be performed by registered professional engineer. No requirements regarding the scheduling or frequency of such inspections are found in the statutes or rules.

Emergency procedures are addressed in SDCL 46-7-5.2. The Chief Engineer may immediately breach or repair any works if, in his judgment, it is necessary to protect human life from imminent danger. Emergency Preparedness Plans (Rules 74:02:08:09 & :10) are required to be prepared and submitted by the owners of all existing category 1 dams, and as part of the plans and specifications for proposed category 1 dams.

Figure 27 indicates the locations of dams in the planning area.

Figure 30: Locations of Dams



Historical Occurrences

There are no reported incidents of dam failure in the planning area.

The state hazard mitigation plan reports that although there have been multiple insignificant failures of low-hazard dams statewide, there have only been three high-hazard dam failures since 1972. These include:

- 1972 Canyon Lake Dam Failure (Rapid City)
- 1984 Menno Dam Failures (Hutchinson County)
- 2010 Rose Hill Dam Failure (Hand County)

Probability of Occurrence

Due to the lack of historical dam failures within the planning area, it is not possible to calculate the exact probability of dam failure. However, should a failure occur impacts would be expected to be minimal.

Extent

According to the South Dakota State Hazard Mitigation Plan, the planning area has two high hazard dams located in the planning area. Both are located in Shannon County. One is located outside of Oglala and the other is located outside of Pine Ridge. The largest dam by storage in the planning area is La

Creek Dam No.9 (14,331 acre-ft), located in Bennett County. The largest dam by height is Bradfield Diversion & Detention Dam (40 ft.), located in Jackson County.

Vulnerability

Structures, infrastructure, and population immediately downstream of dam locations are vulnerable to potential inundation from dam failure. In many ways the impacts of a dam failure may be similar to those which are discussed in the flooding section.

Future development in areas downstream of dams may increase the population's vulnerability to dam failure. Situating development outside of the immediate downstream vicinity of these dams would reduce vulnerability.

Drought

The National Drought Policy Commission Report defines drought as “a persistent and abnormal moisture deficiency having adverse impacts on vegetation, animals, or people”. Drought conditions can also be defined in terms of meteorological, hydrological, agricultural, and socioeconomic.

Meteorological drought is defined on the basis of the degree of dryness (in comparison to some —normal or average amount) and the duration of the dry period. A meteorological drought must be considered as region-specific since the atmospheric conditions that result in deficiencies of precipitation are highly variable from region to region.

Hydrological drought is associated with the effects of periods of precipitation (including snowfall) shortfalls on surface or subsurface water supply (i.e., stream flow, reservoir and lake levels, ground water). The frequency and severity of hydrological drought is often defined on a watershed or river basin scale. Although all droughts originate with a deficiency of precipitation, hydrologists are more concerned with how this deficiency plays out through the hydrologic system. Hydrological droughts are usually out of phase with or lag the occurrence of meteorological and agricultural droughts. It takes longer for precipitation deficiencies to show up in components of the hydrological system such as soil moisture, stream flow, and ground water and reservoir levels. As a result, these impacts are out of phase with impacts in other economic sectors.

Agricultural drought links various characteristics of meteorological (and hydrological) drought to agricultural impacts, focusing on precipitation shortages, differences between actual and potential evaporation, soil water deficits, reduced ground water or reservoir levels, and so forth. Plant water demand depends on prevailing weather conditions, biological characteristics of the specific plant, its stage of growth, and the physical and biological properties of the soil. Deficient topsoil moisture at planting may hinder germination, leading to low plant populations per hectare and a reduction of final yield. However, if topsoil moisture is sufficient for early growth requirements, deficiencies in subsoil moisture at this early stage may not affect final yield if subsoil moisture is replenished as the growing season progresses or if rainfall meets plant water needs.

Socioeconomic drought refers to “Socioeconomic definitions of drought associate the supply and demand of some economic good with elements of meteorological, hydrological, and agricultural drought. It differs from the aforementioned types of drought because its occurrence depends on the

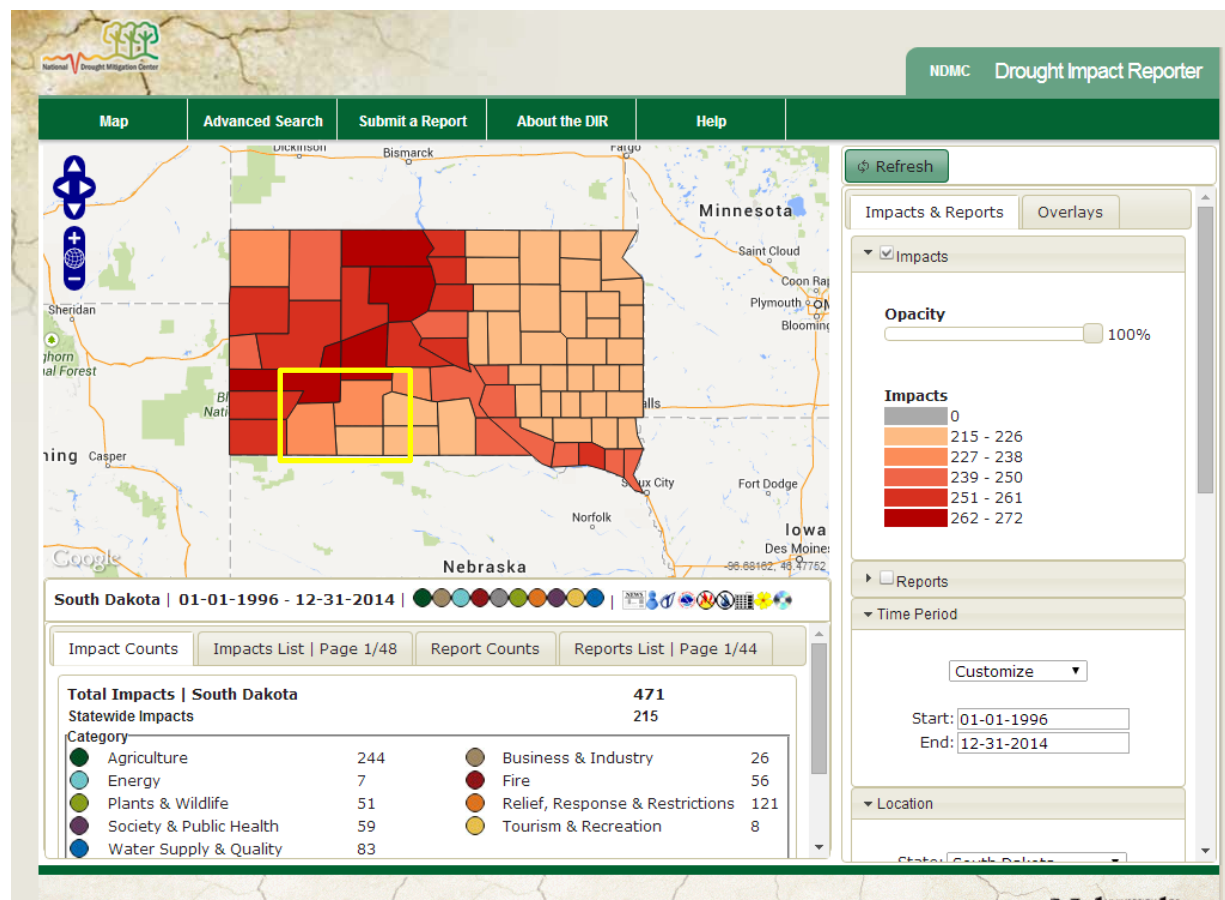
time and space processes of supply and demand to identify or classify droughts” (National Drought Mitigation Center).

The four different definitions all have significance in South Dakota. A meteorological drought is the easiest to determine based on rainfall data and is an easier drought to monitor from rain gauges and reports. A hydrological drought means that stream and river levels are low, which also has an impact for surface water and ground water irrigators. In addition, in-stream discharges that fall below a pre-required level also place the state in regulatory difficulty with U.S. Fish and Wildlife and with neighboring states over cross-border flowage rights.

Historical Occurrences

The National Drought Mitigation Center (NDMC) located at the University of Nebraska in Lincoln provides drought monitoring data at the county level. Figure 29 indicates the number of drought impacts within South Dakota from 1996 to 2013. The planning area, which is framed by the yellow box, indicates that there have been 215-238 impacts of drought during this time period.

Figure 31: Drought Impact Distribution in South Dakota: 1996-2014.



Source: National Drought Mitigation Center Drought Impact Reporter

The South Dakota Multi-Hazard Mitigation Plan's vulnerability assessment suggests that the planning area is highly vulnerable to drought. Further, the plan indicates that notable droughts have occurred somewhere in the state about every 12 years on average, which is equivalent of an 8% chance any given year. Between 2000 and 2013, the NCDC reports 467 drought events in the state of South Dakota, however, none of these reported events included counties within the planning area.

According to the U.S. Department of Agriculture's Risk Management Agency, during the 13-year period from 2000-2013, combined crop insurance payments for damages resulting from drought totaled \$615,106.94.

The table below provides a summary of insured crop losses as a result of drought.

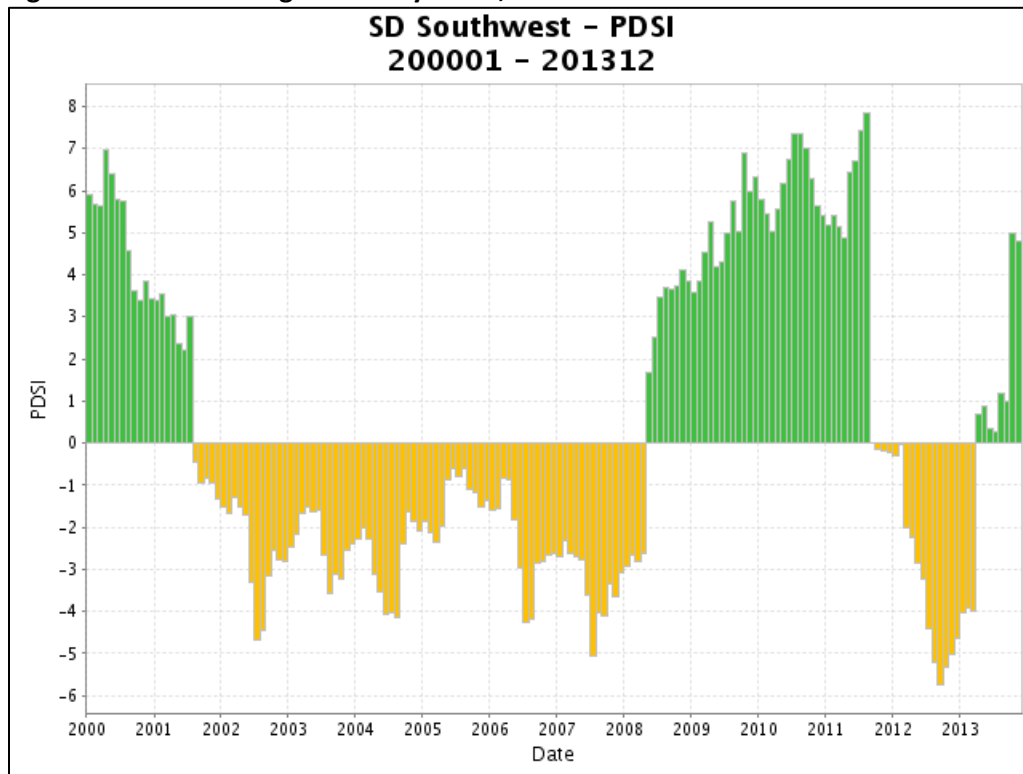
Table 39: Annual Losses for Insured Crops Due to Drought for Shannon County

Year	Total
2000	\$83,441.00
2001	\$75,254.00
2002	\$1,188,991.00
2003	\$456,321.00
2004	\$1,761,854.00
2005	\$123,823.00
2006	\$690,354.00
2007	\$957,388.00
2008	\$198,049.00
2009	\$28,311.00
2010	\$8,649.00
2011	\$6,887.80
2012	\$1,340,589.30
2013	\$367,347.09
Total	\$7,287,259.19
Average Annual Loss	\$520,518.51
Adjusted Annual Loss	\$615,106.94

Source: USDA RMA

Figure 32 shows the Palmer Drought Severity Index for the planning region from 2000 – 2013. This figure suggests that the levels of extreme drought (less than -4.0) coincide with high RMA indemnity losses.

Figure 32:Palmer Drought Severity Index, 2000 - 2013



Source: NCDC

Probability of Occurrence

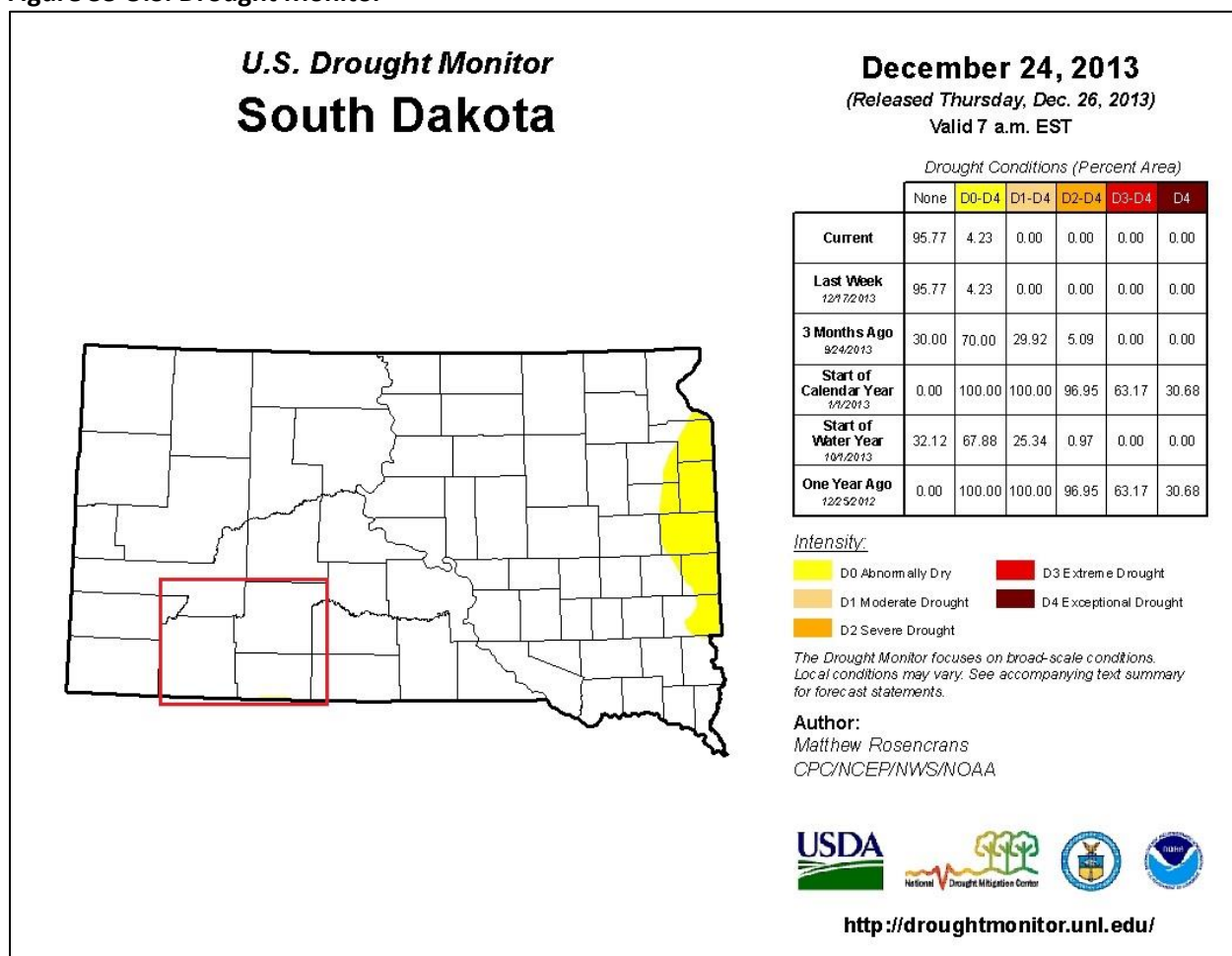
Although NCDC reported no incidents of drought between 2000 and 2013, USDA RMA data reported indemnity losses each year attributable for loss. This suggests a 100% annual recurrence interval for drought events in the planning area.

Although drought is not predictable, long-range outlooks may indicate an increased chance of drought, which can serve as a warning. A drought period can last for months, years, or even decades. It is rarely a direct cause of death, though the associated heat, dust, and stress can all contribute to increased mortality.

The U.S. Drought Monitor was developed in 1999, is a weekly map produced by NOAA, the USDA, and the NDMC. The U.S. Drought Monitor is a composite index that includes many indicators. The U.S. Drought monitor is the drought map that is used to initiate drought relief.

The U.S. Drought Monitor for December 24, 2013 is provided below. The map does not indicate drought taking place within the planning area, which is indicated by the red box in figure 33.

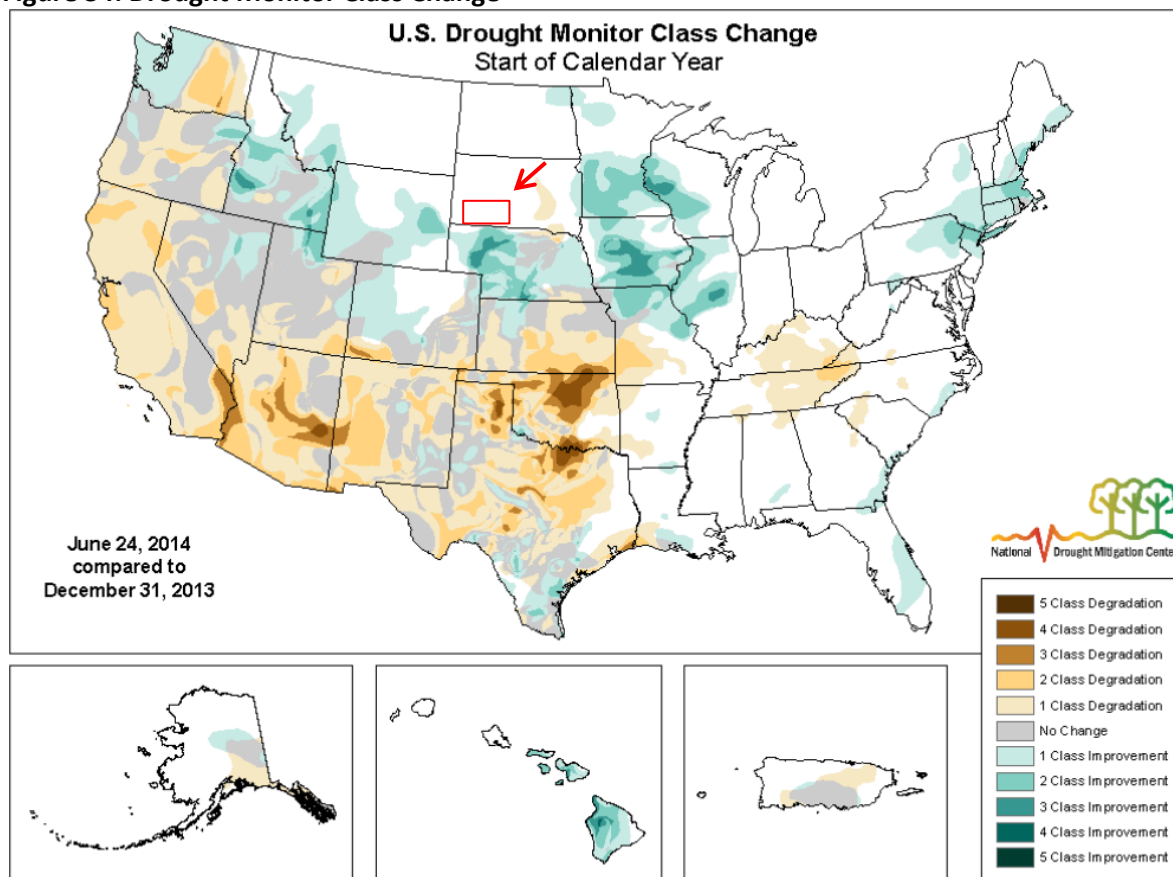
Figure 33 U.S. Drought Monitor



Source: <http://www.droughtmonitor.unl.edu>

While the Figure 33 represents short term drought conditions, UNL drought monitor data (Figure 34) suggests these conditions have been stable from December 31, 2013, to June 24, 2014.

Figure 34: Drought Monitor Class Change



Source: <http://droughtmonitor.unl.edu/>

Extent

All of the planning area is at risk of drought. Shannon County has a mean of 42.20 days of rain with an average of 18.38 inches of rainfall per year. The planning area as a whole has a mean of 41.85 days of rain with an average of 18.44 inches of rainfall per year. Successive years or extended periods of time with below average amounts of rain or snow result in drought.

Vulnerability

The impacts of drought can be categorized as economic, environmental, or social. Many economic impacts occur in agriculture and related sectors, including forestry and fisheries, because of the reliance of these sectors on surface and subsurface water supplies. In addition to obvious losses in yields in both crop and livestock production, drought is associated with increases in insect infestations, plant disease, and wind erosion. Droughts also bring increased problems with insects and disease to forests and reduce growth. The incidence of forest and range fires increases substantially during extended droughts, which in turn places both human and wildlife populations at higher levels of risk. Income loss is another indicator used in assessing the impacts of drought because so many sectors are affected.

Although environmental losses are difficult to quantify, increasing public awareness and concern for environmental quality has forced public officials to focus greater attention and resources on these effects. Environmental losses are the result of damages to plant and animal species, wildlife habitat, and air and water quality, forest and range fires, degradation of landscape quality, loss of biodiversity, and soil erosion. Some of the effects are short-term and conditions quickly return to normal following the end of the drought. Other environmental effects linger for some time or may even become permanent. Wildlife habitat, for example may be degraded through the loss of wetlands, lakes, and vegetation. However, many species will eventually recover from this temporary aberration. The degradation of landscape quality, with increased soil erosion, may lead to a more permanent loss of biological productivity of the landscape.

Social impacts mainly involve the public safety, health, conflicts between water users, reduced quality of life, and inequities in the distribution of impacts and disaster relief. Many of the impacts specified as economic and environmental has social components as well.

According to the state's multi-hazard mitigation plan, South Dakota is vulnerable to the social, economic, and environmental impacts of drought. Specifically, drought in South Dakota means limited water availability for people, agriculture, and recreation. The demand for water for multiple uses also impacts water availability. Rural water systems designed largely to supply water for people are now also being used for cattle and to fight wildfires, taxing the limits of the systems. These problems are only expected to get worse in the years to come as populations grow.

As described above, agricultural interests are among the most vulnerable to the impacts of drought. Future agricultural development may increase the impacts of drought within the planning area. The following figures illustrate the locations of agricultural uses and industries within the planning area.

Figure 35 indicates that there is disproportionate crop production activity in Bennett County. This suggests that Bennett County may be more vulnerable to the impacts of drought relative to the rest of the planning area. Figure 36 illustrates the types of crop production in each county, suggesting that wheat, grain, and miscellaneous crops are predominate in the planning area.

Figure 35: Crop Production

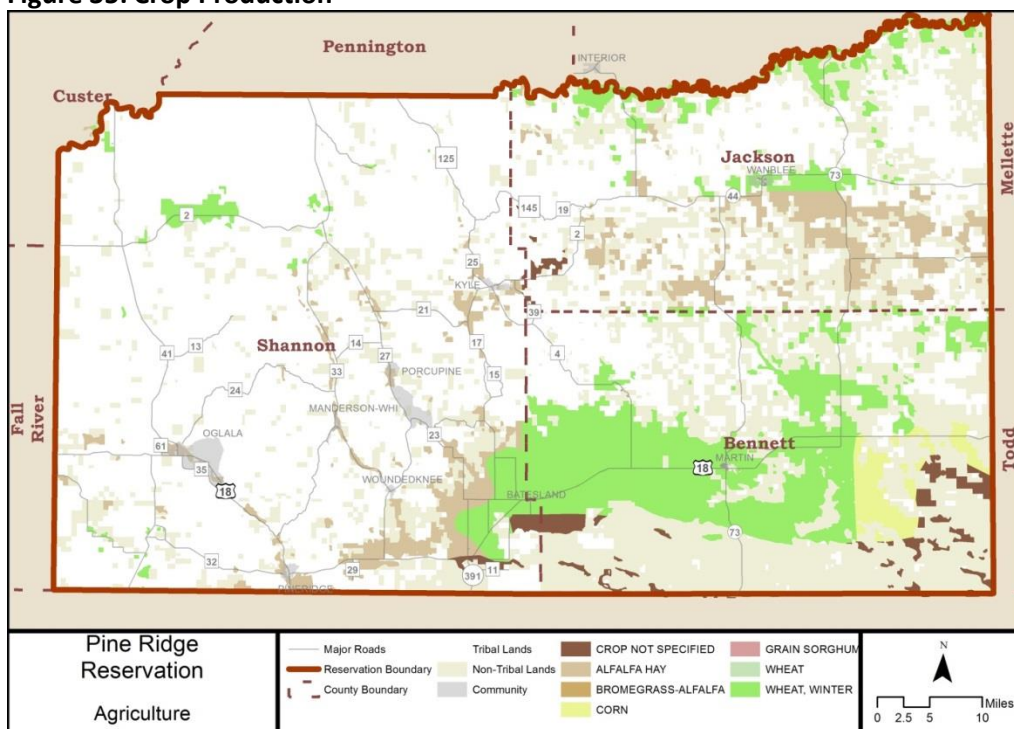
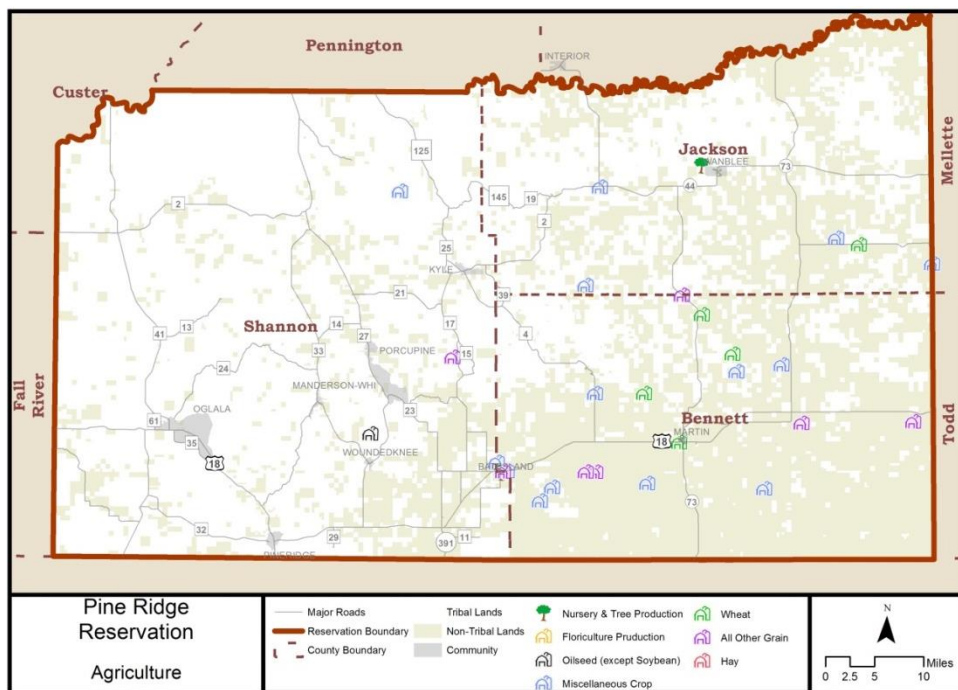


Figure 36: Agricultural Production



Hazardous Materials Incidents

The following description for hazardous materials is provided by the Federal Emergency Management Agency (FEMA):

Chemicals are found everywhere. They purify drinking water, are used in agriculture and industrial production, fuel our vehicles and machines, and simplify household chores. But chemicals also can be hazardous to humans or the environment if used or released improperly. Hazards can occur during production, storage, transportation, use, or disposal. The community is at risk if a chemical is used unsafely or released in harmful amounts.

Hazardous materials in various forms can cause fatalities, serious injury, long-lasting health effects, and damage to buildings, homes, and other property. Many products containing hazardous chemicals are used and stored in homes routinely. These products are also shipped daily on the nation's highways, railroads, waterways, and pipelines.

Chemical manufacturers are one source of hazardous materials, but there are many others, including service stations, hospitals, and hazardous materials waste sites.

Varying quantities of hazardous materials are manufactured, used, or stored at an estimated 4.5 million facilities in the United States--from major industrial plants to local dry cleaning establishments or gardening supply stores.

Hazardous materials come in the form of explosives, flammable and combustible substances, poisons, and radioactive materials. These substances are most often released as a result of transportation accidents or because of chemical accidents in plants.

The U.S. Environmental Protection Agency requires industry to report information on toxic chemical releases and water management activities, through the Toxics Release Inventory (TRI) Program. In the previous decade TRI reporting requirements were lessened; thereby limiting available data on chemical releases and disposal. The federal government in recent years reinstated stricter reporting requirements for industrial and federal facilities that release toxic substances with potential to threaten human health and the environment. Those requirements went into effect in April of 2009 and data from these reports is now available.

Historical Occurrence

Hazardous materials incidents are reported to the NRC. The following incidents have been reported within the planning area between 1993 and 2013:

- August 1993: A crop dusting plane crashed resulting in a release near South Dakota 73, by Martin
- October 1993: A storage tank overflowed during filling at the junction of Highway 18 & 73, near Martin
- March 2001: A diesel fuel storage was overfilled due to operator error resulting in the spill of diesel into a secondary containment area and onto nearby soil at the BIA Road Shop in Pine Ridge
- August 2004: An estimated 75 gallons of tar were dumped in a pasture located on Highway 73 south of Martin, resulting in the death of a calf

- July 2008: A caller reported an individual cleaning out port-a-john waste and dumping sewage onto private property 3 miles east of Allen
- November 2012: A motor failure at a lift station resulted in the discharge of raw sewage over the course of several days at the OST Water and Sewer

The South Dakota Department of Transportation reports on transportation related hazardous material spills. Between 1977 and 2013, there were 0 spills in Shannon County, 12 in Jackson County, and 8 in Bennett County. These events are distinct from the aforementioned NRC events.

Probability of Occurrence

Based upon the historic occurrences from 1977-2012, it is likely that hazardous materials incidents will continue to occur within the planning area. 26 events over the course of a 45 year time period suggest an annual recurrence interval of .57.

Extent

According to the 2012 Emergency Response Guidebook there are nine (9) classes of hazardous materials:

Table 40: Classes of Hazardous Materials

Class	Type of Material	Divisions
1	Explosives	Division 1.1 – Explosives with a mass explosion hazard Division 1.2 – Explosives with a projection hazard Division 1.3 – Explosives predominantly a fire hazard Division 1.4 – Explosives with no significant blast hazard Division 1.5 – Very insensitive explosives with a mass explosion hazard Division 1.6 – Extremely insensitive articles
2	Gases	Division 2.1 – Flammable gases Division 2.2 – Non-flammable, non-toxic gases Division 2.3 – Toxic gases
3	Flammable Liquids (and Combustible Liquids)	
4	Flammable solids; Spontaneously combustible materials	Division 4.1 – Flammable solids Division 4.2 – Spontaneously combustible materials Division 4.3 – Water-reactive substances/Dangerous when wet materials
5	Oxidizing substances and Organic peroxides	Division 5.1 – Oxidizing substances Division 5.2 – Organic peroxides
6	Toxic substances and infectious substances	Division 6.1 – Toxic Substances Division 6.2 – Infectious substances
7	Radioactive Materials	
8	Corrosive Materials	
9	Miscellaneous hazardous	

	materials/Products, Substances, or Organisms	
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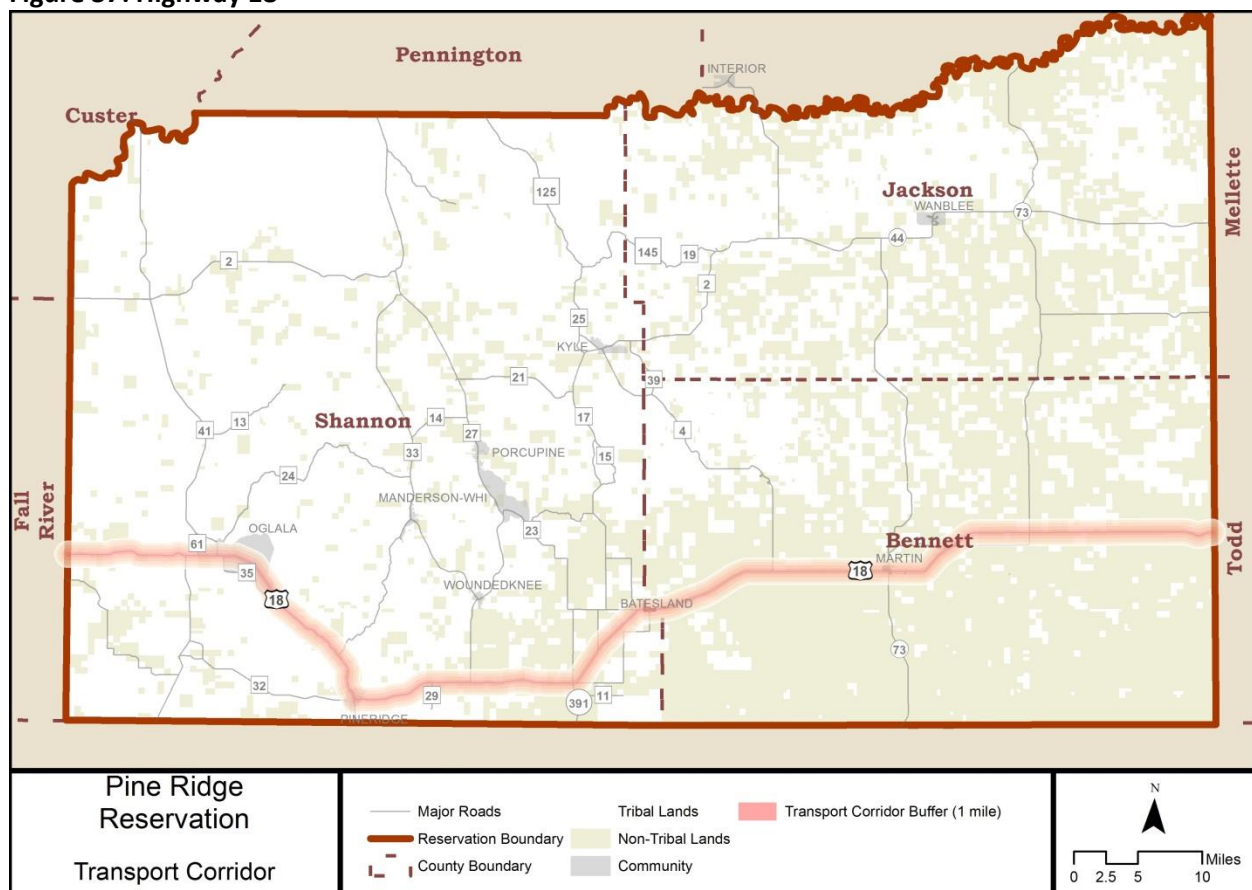
Any, and all, of these types of materials may be transported through the planning area.

The planning area is crossed by Highway 18 (east – west). Because of the coast-to-coast traffic the area is becoming increasingly susceptible to HAZMAT events. Below are listed specific areas within the planning area that pose serious HAZMAT potential.

- Numerous trucks carrying hazardous materials travel through the area on a daily basis, this poses a threat due to the possibility of a transportation accident within the city limits of any individual municipality, or state roadway.
- Gas Storage Tank Explosions –Gas storage tanks (propane, diesel and gasoline) of private enterprises could impact the development potential of affected lands and have an impact on the arrangement of land uses within the county.

The following figure illustrates the 1 mile area around Highway 18 which is most at risk.

Figure 37: Highway 18



Vulnerability

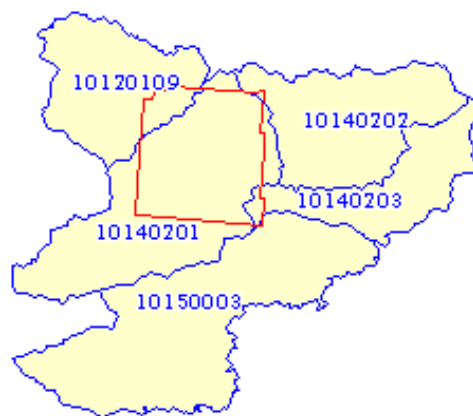
Individuals in close proximity to an incident could see minor to moderate health impacts depending upon the extent of the incident. The warning time for these incidents ranges from less than 24 hours to more than one week.

Any future development in close proximity to transportation corridors may increase the vulnerability to transportation related hazardous material incidents.

Flooding

A flood is partial or complete inundation of normally dry land areas. Heavy precipitation can cause flooding either in the region of precipitation or in areas downstream. Heavy accumulations of ice or snow can also cause flooding during the melting stage. These events are complicated by the freeze/thaw cycles characterized by moisture thawing during the day and freezing at night. There are two main types of flooding in the planning area: river (or riverine) flooding and flash flooding which includes ice jam flooding.

Riverine flooding is defined as the overflow of rivers, streams, drains, and lakes due to excessive rainfall, rapid snowmelt or ice melt. The areas adjacent to rivers and stream banks that carry excess floodwater during rapid runoff are called floodplains. A floodplain is defined as the lowland and relatively flat area adjoining a river or stream. The terms —base flood / 100-year flood / 1% annual chance —refer to the area in the floodplain that is subject to a one percent or greater chance of flooding in any given year. Floodplains are a larger entity called a basin, which is defined as all the land drained by a river and its branches. Shannon County crosses 5 watersheds as shown in the image to the right and as follows:



- Middle Cheyenne-Spring (10120109)
- Upper White (10140201)
- Middle White (10140202)
- Little White (10140203)
- Upper Niobara (10150003)

(Source: http://cfpub.epa.gov/surf/county.cfm?fips_code=46113)

In addition to these 5 watersheds, the planning area has the Bad watershed (10140102) located in Jackson County.

A flash flood is an event that occurs with little or no warning where water levels rise at an extremely fast rate. Flash flooding results from intense rainfall over a brief period, sometimes combined with rapid snowmelt, ice jam release, frozen ground, saturated soil or impermeable surfaces.

Ice jam flooding is a form of flash flooding that occurs when ice breaks up in moving waterways, and then stacks on itself where channels narrow. This creates a natural dam, often causing flooding within minutes of the dam formation.

Most flash flooding is caused by slow-moving thunderstorms or thunderstorms repeatedly moving over the same area. Flash flooding is an extremely dangerous form of flooding which can reach full peak in only a few minutes and allows little or no time for protective measures to be taken by those in its path. Flash flood waters move at very fast speeds and can move boulders, tear out trees, scour channels, destroy buildings, and obliterate bridges. Flash flooding often results in higher loss of life, both human and animal, than slower developing river and stream flooding.

In some cases, flooding may not be directly attributable to a river, stream, or lake overflowing its banks. Rather, it may simply be the combination of excessive rainfall or snowmelt, saturated ground, and inadequate drainage. With no place to go, the water will find the lowest elevations—areas that are often not in a floodplain. This type of flooding, often referred to as sheet flooding, is becoming increasingly prevalent as development outstrips the ability of the drainage infrastructure to properly carry and disburse the water flow.

In certain areas, aging storm sewer systems are not designed to carry the capacity currently needed to handle the increased storm runoff. This combined with rainfall trends and rainfall extremes all demonstrate the high probability, yet generally unpredictable nature of flash flooding in the planning area.

Although flash floods are somewhat unpredictable, there are factors that can point to the likelihood of flash floods occurring. Weather surveillance radar is being used to improve monitoring capabilities of intense rainfall. This, along with knowledge of the watershed characteristics, modeling techniques, monitoring, and advanced warning systems increases the warning time for flash floods.

The National Flood Insurance Program (NFIP) was established in 1968 to reduce flood losses and disaster relief costs by guiding future development away from flood hazard areas where feasible; by requiring flood resistant design and construction practices; and by transferring the costs of flood losses to the residents of floodplains through flood insurance premiums.

In return for availability of federally backed flood insurance, jurisdictions applying to join the NFIP must agree to adopt and enforce minimum flood loss reduction standards to regulate proposed development in special flood hazard areas as defined by the Federal Emergency Management Agency's (FEMA) flood maps. One of the strengths of the program has been keeping people away from flooding rather than keeping the flooding away from people - through historically expensive flood control projects.

The NFIP has approximately 4.4 million policies in force, representing over \$370 billion worth of coverage, in 19,884 participating jurisdictions nationwide. Ninety-five percent of flood insurance policies are written by private companies and sold by more than 110,000 insurance agents and brokers participating in the NFIP's Write Your Own (WYO) program. Since 1969, over \$12.1 billion in claims have been paid.

As the following tables show, Batesland has an identified Flood Hazard Boundary, but does not participate in the NFIP. Jackson County and the city of Kadoka are the only NFIP participants in the planning area. **There are no Repetitive Loss Properties within the planning area.**

Table 41: Communities with Hazard Area Identified

Communities Not In NFIP With Hazard Area Identified							
Community Name	County	NFIP Participant	CID#	Initial FHBM Identified	Initial FIRM Identified	Current Effective Map Date	Tribal
Batesland, Town of	Shannon County	No	460305#	05/13/80		05/13/80	No

Table 42: NFIP Participating Communities

NFIP Participating Communities							
Community Name	County	NFIP Participant	CID#	Initial FHBM Identified	Initial FIRM Identified	Current Effective Map Date	Tribal
Jackson County	Jackson County	Yes	460240			(NSFHA)	No
Kadoka, City of	Jackson County	Yes	460185	07/16/76		07/16/76	No

Historic Occurrences

Spring flooding from rapid snow and ice melt as well as flash flooding from heavy rains can both occur within the county. One of the most intensive flash floods occurred on the afternoon of June 13, 2003 when 2 to 4 inches of rain and hail fell within a 4-hour period. This stationary thunderstorm caused major damage to homes, cars, and trees. Numerous flooding instances have also occurred. Specific problem flooding areas are listed below:

- Flooding – Batesland
 - Heavy rainfalls and / or snow melt cause streets and roadways to be flooded.
- Flooding – Shannon County
 - During periods of heavy rain and / or snow melt the road infrastructure in Shannon County is susceptible to erosion, water over run, and wash out.
 -

Table 43: Summary of Major Historical Flooding Events

Jurisdiction	Hazard	Property Damages	Crop Damages	Injuries	Fatalities
Pine Ridge Reservation	Flooding	\$295,848.68	\$8,414.92	5	1
Shannon County	Flooding			2	0

The following is an NCDC description of selected flooding events:

- Shannon County, 07/93/2007: Heavy rains washed out a portion of BIA Road #33. Two Agency officers drove into the washout and were injured.
- Jackson County, 06/05/2008: The White River overflowed its banks from south of Interior to south of Belvidere and covered Highway 44. Flooding was reported along Cottonwood Creek, the South Fork of the Bad River, and their tributaries. Flooding was also reported around Cottonwood, Kadoka, and Interior. 500K in damage occurred.

The NCDC reports 23 flooding events (including flash flooding) in the planning area between 1996 and 2013. During this time 4 of these events resulted in 535, 000 dollars in property damage, with 0 dollars in reported crop damage. Of the 23 flooding events, 4 occurred within Shannon County.

According to the U.S. Department of Agriculture's Risk Management Agency, during the 13-year period from 2000-2013, there were no crop insurance payments for damages resulting from flood events.

Probability of Occurrence

Based on the 23 flooding events that have occurred in the planning area over the 19 year time frame, the annual recurrence interval is 1.2.

Extent

The following figure illustrates the 1% annual change flood, as determined by HAZUS, as well as the location of critical culverts.

Figure 38: 1% Annual Chance Flood

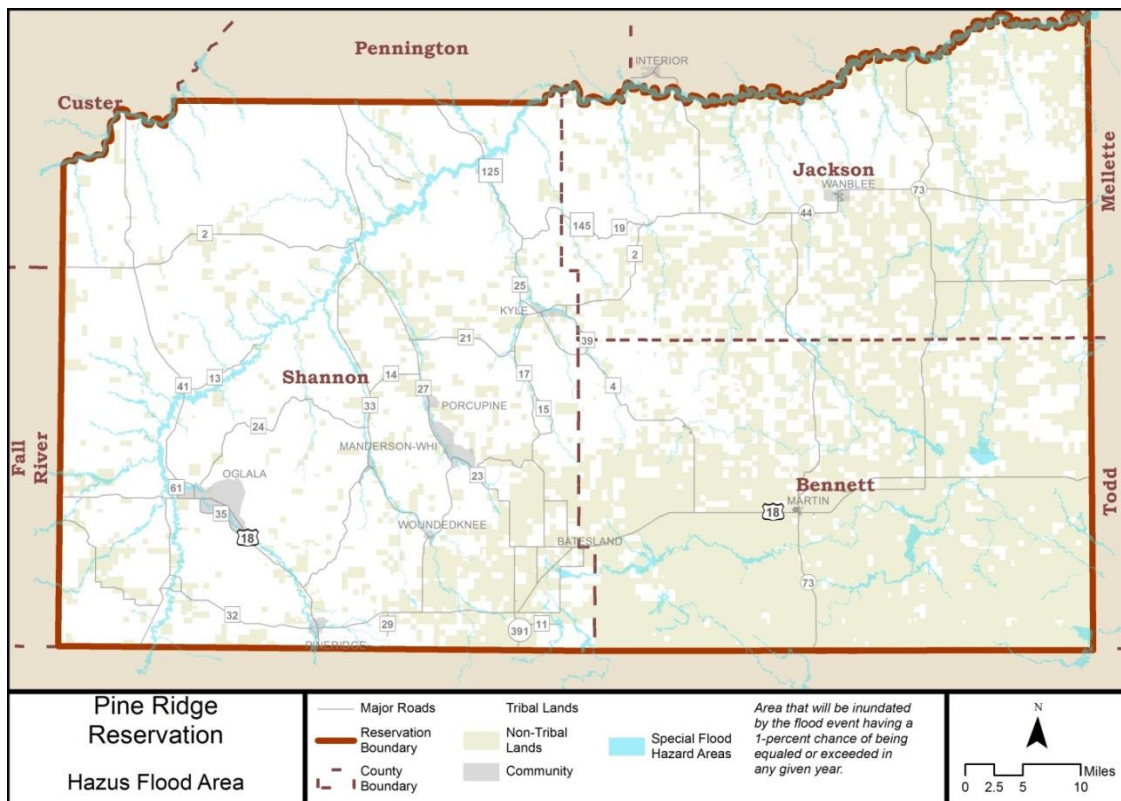
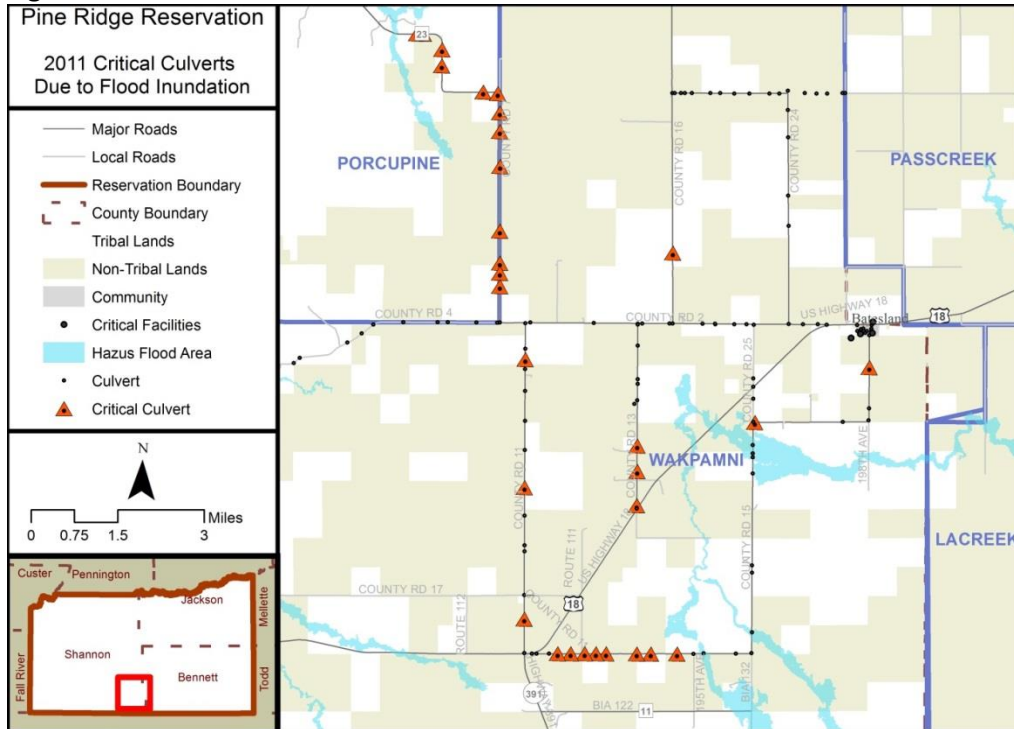


Figure 39: Critical Culverts



Vulnerability

A 2008 study examining social vulnerability as it relates to flood events found that low-income and minority populations are disproportionately vulnerable to flood events. These groups may lack resources that are needed to mitigate potential flood events as well as resources that are necessary for evacuation and response. In addition low income residents are more likely to live in areas vulnerable to the threat of flooding, but lack the resources necessary to purchase flood insurance. The study did find that flash floods are more often responsible for injuries and fatalities than prolonged flood events. Other groups that may be more vulnerable to floods, specifically flash floods, include the elderly, those outdoors during rain events, and those in low-lying areas. Elderly residents may suffer from a decrease or complete lack of mobility and as a result, be caught in flood-prone areas. Residents in campgrounds or public parks may be more vulnerable to flooding events as many of these areas exist in natural floodplains and can experience rapid rise in water levels resulting in injury or death.

The lack of building codes and floodplain development regulations in the planning area may increase the population's vulnerability to flood impacts. Any future development within these areas may further increase vulnerability.

Shallow Landslide

A landslide is the downhill movement of masses of soil and rock by gravity. The basic ingredients for landslides are gravity, susceptible soil or rock, sloping ground, and water. Landslides occur when susceptible rock, earth, or debris moves down a slope under the force of gravity and water. Landslides may be very small or very large, and can move at slow to very high speeds. A natural phenomenon, small scale landslides have been occurring in slide-prone areas of South Dakota long before human occupation. New landslides can occur because of rainstorms, fires, earthquakes, and various human activities that modify slope and drainage.

Shallow landslide can have significant impacts on life and property. Shallow landslides typically involve a thin layer of wet soil (less than 5 feet). In areas with varying topographic extremes, shallow landslides that occur near the top of an elevated area may accumulate force and debris as they move downward.

Historical Occurrences

The NCDC reports no incidents of landslides in the planning area from 2006 to 2013.

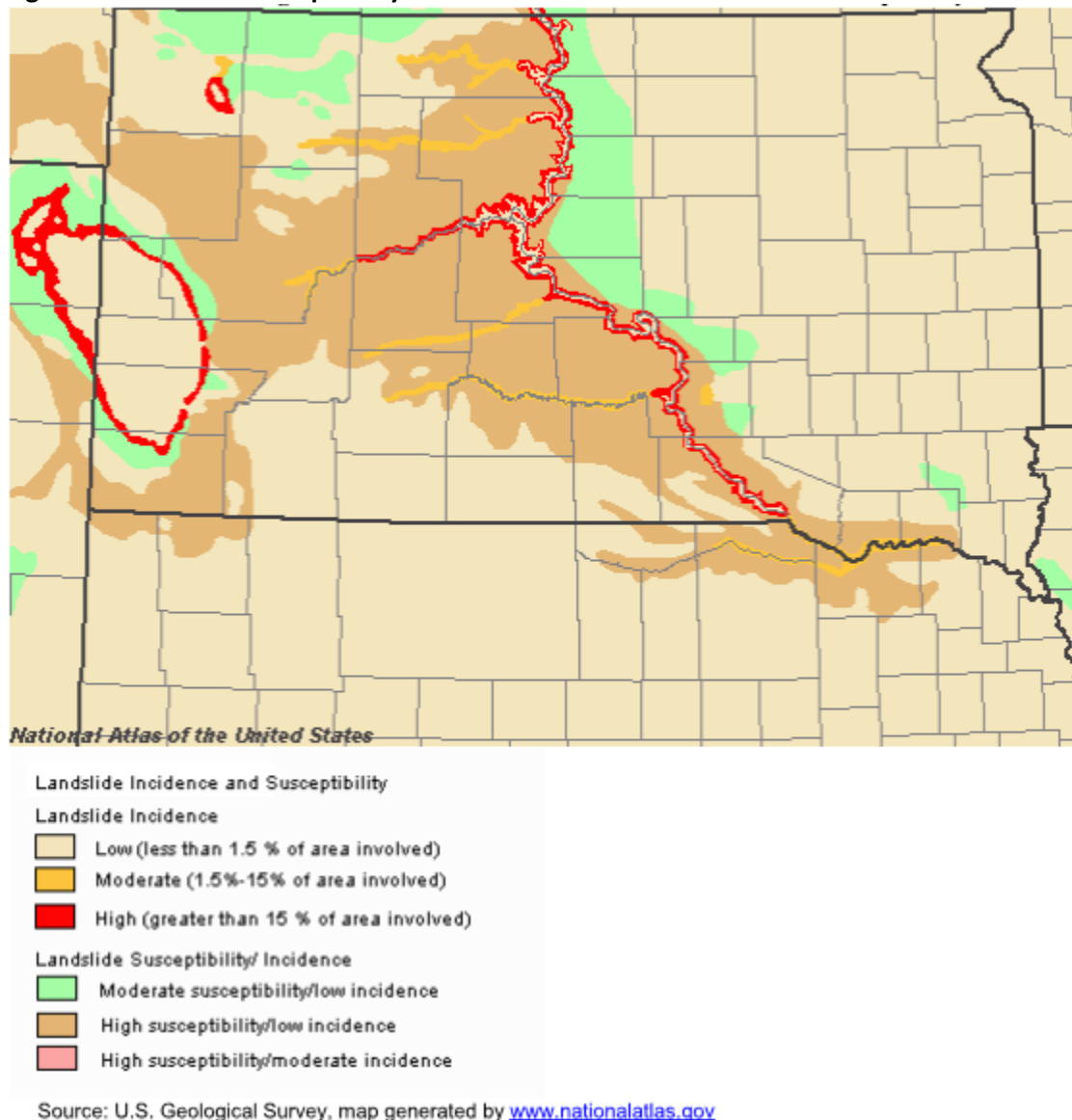
Probability of Occurrence

Based on the frequency of reported landslide events, no landslides are expected to occur in Plymouth County. However, the USGS does indicate there is a high susceptibility/low incidence rate in the in the northeastern and extreme western sections of the planning area.

Extent

Figure 40 indicates that landslides may occur within the entire planning area, it may be more likely to occur in the northeastern and extreme western sections.

Figure 40: Landslide Susceptibility



Vulnerability

Area with higher concentrations of populations and property may be more vulnerable to shallow landslides, as they are often confined to a small geographical area. Populations and property located in high susceptibility/low incidence are more vulnerable. Figure 40 indicates that within the planning area, the western edge of Shannon County has a high susceptibility/low incidence category. The northeastern portion of the planning area, contained within Jackson County, is also placed in the high susceptibility/low incidence category for landslides. Future development of these at-risk areas may increase the population's vulnerability to the impacts of shallow landslides.

Urban Fires

Fire hazards exist in every size of community on every day of the year. The magnitude of a fire varies, ranging from small vehicle fires to large residential, business, or institutional fires. There are numerous ways in which a fire starts, but the most common cause results from human carelessness. The entire geographical area of Shannon County is at risk from urban fire, specifically Batesland, which contains a majority of the county's population. All fire departments in the Fall River County are part of a mutual aid response plan, and willingly share equipment and manpower to aid in the suppression of structure fires. The Batesland and Green Valley volunteer fire departments have the same agreements in Shannon County.

Historical Occurrences

Fires have occurred involving dumpsters, automobiles, mobile homes, houses, and commercial properties.

Fire mitigation is a concern to everyone but especially emergency management officials, because fire affects the lives of those persons in which it comes into contact. Fire also destroys property and critical resources needed for the survival of all area residents.

The BIA manages the Branch of Fire Management at Pine Ridge Indian Reservation. The Branch of Fire Management has the following fire engines: Seven grass units, four tenders and one structure unit. There are 9 Federal employees with the Branch of Fire Management. Those employees are Wildland Fire Program Manager, Fuels Management Technician, Fire Control Specialist, Secretary, six Forestry Technicians, and three Forestry Aides.

The fire season usually runs from mid-April to early November, depending on the weather. During the fire season, the Branch of Fire Management utilizes AD Firefighters, Blade Operators, Timekeepers and Dispatchers. A Heliteck Team (emergency strike team) and a Single Engine Aircraft Team were used for the first time in 2003 (BIA, Branch of Fire Management). The Branch of Fire Management serves the entire Reservation. There are hydrants located along the Mni Wiconi waterline. If necessary, livestock wells and ponds can be used as a water source for firefighting. The fire crews can be used outside the Reservation.

Batesland Fire Department provides services in Shannon County. Emergency Management services are provided under the South West District for Shannon County.

Probability of occurrence

Approximately 5-10 houses are lost to structural fires each year. However, this number cannot be used to calculate probability or an occurrence interval since it does not indicate the total number of occurrences

Extent

While all of the urban settings within the planning area are at risk of urban fire, Batesland has been identified by the planning community as an area of significant concern.

The Pine Ridge Reservation is also very vulnerable to house fires and regularly experiences fires that cannot be controlled. The Oglala Sioux tribe does not have a structural fire department to respond to urban fires.

Vulnerability

Elderly, mentally handicapped, impoverished, and all other inhabitants of the area are at risk from urban fire. Medical facilities, nursing homes, shelters, emergency response centers, trailer parks, and heavily public areas are also at serious risk because of their importance to the community and because of the populations within.

There is always the potential for catastrophic loss due to fire but the potential for this great of loss is highest for older structures. Properties at close proximity to one another and those with inadequate fire separations of common basements are the most at risk areas in Batesland.

Future development in urban areas may increase the population's vulnerability to the impacts of urban fires.

Shortage of Critical Materials

A shortage of critical materials refers to situation in which a community lacks sufficient life sustaining necessities. Examples can include food, water, shelter, medicine, and energy products. These events are often precipitated by natural disasters, such as severe winter storms, tornados, thunderstorms, etc. Extended power outages pose significant problems to people with life sustaining devices dependent on electricity, such as dialysis machines. Water and waste management systems also often require electricity. Propane shortages during the winter have also been identified as a significant concern by the planning community.

Historical Occurrences

The planning area has experienced numerous power outages in the past. A selection of events are outlined below:

- On October 6th, 2013, severe winter storms caused power outages to over 30,000 households in the Rapid City area. Residents in Shannon County also lost power during this event.
- On November 7th, 2008, winds upwards of 50 mph and snowfall totally over 4 feet caused power outages for several days. The Pine Ridge Indian Reservation reported 20-ft snow drifts during this storm.

West River Electric Association, Inc. services electricity to the northern portions of the planning area. Black Hills Electric Cooperative also services electricity to the planning area. Both of these electric companies have suffered from power outages in the past.

Probability of Occurrences

The probability of a shortage of critical materials occurring is difficult to quantify, but is likely low. The planning area is most at risk from a large scale power outage do to natural hazards, such as severe winter storms and high wind events. The probability of each of these events can be found in their hazard profile

in this plan, however, not all of these events result in power outages. Communities and residents should be prepared deal with extended power outages, should an event occur. Further, a lack of propane for heating purposes is a significant concern during winter events.

Extent

The entire planning area is at risk from a shortage of critical materials. People living in more remote areas may be more difficult to reach in the event of a power outage.

Vulnerability

While the entire planning area is vulnerable to a shortage of critical materials, certain populations may be more vulnerable. These may include people living in remote rural areas and people dependent of medical devices requiring electricity, etc. While these events are rare, the most common are power outages. As mentioned earlier, these events are important from winter heating purposes and may also impact the water supply network of a community.

The following table indicates the type of heating fuel used by homes in Shannon Country and the planning area:

Table 44: Type of Heating Fuel, 2012

Type of Fuel	Number of Homes	
	Shannon	Planning Area
Utility Gas	54	148
Bottled, Tank or LP Gas	1,763	2,979
Electricity	593	1,070
Fuel Oil, Kerosene, etc.	101	192
Coal or coke	0	0
Wood	296	516
Solar Energy	0	0
Other fuel	13	53
No fuel used	9	9

Source: 2012 American Community Survey 5 year estimates. Table B25040: House heating fuel

This table indicates the 60% of homes in the planning area use bottled, tank, or LP Gas to heat their homes. 22% use electricity. 10% use wood. If a hazardous event were to impact the availability of bottled, tank, LP gas or electricity during the winter time, this could prove hazardous for the planning area. The planning area has experienced this in the past.

Unlike many other areas in the country, only 3.8% of the land on the Pine Ridge Indian Reservation is suitable for agriculture. This suggests that the area may be highly dependent upon food from outside of the planning area. In the event of a food shortage in which the community was not able to access these outside sources of food, the community may be unable to produce sufficient local food.

Future development in the area may increase the population's vulnerability to shortages of critical materials.

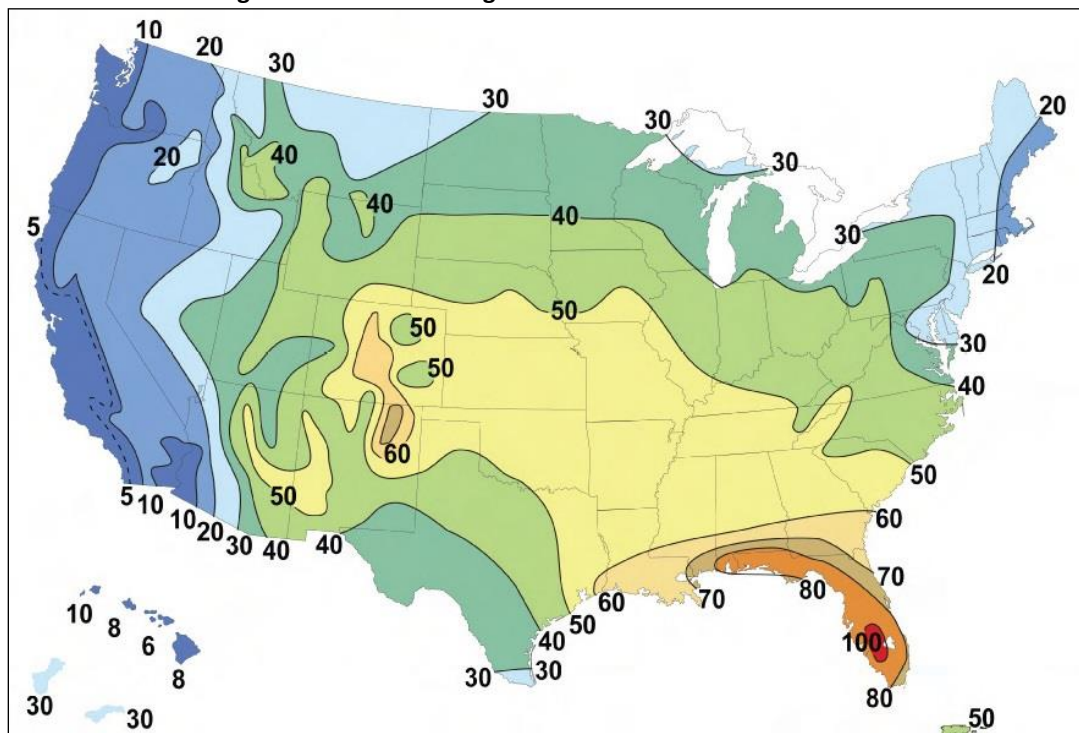
Summer Storms

Summer storms, including severe thunderstorms are common and unpredictable annual events throughout the United States. Thunderstorms differ from many other hazards in that they are generally large in magnitude, have a long duration, and travel across large areas and through multiple jurisdictions within a single region. Additionally, thunderstorms often occur in series, with one area having the potential to be hit multiple times in one day.

Summer Storms in the planning area usually occur in the evening during the spring and summer months. These often massive storms can include heavy rain, hail, lightning, high wind, and can produce tornados with little or no advanced warning. Furthermore, heavy rains can cause flooding, lightning can cause wildfires, and high winds can down trees, cause power outages, and destroy property with their shear force.

The majority of thunderstorms do not cause damage, but when they escalate to the point of becoming severe, the potential for damages include crop losses from wind and hail, property losses due to building and automobile damages due to hail, wind, or flash flooding, and death or injury to humans and animals from lightning, drowning, or getting struck by falling or flying debris. Figure 41 displays the average number of days with thunder across the country each year, with South Dakota experiencing between 40-50 days from west to east across the state.

Figure 41: Annual Average Number of Thunderstorm Events



electrical systems. Between 1977 and 2006, an average of 62 people were killed each year by lightning in the United States. In South Dakota two fatalities were attributed to lightning between 1990 and 2003. Lightning can strike up to 10 miles from the portion of the storm depositing precipitation. There are three primary types of lightning: intra-cloud, inter-cloud, and cloud to ground. While intra and inter-cloud lightning are more common, it is when lightning comes in contact with the ground that society is potentially impacted. Lightning generally occurs when warm air is mixed with colder air masses resulting in atmospheric disturbances necessary for polarizing the atmosphere. There is no scale for measuring lightning. Damaging hailstorms are also common in severe thunderstorms. Hail measuring just three-quarters of an inch can approach speeds of 100 mph. Hail causes nearly \$1 billion in damage to property and crops annually.

Historical Occurrences

According to the National Climactic Data Center (NCDC) there have been a total of 93 hail events, 13 lightning events, 60 severe storm events, and 34 wind events between 1950 and 2013. It is important to note that the NCDC database does not provide a complete listing of all events, but it does provide data on reported events and can give a feel for the types of damages and frequency of summer storms. The table below illustrates damages, injuries and fatalities as reported within the NCDC database. It is worth noting that the Pine Ridge Reservation totals include data from Shannon County as well.

Table 45: Summer Storm Events, 1950 to 2013

Jurisdiction	Hazard	Property Damages	Crop Damages	Injuries	Fatalities
Pine Ridge Reservation	Hail	\$1,679,661.09	\$1,265,621.35	0	0
Pine Ridge Reservation	Lightning	\$52,785.08	\$1,055.56	1	1
Pine Ridge Reservation	Severe Storm / Thunderstorm – Wind	\$1,003,516.97	\$413,566.11	10	3
Pine Ridge Reservation	Wind	\$511,891.60	\$5,356.10	2	0
Shannon County	Hail	\$140,646.06	\$55,714.29	0	0
Shannon County	Lightning	\$1,651.01	\$777.78	1	1
Shannon County	Severe Storm / Thunderstorm – Wind	\$382,878.51	\$81,693.77	9	1
Shannon County	Wind	\$34,975.81	\$74,626.87	0	0

The following are NCDC descriptions of select summer storm events in the planning area:

- Shannon County, 06/09/2001: Two teenagers on horseback encountered a thunderstorm as they were traveling from Pine Ridge to Manderson. One rider told authorities he was knocked unconscious after seeing a bright flash of light. When he awoke, he found his riding partner on the ground, not breathing or moving. One fatality (direct) and one injury occurred from lightning. The horse was also killed.

- Jackson County: 06/09/2001: A person at the Badlands National Park Cedar Pass Campground was injured when a table broke and hit him in the head. Time of the wind was estimated from the RAWS observation.
- Shannon County: 04/17/2006: A mobile home, west of Oglala, was destroyed by outflow winds from a nearby thunderstorm. The strong broadside winds caused the mobile home to roll over with several people inside. Five people were injured and there was one fatality.

According to the U.S. Department of Agriculture's Risk Management Agency, during the 13-year period from 2000-2013, combined crop insurance payments for damages resulting from excessive precipitation events totaled \$54,776.91.

The table below provides a summary of insured crop losses as a result of excessive precipitation.

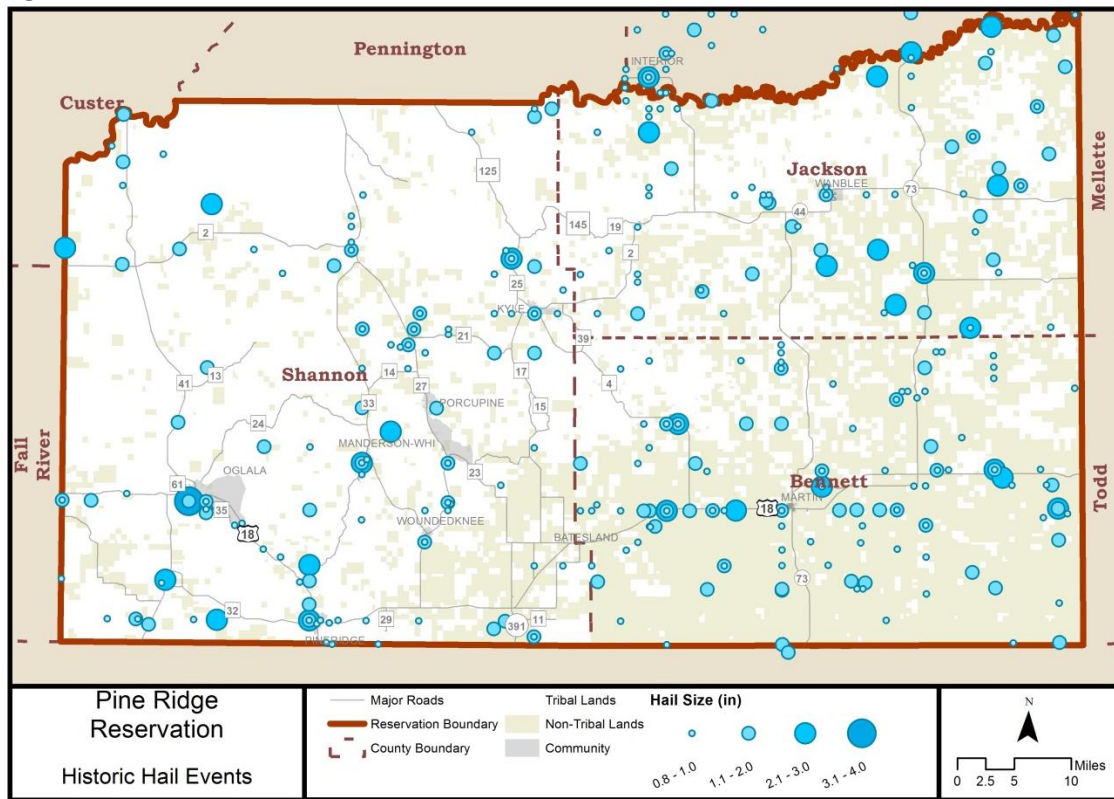
Table 46: Annual Losses for Insured Crops Due to Excessive Precipitation for Shannon County

	Total
2000	\$35,241.00
2001	\$0.00
2002	\$0.00
2003	\$0.00
2004	\$20,224.00
2005	\$25,469.00
2006	\$93,578.00
2007	\$4,433.00
2008	\$0.00
2009	\$76,961.00
2010	\$59,312.00
2011	\$246,682.80
2012	\$0.00
2013	\$140,809.00
Total	\$702,709.80
Average Annual Loss	\$50,193.56
Adjusted Annual Loss	\$54,776.91

Source: <http://www.rma.usda>.

The following figure illustrates the location and magnitude of recorded hail events within the planning area.

Figure 42: Recorded Hail Events



According to the U.S. Department of Agriculture's Risk Management Agency, during the 13-year period from 2000-2013, combined crop insurance payments for damages resulting from hail totaled \$129,952.37.

The table below provides a summary of insured crop losses as a result of hail.

Table 47: Annual Losses for Insured Crops Due to Hail for Shannon County

	Total
2000	\$13,069.00
2001	\$2,701.00
2002	\$7,814.00
2003	\$10,031.00
2004	\$102,595.00
2005	\$17,827.00
2006	\$50,113.00
2007	\$5,273.00
2008	\$21,931.00
2009	\$134,529.00
2010	\$0.00

2011	\$357,493.50
2012	\$0.00
2013	\$1,013,906.00
Total	\$1,737,282.50
Average Annual Loss	\$124,091.61
Adjusted Annual Loss	\$129,952.37

Source: <http://www.rma.usda>.

Probability of Occurrence

Based upon the historic occurrences, it is highly likely that severe summer storms will continue to occur frequently within the planning area. The historic data shows an annual recurrence interval of 0.95.

Extent

The TORRO scale is used throughout the United Kingdom to classify hailstones and provides some detail related to the potential impacts from hail. Table 45 outlines the TORRO Hailstone Scale.

Table 48: TORRO Hailstone Scale

TORRO Classification / Intensity	Typical Hail Diameter	Typical Damage Impacts
H0: Hard Hail	5 mm; Pea size	No damage
H1: Potentially Damaging	5 -15 mm (marble)	Slight general damage to plants and crops
H2: Significant	10 -20 mm (grape)	Significant damage to fruit, crops, and vegetation
H3: Severe	20 -30 mm (Walnut)	Severe damage to fruit and crops, damage to glass and plastic structures
H4: Severe	30 -40 mm (Squash Ball)	Widespread damage to glass, vehicle bodywork damaged
H5: Destructive	40 – 50 mm (Golf ball)	Wholesale destruction of glass, damage to tiled roofs; significant risk or injury
H6: Destructive	50 – 60 mm (chicken egg)	Grounded aircrafts damaged, brick walls pitted; significant risk of injury
H7: Destructive	60 – 75 mm (Tennis ball)	Severe roof damage; risk of serious injuries
H8: Destructive	75 – 90 mm (Large orange)	Severe damage to structures, vehicles, airplanes; risk of serious injuries
H9: Super Hail	90 – 100 mm (Grapefruit)	Extensive structural damage; risk of severe or even fatal injuries to persons outdoors
H10: Super Hail	>100 mm (Melon)	Extensive structural damage; risk or severe or even fatal injuries to persons outdoors

The planning area has experienced H10 hail in the past.

Vulnerability

Severe thunderstorms can cause property damage or loss, downed power lines, loss of electricity, obstruction to traffic flow, significant damage to trees, and pose a threat to human life. The electrical infrastructure is highly vulnerable to damages from lightning strikes and downed tree branches, roadways are vulnerable to wash outs and surface damages from flash floods, and building stock and

personal property are vulnerable to damages from large hail stones. Severe thunderstorms can also cause significant damage to crops, levees, and dams throughout the rural areas of the planning area.

Vulnerable populations related to severe thunderstorms include the elderly, those living in mobile homes, and those caught outside during storm events. During severe thunderstorms, it is not uncommon for residents/towns to lose power for a temporary or prolonged period of time. These power outages may prove deadly for elderly citizens that are reliant upon machines to remain alive. The elderly are generally less mobile than many other members of the community, making them more vulnerable to a wide range of threats. Mobile homes that are not anchored or are improperly anchored are also at high risk during thunderstorms because they can be turned over by a wind of 60 to 70 mph. Improperly anchored structures are a major concern in the planning area. Severe thunderstorms are defined by winds in excess of 58 mph.

Hail is another component of severe thunderstorms that can seriously impact residents of mobile homes. Hail can damage vehicles, roofs, and landscaping, as well as cause injury and occasionally death.

Lightning is commonly considered the most dangerous and most frequently encountered weather hazard. Annually, there is an average of 62 fatalities from lightning in the United States. The most vulnerable groups related to lightning strikes are people located outside during storm events. Vulnerable areas to consider include public parks, campgrounds, swimming pools, and schools with play grounds.

There are many strategies that can be undertaken to protect both existing and future assets. Building codes can be developed so that they require or recommend the use of hail resistant material, tie-downs and ground anchors for mobile homes, and architectural designs that reduce or limit potential for wind-born debris. Existing structures can also incorporate hail resistant products such as concrete roof tiles and siding. Critical facilities should install and utilize surge protectors to ensure the continuity of vital services. Power lines can be buried to decrease the chance of prolonged power outages and safe rooms can be constructed near vulnerable populations (schools, daycares, mobile home parks, etc.) to increase safety for residents in those areas.

Future development in the planning area may increase the population's vulnerability to the impacts of summer storms.

Tornadoes

The NWS defines a tornado as —a violently rotating column of air extending from a thunderstorm to the ground. Tornadoes are the most violent of all atmospheric storms and are capable of tremendous destruction. Wind speeds can exceed 250 miles per hour and damage paths can be more than one mile wide and 50 miles long. In an average year, more than 900 tornadoes are reported in the United States, resulting in approximately 80 deaths and more than 1,500 injuries.

Tornado disasters are often associated with Tornado Alley (the area from the Gulf to the Northern Great Plains that has high tornado incidence). South Dakota sits in the northern region of Tornado Alley and is susceptible to the specific conditions to which the formation of tornadoes has been attributed: warm Gulf air coming in contact with cool Canadian air fronts and dry air systems from the Rocky Mountains. The intersection of these three systems produces thunderstorm conditions that can spawn tornadoes. According to NOAA, tornadoes can occur at any location and from a wide variety of conditions. Western

South Dakota, though not in the Tornado Alley, is still vulnerable to tornadoes of different strengths. South Dakota has experienced 972 tornadoes from 1980 through 2010 with 90 percent of them being rated F0 and F1, 10 percent rated F2 through F5. Only four F4 rated tornadoes have occurred in South Dakota (McCook in 1998, Brown in 2002, Kingsbury in 2003, and Edmunds in 2010). Since 1980, there have been on average 46 tornadoes per year in South Dakota. Most tornadoes occurred in May, June and July, but tornadoes can occur in every month of the year in South Dakota. Mid-afternoon through sunset is the peak time of day for tornado activity. There have been 276 injuries and 7 deaths attributable to tornadoes (Source: NCDC Storm Events Database).

Historical Occurrences

According to the National Climatic Data Center (NCDC) there have been a total of 23 reported tornadoes between 1950 and 2013. It is important to note that the NCDC data base does not provide a complete listing of all tornadoes which may have impacted the planning area, but it does provide data on reported events and can give a feel for the types of damages and frequency of tornadoes. The table below illustrates damages, injuries and fatalities as reported within the NCDC database. It is worth noting that the Pine Ridge Reservation totals include data from Shannon County as well.

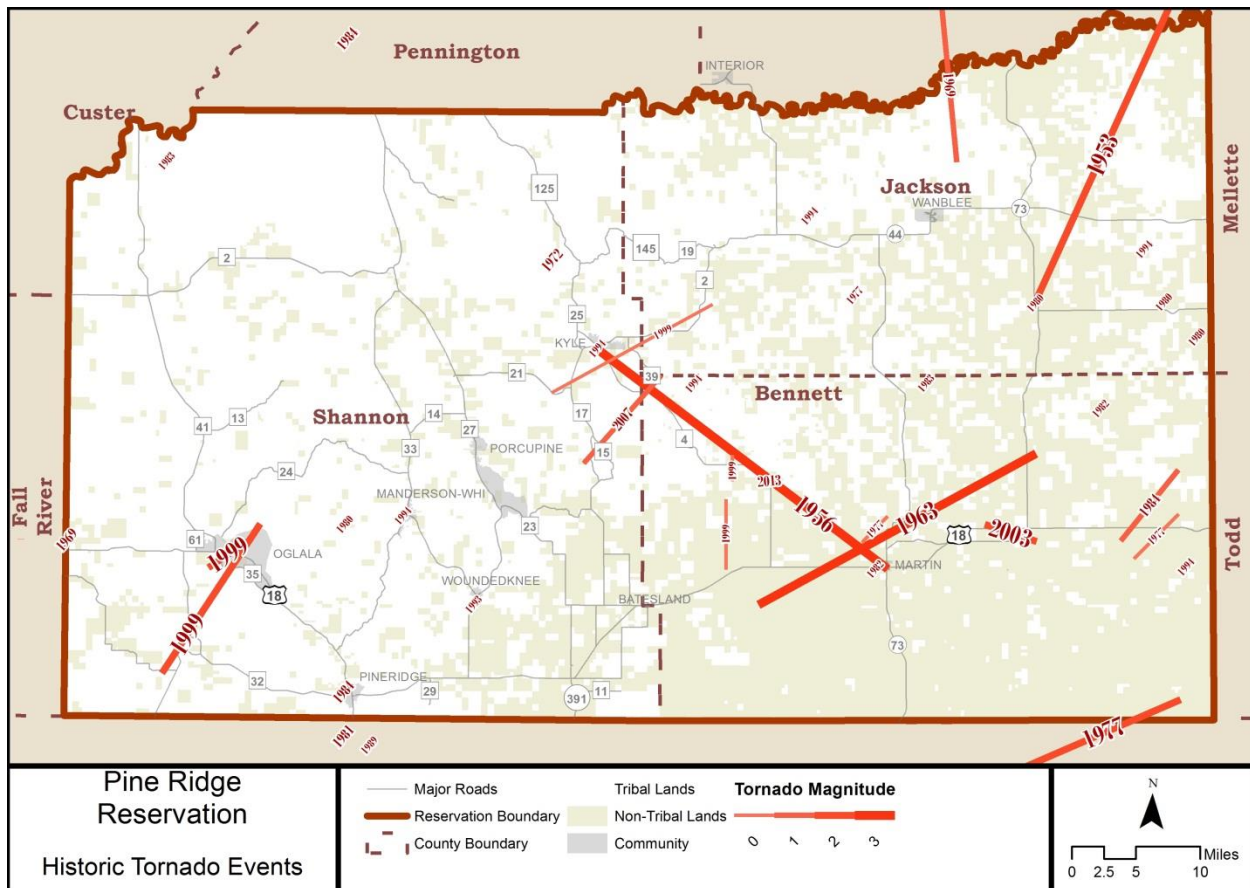
Table 49: Tornado Damages

Jurisdiction	Hazard	Property Damages	Crop Damages	Injuries	Fatalities
Pine Ridge Reservation	Tornadoes	\$3,914,249.15	\$203,099.89	57	1
Shannon County	Tornadoes	\$3,500,201.50	\$74,626.87	56	1

The following are NCDC descriptions of select tornado events:

- Shannon County, 06/04/1999: This was the first of two tornadoes that swept through the town of Oglala. Spotters and law enforcement reported that the tornado went up and down several times. It remained on the ground just prior to hitting Oglala and then dissipated as it moved to the northeast. There was one fatality with 54 people receiving medical care for injuries. A church and three of its surrounding buildings were destroyed, 22 mobile homes destroyed, 30 to 50 buildings damaged and a lot of hail damage to roofs and vehicles. The event resulted in \$3.2 million in damages and 54 injuries.
- Shannon County, 08/06/2004: Dispatch offices and radio stations received numerous reports of tornadoes and funnel clouds from Potato Creek to Wounded Knee as a line of storms moved across Jackson, Shannon, and Bennett Counties. Many of the locations and times were unconfirmed. Only the tornado in Batesland did damage. Only small hail was reported with these storms. \$100K in damage resulted.

Figure 43: Historic Tornado Event Paths



According to the U.S. Department of Agriculture’s Risk Management Agency, during the 13-year period from 2000-2013, there were no crop insurance payments for damages resulting from tornadoes.

Probability of Occurrence

Based upon the historic occurrences, it is likely that tornadoes will impact the planning area in the future. The historic data shows an annual recurrence interval of 0.37.

Extent

Tornadoes are classified according to the EF- Scale (the original F – Scale was developed by Dr. Theodore Fujita, a renowned severe storm researcher). The Enhanced F- Scale (see Table 3.72) attempts to rank tornadoes according to wind speed based on the damage caused. This update to the original F scale was implemented in the U.S. on February 1, 2007.

Figure 44: Enhanced F Scale for Tornado Damage

FUJITA SCALE			DERIVED EF SCALE		OPERATIONAL EF SCALE	
F Number	Fastest 1/4-mile (mph)	3 Second Gust (mph)	EF Number	3 Second Gust (mph)	EF Number	3 Second Gust (mph)
0	40-72	45-78	0	65-85	0	65-85
1	73-112	79-117	1	86-109	1	86-110
2	113-157	118-161	2	110-137	2	111-135
3	158-207	162-209	3	138-167	3	136-165
4	208-260	210-261	4	168-199	4	166-200
5	261-318	262-317	5	200-234	5	Over 200

Source: The National Weather Service, www.spc.noaa.gov/faq/tornado/ef-scale.html

The wind speeds for the EF scale and damage descriptions are based on information on the NOAA Storm Prediction Center as listed in the table below. The damage descriptions are summaries. For the actual EF scale it is necessary to look up the damage indicator (type of structure damaged) and refer to the degrees of damage associated with that indicator. Information on the Enhanced Fujita Scale's damage indicators and degrees of damage is located online at www.spc.noaa.gov/efscale/ef-scale.html.

Figure 45: Enhanced Fujita Scale with Potential Damage

Scale	Wind Speed	Relative Frequency	Potential Damage
EF0	65-85	53.5%	Light. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over. Confirmed tornadoes with no reported damage. (i.e. those that remain in open fields) are always rated EF0.
EF1	86-110	31.6%	Moderate. Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
EF2	111-135	10.7%	Considerable. Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes completely destroyed; large trees snapped or uprooted; light object missiles generated; cars lifted off ground.
EF3	136-165	3.4%	Severe. Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown some distance.
EF4	166-200	0.7%	Devastating. Well-constructed houses and whole frame houses completely leveled; cars thrown and small missiles generated.
EF5	>200	<0.1%	Explosive. Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 300 feet; steel reinforced concrete structures badly damaged; high rise buildings have significant structural deformation; incredible phenomena will occur.

Source: NOAA Storm Prediction Center

The planning area has experienced EF3 tornados in the past, and could experience a tornado of any magnitude up to an EF5.

Vulnerability

Tornados and high winds occur with irregularity, and can equally affect the entire planning area. All building stock and above ground infrastructure, including critical facilities, are at risk of being damaged or affected by tornados and high winds. Tornados and high winds can cause structure loss, downed power lines, loss of electricity, obstruction to traffic flow, and significant damage to trees and center-pivot irrigation systems. A catastrophic event could lead to major economic loss for the jurisdiction. High wind speeds and flying debris can pose a significant threat to human life.

Tornados can impact a wide range of people and properties. People living in mobile homes are particularly susceptible to the effects of tornados. Mobile homes that are not anchored or are not anchored properly can be blown over by winds as fast as 60 to 70 mph. A 2007 study conducted by Dr. W. Ashley at Northern Illinois University found that between 1985 and 2005, 44% of all tornado related fatalities occurred in mobile homes while between 20 and 30% occurred in permanent homes. Tornado related deaths in mobile homes have increased over the timeframe investigated from 37% of all fatalities between 1986 and 1990 to nearly 57% of all fatalities from 2001 to 2005. The timing of tornados also impacts the vulnerability of people living in mobile homes. The 2007 study found that while only 25.8% of tornados occur between sunset and sunrise, they account for 42.5% of tornado fatalities. This is a result of a number of factors including decreased ability to identify tornados in the dark, decreased ability to communicate tornado threats due to a high rate of people sleeping during the night, and a higher number of people in the housing units (i.e. mobile home) during the nighttime.

Other factors that may increase vulnerability to the threat posed by tornados include age, poverty levels, and home rentals. The 2007 study found that the middle aged (those over 40 years of age) and elderly are more vulnerable to tornados. This may be a result of decreased mobility, higher rate of auditory complications, or lack of resources need to mitigate potential tornado related impacts.

Belt Village was built as a result of tornado damage to the Oglala cluster housing. FEMA mitigation funds were used to build storm shelters for residents in the Village.

Future development may exposure a greater number of structures and people to tornado's, increasing the planning areas vulnerability to the hazard.

Transportation Accidents

A transportation accident involves a mishap between one or more conveyances on land, sea, or air. Transportation accidents can cause property damage, bodily injury, and death.

For 2010, statistics collected by The US Department of Transportation (DOT) indicate the following distribution of transportation accidents by mode nationwide.

Table 50: Transportation Accidents by Mode, 2010

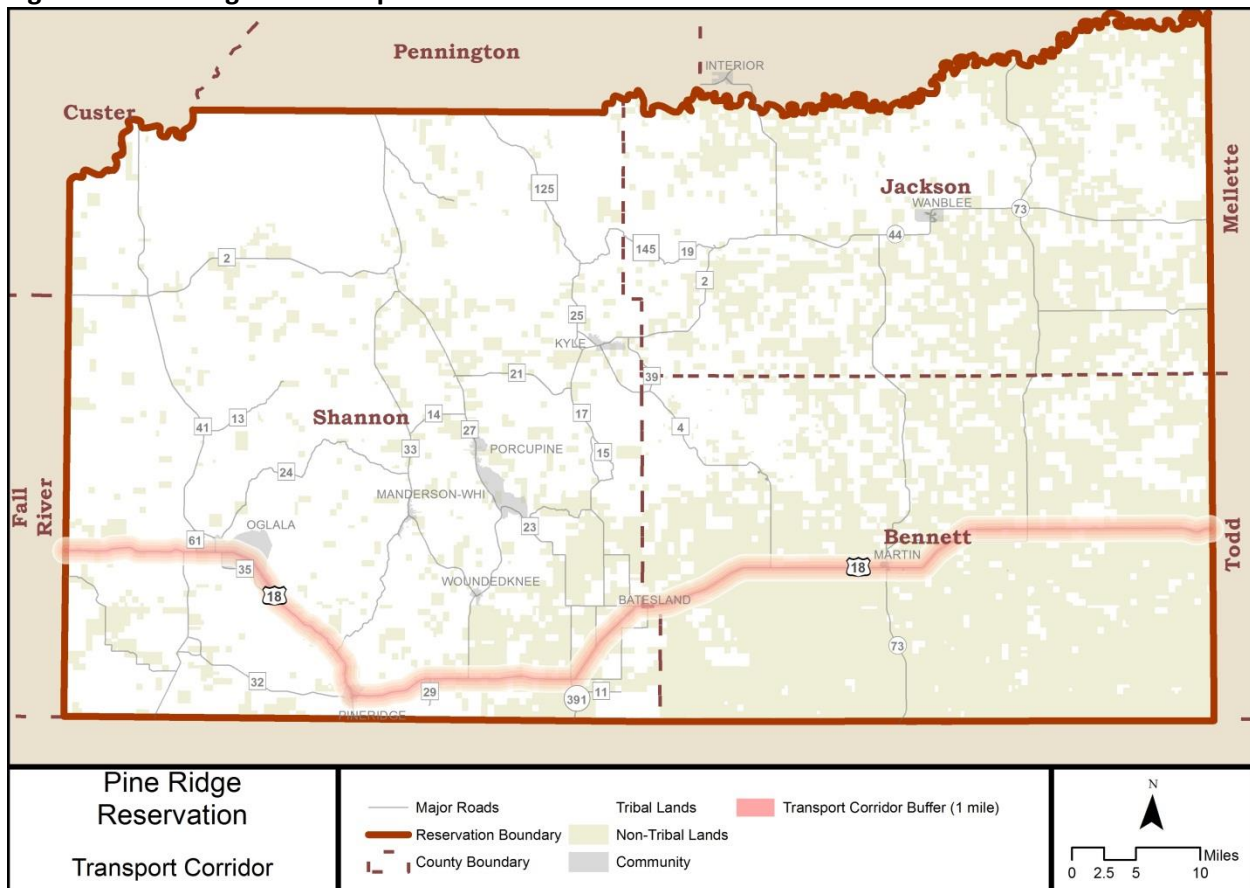
Mode	Number of Accidents
Air	1,501
Highway	5,338,000
Railroad	9,819
Transit	6,519

Waterborne	10,574
Pipeline	593
Total	5,367,006

Source: US Department of Transportation

For 2010, 99.4% of all transportation accidents involved highways. In 2009, motor vehicle crashes were the 11th leading cause of death in the United States. In terms of years of life lost, i.e. the number of remaining years that a person is expected to live had they not died, motor vehicle accidents ranked 5th, behind only cancers and heart diseases. Motor vehicle accidents are influenced by several factors, including the type of driver, road condition, density of traffic, type of roadway.

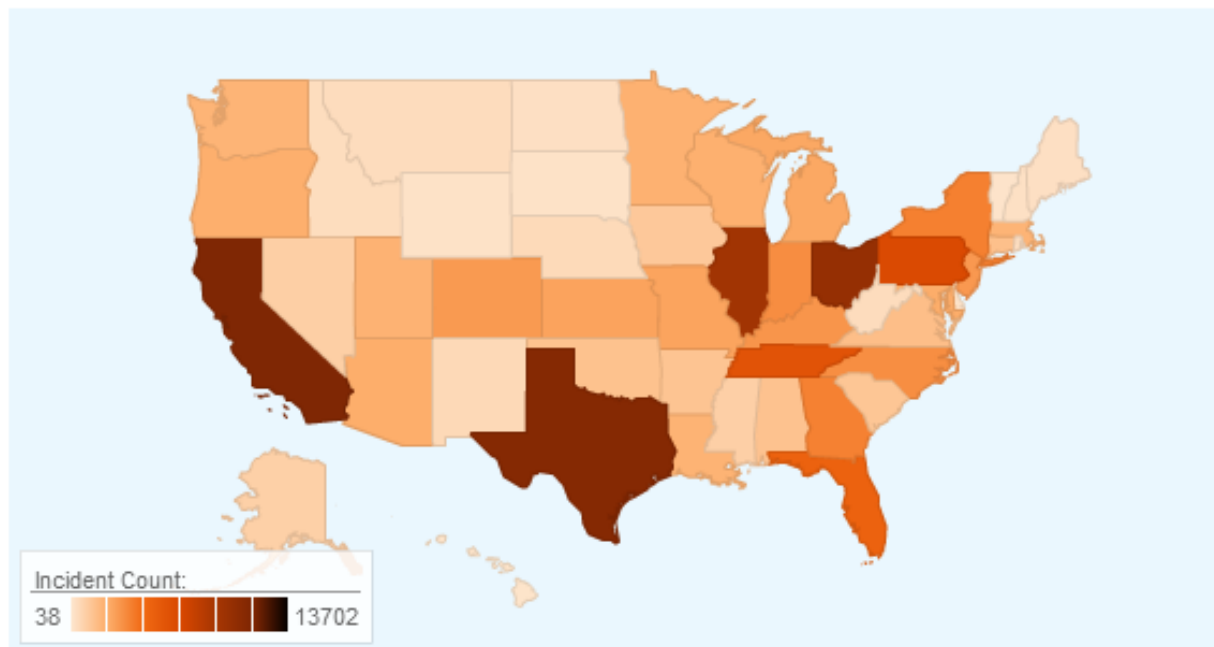
Figure 46: Planning Area Transport Corridor



Transportation accidents can also involve hazardous materials. Hazardous materials in various forms can cause death, serious injury, long-lasting health effects and damage to buildings, homes and other property. Hazardous materials come in the form of explosives, flammable and combustible substances, poisons and radioactive materials. Please refer to the hazardous materials section in the hazard profiles for more information.

The following figure indicates the number of hazardous material incidences in the United States between 2005 and 2014. South Dakota is has relatively few incidents.

Figure 47: Distribution of Transportation Hazardous Material Incidents, 2005-2014



Source: Hazmat Intelligence Portal, U.S. Department of Transportation. Data as of 6/18/2014.

The following figure indicates air traffic density during an average 24 hour period. Compared to the nation, density in South Dakota and the planning area is relatively low.

Figure 48: Air Traffic Distribution

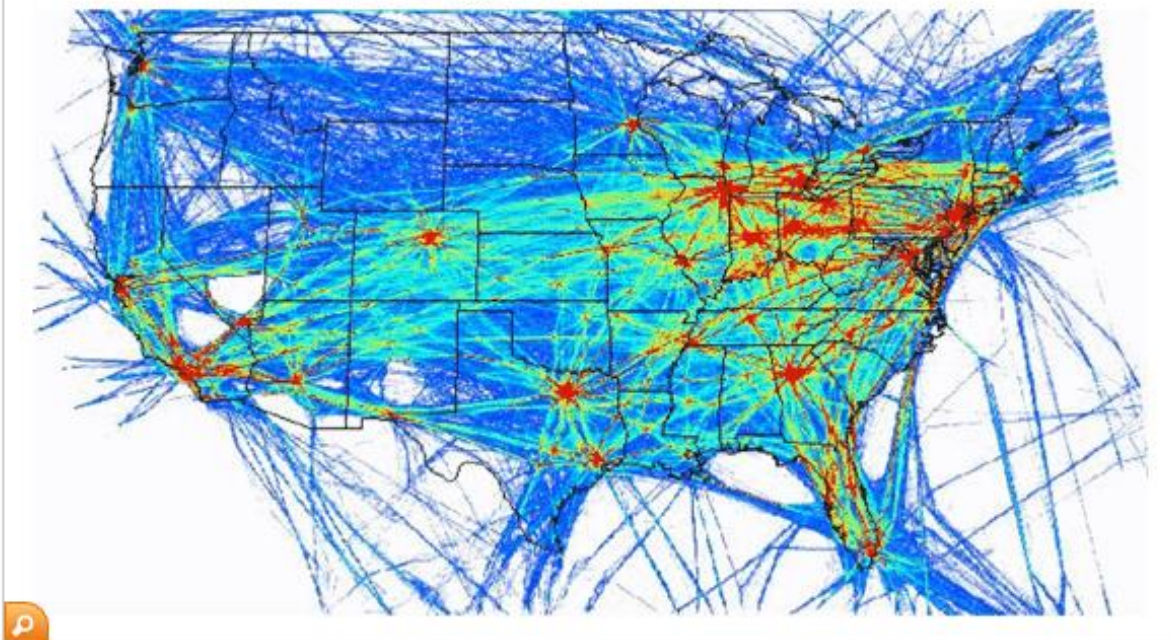
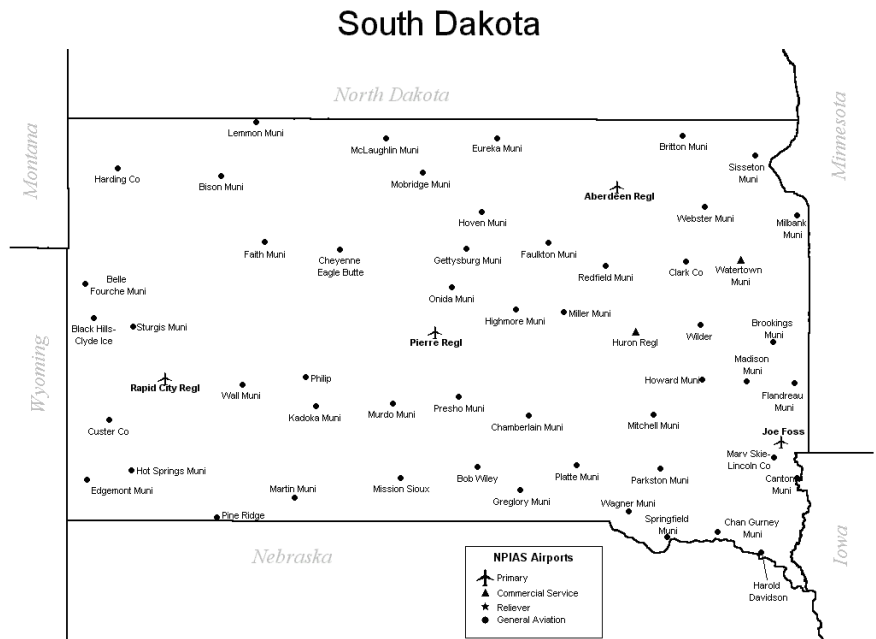


Fig. 2. Density map of 24 h of traffic in the United States.

Source: Institute of Electrical and Electronics Engineers, 2009.

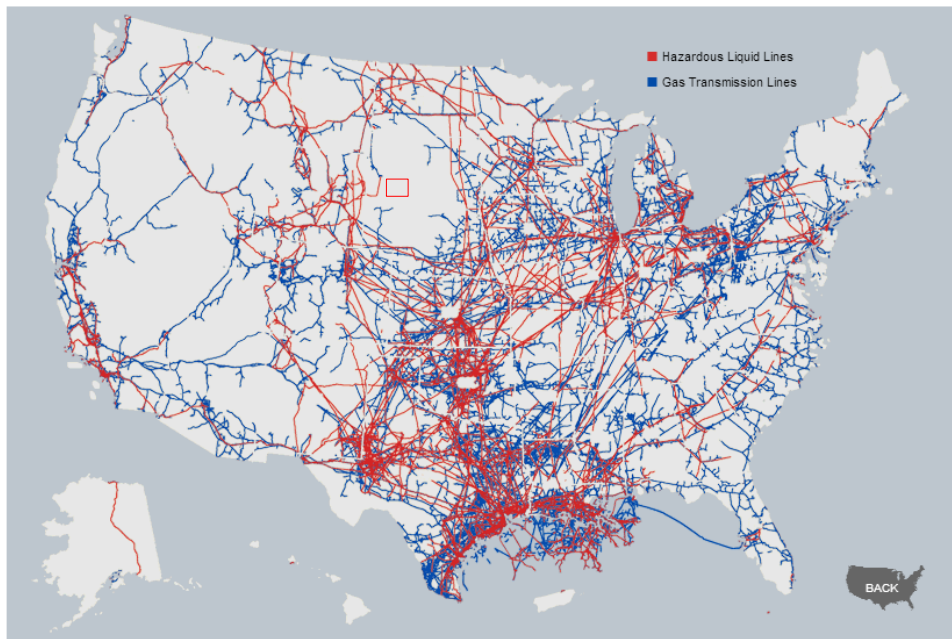
The following map indicates the location of airports in South Dakota. This map also indicates that Martin Municipal airport and Pine Ridge airport are located within the planning area.

Figure 49: Airport locations in South Dakota



The following map indicates the location of pipelines in the nation and planning area. The approximate location of the planning area is referenced by the red box. This map also illustrated that no hazardous liquid or gas transmission pipelines are located within the planning area.

Figure 50: Pipelines



Source: US Energy Information Administration; ProPublica
Historical Occurrences

a. Automobile Incidents

The South Dakota Department of Public Safety collects motor vehicle traffic fatality data for the state. The following table indicates that South Dakota has a high transportation fatality rate compared to the region and the nation as well.

Figure 51: Pipelines

TABLE 2-1 FATALITY RATE COMPARISON 2003-2012										
State	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
South Dakota	2.4	2.3	2.3	2.3	1.7	1.4	1.5	1.6	1.2	1.5
Iowa	1.4	1.2	1.4	1.4	1.4	1.4	1.2	1.0	1.2	1.2
Minnesota	1.2	1.0	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.7
Montana	2.4	2.0	2.3	2.3	2.4	2.1	2.0	1.7	1.8	N/A
Nebraska	1.5	1.3	1.4	1.4	1.3	1.1	1.0	0.9	0.9	1.1
North Dakota	1.4	1.3	1.6	1.4	1.4	1.3	1.8	1.3	1.6	N/A
Wyoming	1.8	1.8	1.9	2.1	1.6	1.7	1.4	1.6	1.8	N/A
National	1.5	1.4	1.5	1.4	1.3	1.3	1.2	1.1	1.1	1.2

Note: Death Rate is the number of traffic fatalities per 100 million vehicle miles traveled.
The 2012 rates are preliminary estimates and will be updated the following year with the final numbers.

Source: SD Department of Public Safety - Office of Accident Records

The National Highway Traffic Safety Administration collects traffic fatality data at the state level. The following tables indicates the number of traffic fatalities from 2000 to 2010.

Table 51: Number of Motor Vehicle Crashes, Fatal Crashes, and Injury Crashes in South Dakota, 2000-2010

Year	# of Crashes	# of Fatal Crashes	# of Injury Crashes
2000	19475	150	5252
2001	17699	154	4888
2002	17335	159	4702
2003	18018	173	4781
2004	17163	166	4581
2005	16254	158	4346
2006	15730	172	4196
2007	16220	130	4071
2008	16907	109	4107
2009	16994	112	4101
2010	17626	124	4155
2011	17362	101	3973

2012	16261	118	3887
Total			

The state also collects information regarding the involvement of alcohol as percent of all crashes. This information is represented in the following table.

Table 52: Alcohol Involved Crashes as a Percent of All Crashes in South Dakota, 2006-2010

Year	Total Crashes	Fatal Crashes	Injury Crashes
2006	7%	39.0%	13.4%
2007	5.9%	42.3%	11.5%
2008	6.1%	41.3%	11.4%
2009	6.0%	45.5%	11.6%
2010	5.7%	35.5%	10.8%
2011	5.7%	29.7%	11.5%
2012	6.1%	38.1%	12.5%

The state has information at the county level for 2010-2012.

The following table contains information for motor vehicle crashes in the planning area for 2010-2012:

Table 53: Number of Motor Vehicle Crashes, Fatal Crashes, an Injury Crashes in the Planning Area, 2010-2012

	Shannon			Jackson			Bennett		
	Total Crashes	Fatal Crashes	Injury Crashes	Total Crashes	Fatal Crashes	Injury Crashes	Total Crashes	Fatal Crashes	Injury Crashes
2010	25	4	11	96	3	7	35	3	4
2011	61	5	24	96	5	22	16	0	6
2012	56	12	26	119	3	23	18	2	8

Table 54: Alcohol Involved Crashes as a Percent of All Crashes in the Planning Area, 2010-2012

	Shannon			Jackson			Bennett		
	Total Crashes	Fatal Crashes	Injury Crashes	Total Crashes	Fatal Crashes	Injury Crashes	Total Crashes	Fatal Crashes	Injury Crashes
2010	19	7	7	5	1	1	5	1	4
2011	21	5	12	4	2	2	6	0	2
2012	10	4	6	3	1	0	7	2	5

While transportation accidents are more likely to occur in urban areas, rural areas have a disproportionately high share of fatal crashes. A 2007 report issued by the DOT indicates that although 23 percent of the U.S. population lived in rural areas, rural fatalities accounted for 57 percent of all traffic fatalities. For South Dakota, 127 fatal motor vehicle accidents in 2007 occurred in rural area, representing 87% of all motor vehicle fatalities that year.

According to the hazard profile section of the State's hazard mitigation plan, "South Dakota

experienced 760 transportation incidents involving hazardous materials between 1971 and 2012, an increase of 51 events since the 2011 plan. The total cost of damage associated with these incidents was approximately \$6,537,056. Among these incidents there were 3 deaths and 16 injuries. In total, 357 people were evacuated. 16 of the incidents were rail related, 28 were air, and the remaining 716 were highway. Other concerns noted in the planning process are the transport of nuclear materials, which often occurs without the knowledge of local governments or tribal organizations.”

b. Air Incidents

The National Transportation Safety Board reports 27 different air accidents in South Dakota between 2007 and 2009. No events occurred in the planning area.

c. Rail Incidents

Due to the absence of railways, there have been no reported occurrences of rail accidents in the planning area.

d. Hazardous Material Incidents

The U.S Department of Transportation Office of Hazardous Materials Safety reports 811 incidents in South Dakota between 1971 and June 2014. 31 of these events involved air, 762 involved highway, and 17 involved rail transportation.

The following tables indicates these events that occurred in the planning area over this time period:

Table 55: Transportation Hazardous Materials Incidences in Planning Area, 1971-2014

City	Date	Mode	Hazardous Class	Injuries/ Fatalities	Total Damages
Batesland	7/28/1988	Highway	Flammable – Combustible Liquid	0	0
Pine Ridge	6/15/1993	Highway	Combustible Liquid	0	\$2,165
Pine Ridge	2/6/1997	Highway	Flammable – Combustible Liquid	0	\$25
Pine Ridge	3/14/1977	Highway	Flammable – Combustible Liquid	0	0
Porcupine	3/11/1992	Highway	Combustible Liquid	0	\$10,157

Source: Hazmat Intelligence Portal, U.S. Department of Transportation. Data as of 6/17/2014.

e. Pipeline Incidents

There have been 27 pipeline accidents in South Dakota since 1986. There have been 2 fatalities, 4 injuries, and 11.9 million in damages from these events. None of these events have occurred in the planning area.

Probability of Occurrence

a. Automobile

At the state level, there was an average of 17,157 motor vehicle accidents per year between 2000 and 2010. This indicates that a 100% probability occurrence. Likewise, the state can expect 141 fatal crashes per year.

Based on data historic records maintained by the state for 2000-2013, the planning area can expect 174 motor vehicle crashes per year. Shannon County can expect 48. This indicates a 100% probability of occurrence. Likewise, the planning area can expect 13 fatal crashes per year. Shannon County can expect 7.

b. Air

Air transportation incidents may occur in the planning area, however the probability of occurrence is low.

c. Rail

Due to the absence of railways in the planning area, the probability of rail related incidents is 0%.

d. Hazardous Materials

At the state level, 760 events totaling \$6,537,056 in damages over a 51 year time span suggests that South Dakota experiences 18 transportation incidents involving hazardous materials and \$159,440 in related damage each year. The probability of occurrence is higher on main transportation thoroughfare in the planning area such as Highway 18. Highway 18 passes through Oglala, Pine Ridge, and Martin.

e. Pipeline

There are neither interstate nor intrastate oil and gas pipelines, gas transmission pipelines, nor hazardous liquid pipelines in the planning area. Thus, the probability of occurrence for these type of pipeline incidents is 0%. There are propane pipelines in the planning area, however, there is a lack of information regarding the location of these pipelines.

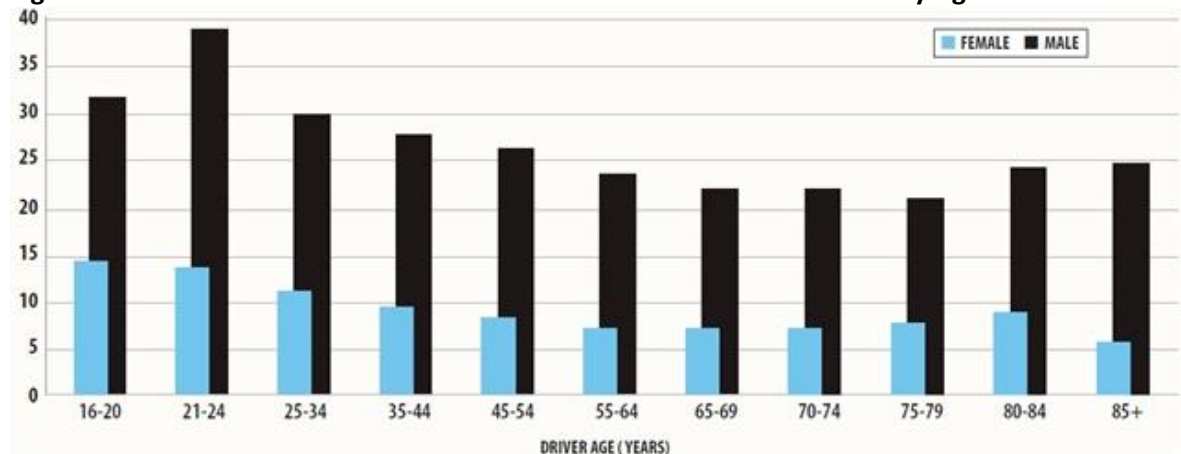
Extent

Transportation incidents can occur anywhere in the planning area. The extent of automobile and air incidents is usually localized, however catastrophic events may require assistance from other jurisdictions. The extent of hazardous material incidents depends on the type hazardous material, the amount of dispersion, and the area of dispersion.

Vulnerability

Of the types of transportation incidents discussed in this report, the planning area is most vulnerable to automobile incidents. While anyone can suffer from automobile accidents, males ages 21 to 24 are more likely to be involved in automobile accidents. The following figure indicate the involvement rate by age group and sex.

Figure 52: Driver Involvement Rate in all Automobile Accidents in the US by Age and Sex.



Source: National Highway Traffic Safety Administration

For air and hazardous material incidents, vulnerability is highest for those directly engaging in such activity, such as pilots or truck drivers. The general public is also vulnerable to these incidents, however, the likelihood of involvement is minimal. There may also be higher vulnerability along transportation corridors.

Future development may increase traffic within the planning area. Development which occurs near major transportation corridors may make the population more vulnerable to transportation accidents.

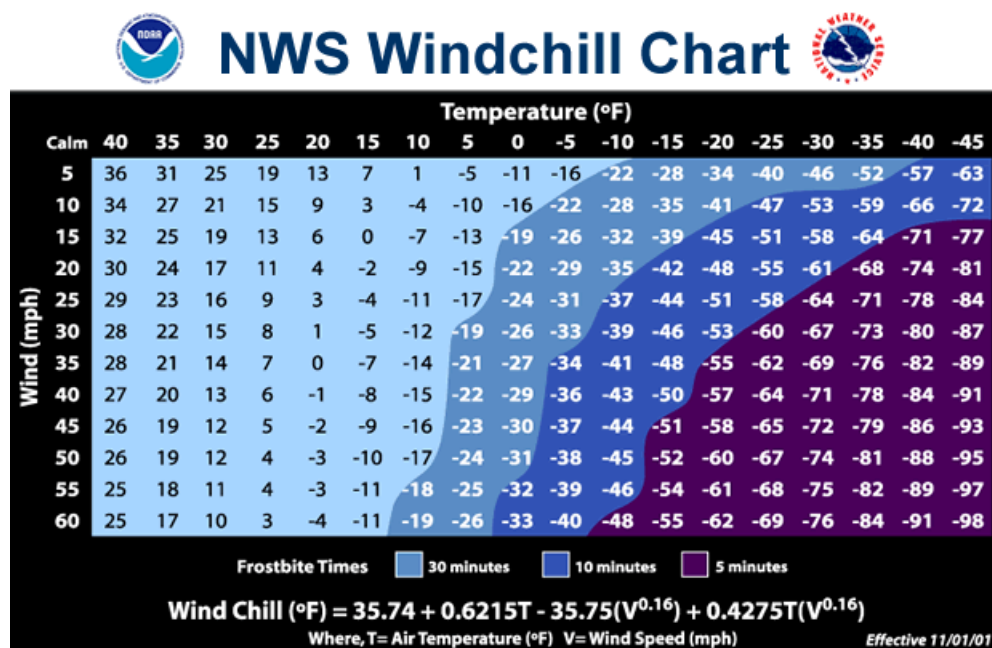
Winter Storms

A major winter storm can last for several days and be accompanied by high winds, freezing rain or sleet, heavy snowfall, and cold temperatures. The National Weather Service describes different types of winter storm events as follows:

- **Blizzard**—Winds of 35 mph or more with snow and blowing snow reducing visibility to less than 1/4 mile for at least three hours.
- **Blowing Snow**—Wind-driven snow that reduces visibility. Blowing snow may be falling snow and/or snow on the ground picked up by the wind.
- **Snow Squalls**—Brief, intense snow showers accompanied by strong, gusty winds. Accumulation may be significant.
- **Snow Showers**—Snow falling at varying intensities for brief periods of time. Some accumulation is possible.
- **Freezing Rain**—Measurable rain that falls onto a surface with a temperature below freezing. This causes it to freeze to surfaces, such as trees, cars, and roads, forming a coating or glaze of ice. Most freezing-rain events are short lived and occur near sunrise between the months of December and March.
- **Sleet**—Rain drops that freeze into ice pellets before reaching the ground. Sleet usually bounces when hitting a surface and does not stick to objects.

Wind can greatly amplify the impact of cold ambient air temperatures. The figure below, provided by the National Weather Service, shows the relationship of wind speed to apparent temperature and typical time periods for the onset of frostbite.

Figure 53: Wind Chill Chart



Source: National Weather Service

Severe winter storms are an annual occurrence in South Dakota. Winter storms can bring extreme cold, freezing rain, and heavy or drifting snow creating blizzards. Blizzards are particularly dangerous due to drifting snow and the potential for rapidly occurring whiteout conditions which greatly inhibit vehicular traffic. Generally, winter storms occur between the months of January and March, but can occur as early as September and as late as April. Heavy snow is usually the most defining element of a winter storm. Large snow events can cripple an entire jurisdiction by hindering transportation, knocking down tree limbs and utility lines, and causing structural damage to buildings.

Along with snow events, winter storms also have the potential to deposit significant amounts of ice. Ice buildup on tree limbs and power lines can cause them to collapse. This is most likely to occur when ice falls in the form of rain that freezes upon contact, especially in the presence of wind. Ice can also lead to many problems on the roads as it makes them slick, causing automobile accidents, and making vehicle travel difficult.

Along with snow and ice storm events, extreme cold can be dangerous to the well-being of people and animals. What constitutes extreme cold varies from region to region but is generally accepted as being temperatures that vary significantly from the average low temperature. For the region, the coldest months of the year are January, February, March, November and December. The average low for these months are all below freezing (average low for the five months 15.8°F). The average high temperatures for the months of January, February, and December are near 38°F. Record lows for the region range from -40°F in January and December, -39°F in February, and -27°F in March. Whenever temperatures

drop decidedly below normal and as wind speeds increase people are at greater risk of hypothermia and frostbite, and when exposure lasts long enough, it can cause death.

Historical Occurrences

According to the National Climatic Data Center (NCDC) there have been a total of 66 winter weather events and 23 wind – winter weather events between 1950 and 2013. It is important to note that the NCDC data base does not provide an accurate listing of all winter weather events, but it does provide data on reported events and can give a feel for the types of damages and frequency of winter weather. The table below illustrates damages, injuries and fatalities as reported within the NCDC database. It is worth noting that the Pine Ridge Reservation totals include data from Shannon County as well.

Table 56: Winter Weather Damage

Jurisdiction	Hazard	Property Damages	Crop Damages	Injuries	Fatalities
Pine Ridge Reservation	Wind - Winter Weather	\$1,145,631.42	N/A	3	N/A
Pine Ridge Reservation	Winter Weather	\$12,626,508.38	\$559,154.94	1	4
Shannon County	Wind - Winter Weather	\$383,414.70	N/A	1	N/A
Shannon County	Winter Weather	\$4,105,741.33	\$158,604.72	N/A	N/A

The following is a list of NCDC descriptions of Winter Storm events:

- Shannon County, 10/26/1996: A winter storm with heavy snow and gusty northwest winds created blizzard-like conditions over western South Dakota. The heaviest snow fell in the central and northern Black Hills where one to two feet was common. Lead received 38.9 inches, setting an all-time state record for 24 hour snowfall. Winds frequently gusted over 45 mph, reducing visibility to zero and creating drifts several feet deep. Many roads in the Lead-Deadwood area were blocked for over 24 hours. The wet heavy snow downed numerous power lines and poles. Electric service to some rural areas was out for five days. Damage to power lines and poles in western South Dakota was estimated near \$600,000.

According to the U.S. Department of Agriculture's Risk Management Agency, during the 13-year period from 2000-2013, combined crop insurance payments for damages resulting from winter storms totaled \$59,116,052.87.

The table below provides a summary of insured crop losses as a result of drought.

Table 57: Annual Losses for Insured Crops Due to Winter Storms for Shannon County

	Total
2000	\$26,412.00
2001	\$133,088.00
2002	\$175,580.00
2003	\$8,555.00
2004	\$5,379.00

2005	\$34,294.00
2006	\$30,923.00
2007	\$342,761.00
2008	\$61,386.00
2009	\$721,989.00
2010	\$55,561.00
2011	\$239,560.68
2012	\$333,750.94
2013	\$125,440.30
Total	\$2,294,679.92
Average Annual Loss	\$163,905.71
Adjusted Annual Loss	\$183,482.95

Source: <http://www.rma.usda>.

Probability of Occurrence

Based upon the historic occurrences, it is highly likely that severe winter weather will continue to occur frequently within the planning area. The historic data shows an annual recurrence interval of 1.43.

Extent

The Sperry-Piltz Ice Accumulation Index (SPIA) was developed by the National Weather Service to predict the accumulation of ice and resulting damages. The SPIA looks at total precipitation, wind, and temperatures to predict the intensity of ice storms.

Figure 54: Sperry-Piltz Ice Accumulation Index

The Sperry-Piltz Ice Accumulation Index, or “SPIA Index” – Copyright, February, 2009

ICE DAMAGE INDEX	* AVERAGE NWS ICE AMOUNT (in inches) <small>*Revised-October, 2011</small>	WIND (mph)	DAMAGE AND IMPACT DESCRIPTIONS
0	< 0.25	< 15	Minimal risk of damage to exposed utility systems; no alerts or advisories needed for crews, few outages.
1	0.10 – 0.25	15 - 25	Some isolated or localized utility interruptions are possible, typically lasting only a few hours. Roads and bridges may become slick and hazardous.
	0.25 – 0.50	> 15	
2	0.10 – 0.25	25 - 35	Scattered utility interruptions expected, typically lasting 12 to 24 hours. Roads and travel conditions may be extremely hazardous due to ice accumulation.
	0.25 – 0.50	15 - 25	
	0.50 – 0.75	< 15	
3	0.10 – 0.25	> = 35	Numerous utility interruptions with some damage to main feeder lines and equipment expected. Tree limb damage is excessive. Outages lasting 1 – 5 days.
	0.25 – 0.50	25 - 35	
	0.50 – 0.75	15 - 25	
	0.75 – 1.00	< 15	
4	0.25 – 0.50	> = 35	Prolonged & widespread utility interruptions with extensive damage to main distribution feeder lines & some high voltage transmission lines/structures. Outages lasting 5 – 10 days.
	0.50 – 0.75	25 - 35	
	0.75 – 1.00	15 - 25	
	1.00 – 1.50	< 15	
5	0.50 – 0.75	> = 35	Catastrophic damage to entire exposed utility systems, including both distribution and transmission networks. Outages could last several weeks in some areas. Shelters needed.
	0.75 – 1.00	> = 25	
	1.00 – 1.50	> = 15	
	> 1.50	Any	

(Categories of damage are based upon combinations of precipitation totals, temperatures and wind speeds/directions.)

The planning area has experienced impacts along the full range of the SPIA Index.

Vulnerability

Heavy accumulations of ice, often the result of freezing rain, can bring down trees, utility poles, and communications towers and disrupt communications and power for days. Even small accumulations of ice can be extremely dangerous to motorists and pedestrians.

Severe winter storms include extreme cold, heavy snowfall, ice, and strong winds which can push the wind chill well below zero degrees in the planning area. Heavy snow can bring a community to a standstill by inhibiting transportation (in whiteout conditions), weighing down utility lines, and by causing structural collapse in buildings not designed to withstand the weight of the snow. Repair and snow removal costs can be significant. Ice buildup can collapse utility lines and communication towers, as well as make transportation difficult and hazardous. Ice can also become a problem on roadways if the air temperature is high enough so that precipitation falls as freezing rain rather than snow.

Extreme cold often accompanies severe winter storms and can lead to hypothermia and frostbite in people who are exposed to the weather without adequate clothing protection. Cold can cause fuel to congeal in storage tanks and supply lines, stopping electric generators. Cold temperatures can also overpower a building's heating system and cause water and sewer pipes to freeze and rupture. Extreme cold also increases the likelihood for ice jams on flat rivers or streams. When combined with high winds from winter storms, extreme cold becomes extreme wind chill, which is extremely hazardous to health and safety.

The National Institute on Aging estimates that more than 2.5 million Americans are especially vulnerable to hypothermia, with the isolated elderly being most at risk. About 10 percent of people over the age of 65 have some kind of temperature-regulating defect, and 3-4 percent of all hospital patients over 65 are hypothermic.

Also at risk are those without shelter or who are stranded, or who live in a home that is poorly insulated or without heat. Other impacts of extreme cold include asphyxiation (unconsciousness or death from a lack of oxygen) from toxic fumes from emergency heaters; household fires, which can be caused by fireplaces and emergency heaters; and frozen/burst pipes. Extreme cold can also prove deadly to livestock.

The entire planning area is vulnerable to the impacts of severe winter weather. Any future development will also be vulnerable to the impacts of severe winter weather. The community is also concerned about the historic problems concerning a lack of propane during winter months. Increased development may also create a higher demand for propane fuel.

There are many strategies that can be undertaken to protect both existing and future assets. The planning area can incorporate "living snow fences" into any future development. "Living snow fences" are strategically placed trees and shrubs that act as a wind and snow block, reducing snow drifts and decreasing amounts of snow that would otherwise blow across flat areas. OST and Shannon County can also work with the utility providers to bury power lines to reduce the chance of power outages resulting from severe winter storms and ice storms. New public buildings can be designed with redundant power supplies to ensure continuity of government services. Building codes can be enhanced to prohibit flat

roofs and to increase facility strengths to withstand greater snow loads. Stakeholder groups in the area play a significant role in assisting and protecting vulnerable populations during and following severe winter storms.

Wildfires

The U.S National Park Service defines wildland fires as any non-structure fire, other than prescribed fire, that occurs in the Wildland. Wildfires are frequently associated with lightning and drought conditions, as dry conditions make vegetation more flammable. As new development encroaches into the wildland/urban interface more and more structures and people are at risk. On occasion, ranchers and farmers intentionally set fire to vegetation to restore soil nutrients or alter the existing vegetation growth. Also, individuals in rural areas frequently burn trash, leaves and other vegetation debris. These fires have the potential to get out of control and turn into wildfires.

The risk of wildfires is a real threat to landowners across the state. The National Weather Service monitors the conditions supportive of wildfires in the state on a daily basis so that wildfires can be predicted, if not prevented.

The risk factors considered are:

- High temperature
- High wind speed
- Fuel moisture (greenness of vegetation)
- Low humidity
- Small cloud cover

According to FEMA, periods of drought and dry conditions throughout the year greatly increase the potential for wildland fires and contribute to extreme wildfires. During a severe drought, large wildfires are common with windy days and steep slopes, which can cause wildfires to spread rapidly and become out of control in a very short time period.

Wildfires can cause extensive damage, both to property and human life. The damages caused by wildfires extend past the loss of building stock, recreation areas, timber, forage, wildlife habitat, and scenic views. In addition, the secondary effects of wildfires, including erosion, landslides, introduction of invasive species, and changes in water quality, all increase due to the exposure of bare ground and loss of vegetative cover following a wildfire, are often more disastrous than the fire itself.

Historical Occurrence

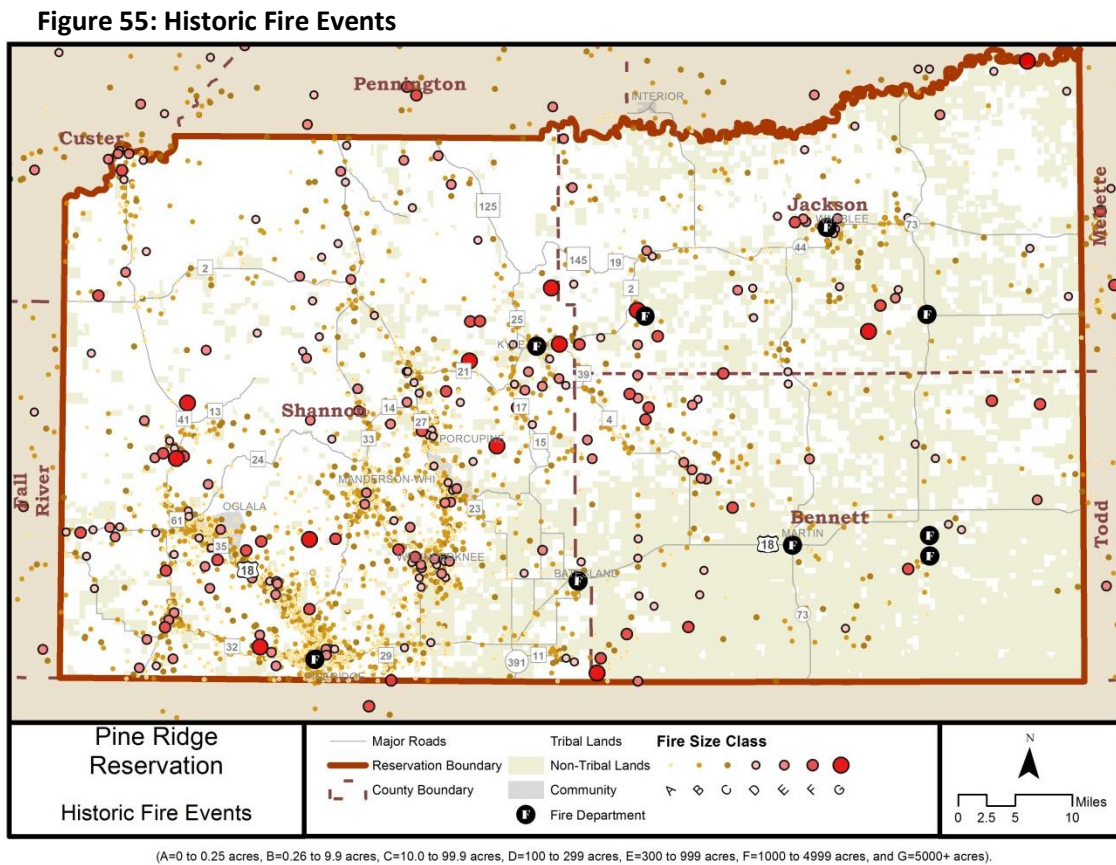
The planning area has experienced 6,712 wildfires between 1992 and 2010. The cause of these fires is listed in table 58 below.

Table 58: Number of Wildfires by Cause, 1992-2010

Cause of Wildfire	Number of Events
Arson	86
Campfire	69
Children	2191

Debris Burning	2053
Equipment Use	644
Fireworks	22
Lightning	433
Miscellaneous	973
Missing/Not Specified	40
Powerline	3
Railroad	13
Smoking	178
Structure	7
Grand Total	6712

Figure 55 indicate the spatial location of these historic events:



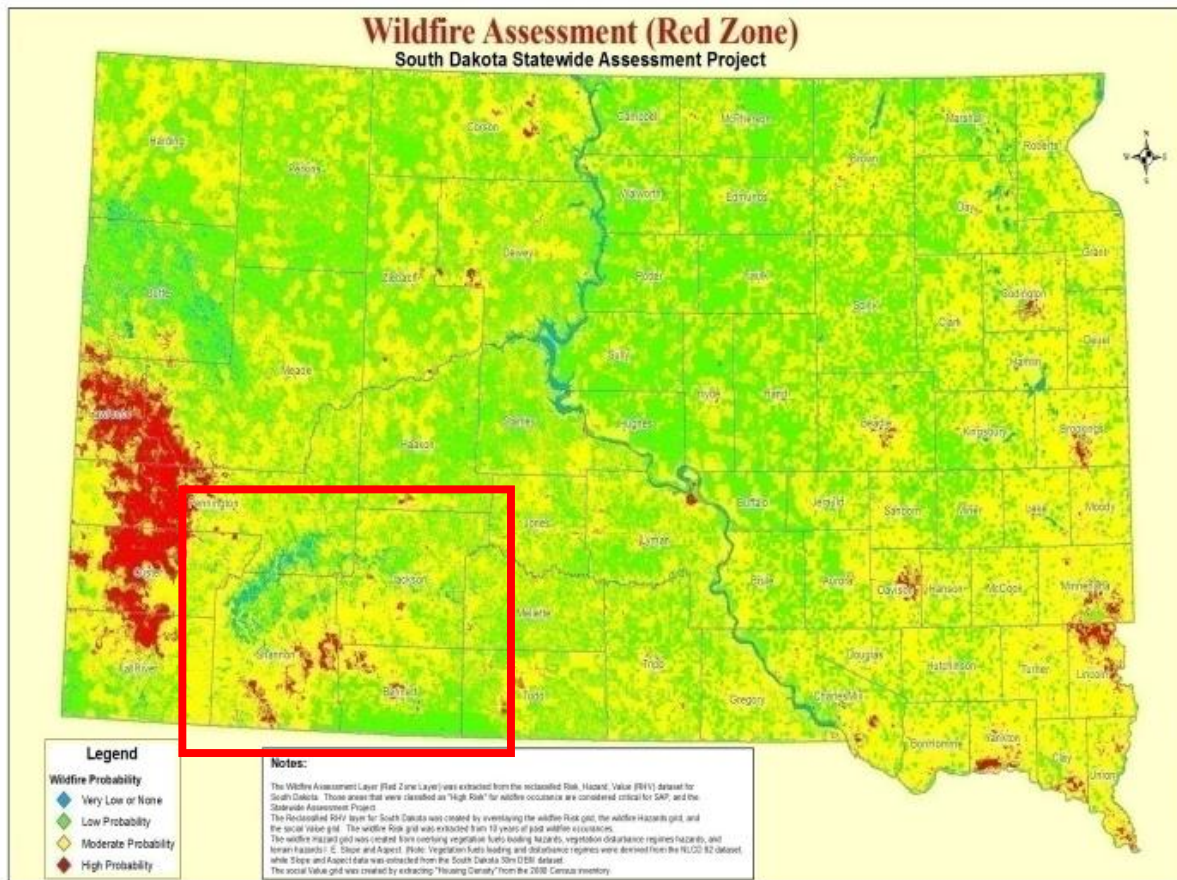
Shannon County has a relatively low number of acres that are in permanent vegetative cover through the Conservation Reserve Program (CRP). For South Dakota's 66 counties, Shannon had the fourth fewest number of acres in the program with 866 in 2013. There is an additional 2,646,241 acres under federal ownership.

Probability of Occurrence

The probability of wildfires occurring in the planning area is relatively high compared to other areas within South Dakota. The state hazard mitigation plan also indicates that Shannon County is the most vulnerable to wildfires within the planning area (see figure 48).

Shannon was one of the top 10 counties for population percent change between 2000 and 2011. As population increases in these counties the vulnerability to wildland and prairie fires also increases. The State's hazard mitigation plan indicates the most vulnerable area's within South Dakota to wildfire. The red box indicates Shannon County. Based on 6,712 events over 19 years, the annual recurrence interval is 353.

Figure 56: Wildfire Assessment



Source: South Dakota Multi-Hazard Mitigation Plan

Extent

Wildfires may occur throughout the entire planning area, however, based on historical occurrences, they predominately occur within Shannon County.

Vulnerability

The County is covered with numerous grassland areas as well as some forested areas. Future development is not an issue in regards to wildfire, as development will not be occurring in heavily forested areas. Mitigation measures such as burn bans have been regularly implemented but have not completely solved the wildfire situation. The local media and governmental officials have attempted to educate the public and rural residents on the dangers of drought conditions in regards to wildfire instances. Rural fire departments within the county have been very successful in containing wildfires that do occur.

Shannon was one of the top 10 counties for population percent change between 2000 and 2011. As population increases in these counties the vulnerability to wildland and prairie fires also increases. The State's hazard mitigation plan indicates the most vulnerable area's within South Dakota to wildfire. The red box indicates Shannon County.

The Bureau of Indian Affairs also maintains a Wildland Fire Plan.

Terrorism

Note: This hazard is profiled only for Shannon County

According to the FBI, there is no single, universally accepted, definition of terrorism. Terrorism is defined in the Code of Federal Regulations as "the unlawful use of force and violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives" (28 C.F.R. Section 0.85).

The FBI further describes terrorism as either domestic or international, depending on the origin, base, and objectives of the terrorist organization. For the purpose of this report, the FBI will use the following definitions:

- Domestic terrorism is the unlawful use, or threatened use, of force or violence by a group or individual based and operating entirely within the United States or Puerto Rico without foreign direction committed against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof in furtherance of political or social objectives.
- International terrorism involves violent acts or acts dangerous to human life that are a violation of the criminal laws of the United States or any state, or that would be a criminal violation if committed within the jurisdiction of the United States or any state. These acts appear to be intended to intimidate or coerce a civilian population, influence the policy of a government by intimidation or coercion, or affect the conduct of a government by assassination or kidnapping. International terrorist acts occur outside the United States or transcend national boundaries in terms of the means by which they are accomplished, the persons they appear intended to coerce or intimidate, or the locale in which their perpetrators operate or seek asylum.

There are different types of terrorism depending on the target of attack, which are:

- Political Terrorism
- Bio-Terrorism
- Cyber-Terrorism
- Eco-Terrorism

- Nuclear-Terrorism
- Narco-terrorism

For more discussion on bioterrorism, see the hazard profile section in the report concerning communicable diseases.

Terrorist activities are also classified based on motivation behind the event such as ideology (i.e. religious fundamentalism, national separatist movements, and social revolutionary movements). Terrorism can also be random with no ties to ideological reasoning.

The FBI also provides clear definitions of a terrorist incident and prevention:

- A terrorist *incident* is a violent act or an act dangerous to human life, in violation of the criminal laws of the United States, or of any state, to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives.
- Terrorism *prevention* is a documented instance in which a violent act by a known or suspected terrorist group or individual with the means and a proven propensity for violence is successfully interdicted through investigative activity.

Primarily, threat assessment, mitigation and response to terrorism are federal and state directives and work primarily with local law enforcement. The Office of Infrastructure Protection within the Federal Department of Homeland Security is a component within the National Programs and Protection Directorate.

The Office of Infrastructure Protection leads the coordinated national program to reduce and mitigate risk within 18 national critical infrastructure and key resources (CIKR) sectors from acts of terrorism and natural disasters and to strengthen sectors' ability to respond and quickly recover from an attack or other emergency. This is done through the National Infrastructure Protection Plan (NIPP).

Under the NIPP, a Sector-Specific Agency (SSA) is the federal agency assigned to lead a collaborative process for infrastructure protection for each of the 18 sectors. The NIPP's comprehensive framework allows the Office of Infrastructure Protection to provide the cross-sector coordination and collaboration needed to set national priorities, goals, and requirements for effective allocation of resources. More importantly, the NIPP framework integrates a broad range of public and private CIKR protection activities.

The Sector-Specific Agencies provide guidance about the NIPP framework to state, tribal, territorial and local homeland security agencies and personnel. They coordinate NIPP implementation within the sector, which involves developing and sustaining partnerships and information-sharing processes, as well as assisting with contingency planning and incident management.

The Office of Infrastructure Protection has Sector-Specific Agency responsibility for six of the 18 CIKR sectors. Those six are:

- Chemical
- Commercial Facilities
- Critical Manufacturing

- Dams
- Emergency Services
- Nuclear Reactors, Materials and Waste

Sector-Specific Agency responsibility for the other 12 CIKR sectors is held by other Department of Homeland Security components and other federal agencies. Those 12 are:

- Agriculture and Food – Department of Agriculture; Food and Drug Administration
- Banking and Finance – Department of the Treasury
- Communications – Department of Homeland Security
- Defense Industrial Base – Department of Defense
- Energy – Department of Energy
- Government Facilities – Department of Homeland Security
- Information Technology – Department of Homeland Security
- National Monuments and Icons – Department of the Interior
- Postal and Shipping – Transportation Security Administration
- Healthcare and Public Health – Department of Health and Human Services
- Transportation Systems – Transportation Security Administration; U.S. Coast Guard
- Water – Environmental Protection Agency

The NIPP requires that each Sector-Specific Agency prepare a Sector-Specific Plan, review it annually, and update it as appropriate.

The Department of Homeland Security and its affiliated agencies are responsible for disseminating any information regarding terrorist activities in the country. The system in place is the National Terrorism Advisory System (NTAS). NTAS replaced the Homeland Security Advisory System (HSAS) which was the color coded system put in place after the September 11th attacks by Presidential Directive 5 and 8 in March of 2002. NTAS replaced HSAS in 2011.

NTAS is based on a system of analyzing threat levels and providing either an imminent threat alert or an elevated threat alert.

An ***Imminent Threat Alert*** warns of a credible, specific and impending terrorist threat against the United States.

An ***Elevated Threat Alert*** warns of a credible terrorist threat against the United States.

The Department of Homeland Security, in conjunction with other federal agencies, will decide whether a threat alert of one kind or the other should be issued should credible information be available.

Each alert provides a statement summarizing the potential threat and what, if anything should be done to ensure public safety.

The NTAS Alerts will be based on the nature of the threat: in some cases, alerts will be sent directly to law enforcement or affected areas of the private sector, while in others, alerts will be issued more broadly to the American people through both official and media channels.

An individual threat alert is issued for a specific time period and then automatically expires. It may be extended if new information becomes available or the threat evolves. The ***sunset provision*** contains a specific date when the alert expires as there will not be a constant NTAS Alert or blanket warning that there is an overarching threat. If threat information changes for an alert, the Secretary of Homeland

Security may announce an updated NTAS Alert. All changes, including the announcement that cancels an NTAS Alert, will be distributed the same way as the original alert.

Historical Occurrences

Currently there is not a history of terrorist attacks within the planning area. Further, it is difficult to predict the damages that could occur from such an event.

Probability of Occurrences

Acts of terrorism are by their very nature unpredictable. It is not possible to assign a probability of occurrence.

Extent

Acts of terrorism vary greatly in terms of their impacts. As such the potential extent of this hazard is very difficult to quantify.

Vulnerability

Some measures and techniques used for mitigating natural hazards may also provide protection against human-caused hazards, such as terrorist events. For example, designing a building to resist the force of a bomb blast will also offer protection from windstorms, and requiring buffer zones around critical facilities can help meet open space requirements and protect wetlands

Future development may also increase the population's vulnerability to terrorist events.

Civil Disorder

Note: This hazard is profiled only for Shannon County

Civil disorder is defined by 18 USCS § 232 as "any public disturbance involving acts of violence by assemblages of three or more persons, which causes an immediate danger of or results in damage or injury to the property or person of any other individual." Civil disorder is often a reaction to major socio-political problems. Examples of civil disorder can include, but are not limited to riots, sit-ins, demonstrations, illegal parades, and strikes. While the events are intended to be demonstration of displeasure, they can become chaotic and lead to violence.

Historical Occurrences

The website of the Oglala Lakota Nation includes historical information and provides the following two descriptions of incidences of civil disorder are provided:

1) The Wounded Knee Massacre

"The Wounded Knee Massacre occurred on December 29, 1890, near Wounded Knee Creek (Lakota: Cankpe Opi Wakpala). On the day before, a detachment of the U.S. 7th Cavalry Regiment commanded by Major Samuel M. Whitside intercepted Spotted Elk's (Big Foot) band

of Miniconjou Lakota and 38 Hunkpapa Lakota near Porcupine Butte and escorted them 5 miles (8.0 km) westward to Wounded Knee Creek where they made camp. The rest of the 7th Cavalry Regiment, led by Colonel James Forsyth, surrounded the encampment, supported by four Hotchkiss guns.

On the morning of December 29, the troops went into the camp to disarm the Lakota. One version of events claims that during the process, a deaf tribesman named Black Coyote was reluctant to give up his rifle, saying he had paid a lot for it. A scuffle over Black Coyote's rifle escalated and a shot was fired, which resulted in the 7th Cavalry opening firing indiscriminately from all sides, killing men, women, and children, as well as some of their fellow troopers. Those few Lakota warriors who still had weapons began shooting back at the troopers, who quickly suppressed the Lakota fire. The surviving Lakota fled, but U.S. cavalrymen pursued and killed many who were unarmed.

In the end, U.S. forces killed at least 150 men, women, and children of the Lakota Sioux and wounded 51 (four men, and 47 women and children, some of whom died later); some estimates placed the number of dead at 300. Twenty-five troopers also died, and thirty-nine were wounded (six of the wounded would also die). Many Army victims were believed to have died by friendly fire, as the shooting took place at close range in chaotic conditions."

2) The Wounded Knee Incident

"In the early 1970s, tribal tensions rose and some turned to the American Indian Movement (AIM) for help. Longstanding divisions on the reservation resulted from deep-seated political, ethnic and cultural differences. Many residents did not support the tribal government. Many residents were upset about what they described as the autocratic and repressive actions by the current tribal president Dick Wilson, elected in 1972. He was criticized for favoring family and friends with jobs and benefits, not consulting with the tribal council, and creating a private militia, Guardians of the Oglala Nation (GOONs), to suppress political opponents, which he paid from tribal funds.

After an attempt to impeach Wilson failed, his opponents had a grassroots uprising. Women elders such as Ellen Moves Camp, founder of the Oglala Sioux Civil Rights Organization (OSCRO), called for action. They organized a public protest.

About 200 AIM and Oglala Lakota activists occupied the hamlet of Wounded Knee on February 27, 1973. They demanded the removal of Wilson, restoration of treaty negotiations with the U.S. government, and correction of U.S. failures to enforce treaty rights. Visits by the U.S. senators from South Dakota, FBI agents and United States Department of Justice (DOJ) representatives, were attended by widespread media coverage, but the Richard Nixon administration was preoccupied internally with Watergate.

As the events evolved, the activists at Wounded Knee had a 71-day armed stand-off with U.S. law enforcement. AIM leaders at the site were Russell Means, Dennis Banks and Carter Camp; traditional spiritual leaders of the Lakota, such as Frank Fools Crow, were also prominent. Fools Crow led Oglala Lakota spiritual ceremonies and practice in their ways for participants. Joseph H. Trimbach of the FBI and Steve Frizell of DOJ led the government.

Casualties of gunfire included a U.S. Marshal, who was seriously wounded and paralyzed; and the deaths of Frank Clearwater, a Cherokee from North Carolina, and Buddy Lamont, a local Oglala Lakota. After Lamont's death, the Oglala Lakota elders called an end to the occupation. Some Lakota have alleged that Ray Robinson, a civil rights activist, was killed during the Wounded Knee occupation, as he disappeared there.

The stand-off ended, but Wilson remained in office. (The U.S. government said it could not remove an elected tribal official as the Oglala Sioux Tribe had sovereignty. Ensuing open conflict between factions caused numerous deaths. The murder rate between March 1, 1973, and March 1, 1976, was 170 per 100,000; it was the highest in the country. More than 60 opponents of the tribal government died violent deaths in the three years following the Wounded Knee Incident, a period called the "Reign of Terror" by many residents. Among those killed was Pedro Bissonette, executive director of the civil rights organization OSCRO. Residents accused officials of failing to try to solve the deaths. In 2000, the FBI released a report that accounted for most of the deaths, and disputed the claims of unsolved murders. AIM representatives criticized the FBI report.

Probability of Occurrences

Civil disorder is often precipitated by problematic social issues and societal trends. While the probability of future civil disturbances is difficult to predict, given past occurrences, civil unrest incidents are possible.

Extent

Acts of civil disorder vary greatly in terms of their impacts and can range from minor to significant events that can disrupt the functioning of a community for weeks or months.

Vulnerability

While the entire planning area is vulnerable to incidences of civil unrest, larger and more densely populated areas may be more vulnerable. Civil disorder may impact community systems, such as police, fire, or emergency response. Transportation can also be impacted if transit routes are blocked, such as Highway 18, SD 87, 29 and 75, BIA 2, 27, 28, 40 and 41.

Future development that increases population density may make the population more vulnerable to this hazard.

Nuclear Accident

Note: This hazard is profiled only for Shannon County

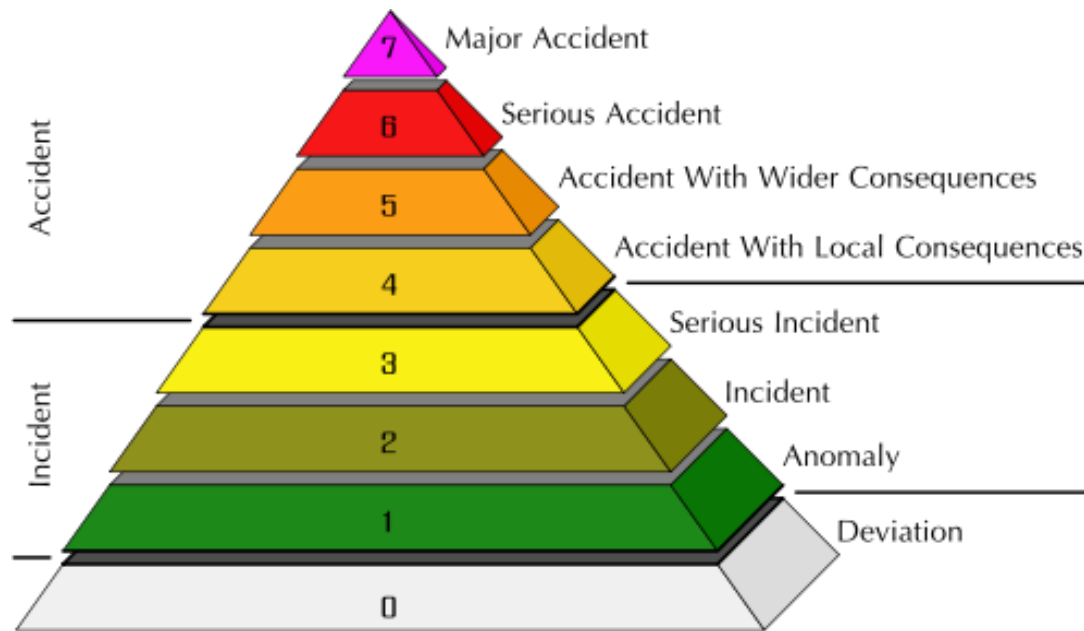
Overview

Nuclear accidents refer to the inadvertent or otherwise accidental release of nuclear material. The International Atomic Energy Agency (IAEA) refers to nuclear material as the metals uranium, plutonium, and thorium, in any form. In June 2008, FEMA released the Nuclear/Radiological Incident Annex, in which they categorized the type's inadvertent releases. A selection of these categories is listed below:

- Commercial Nuclear Facilities
- Weapons Production Facilities
- Lost radioactive material sources
- Transportation accidents involving nuclear/radioactive material
- Domestic nuclear weapons accidents

Nuclear accidents may vary in their intensity. The IAEA released the International Nuclear and Radiological Event Scale (INES) in 1990, which is displayed below:

Figure 57: Nuclear and Radiological Event Scale



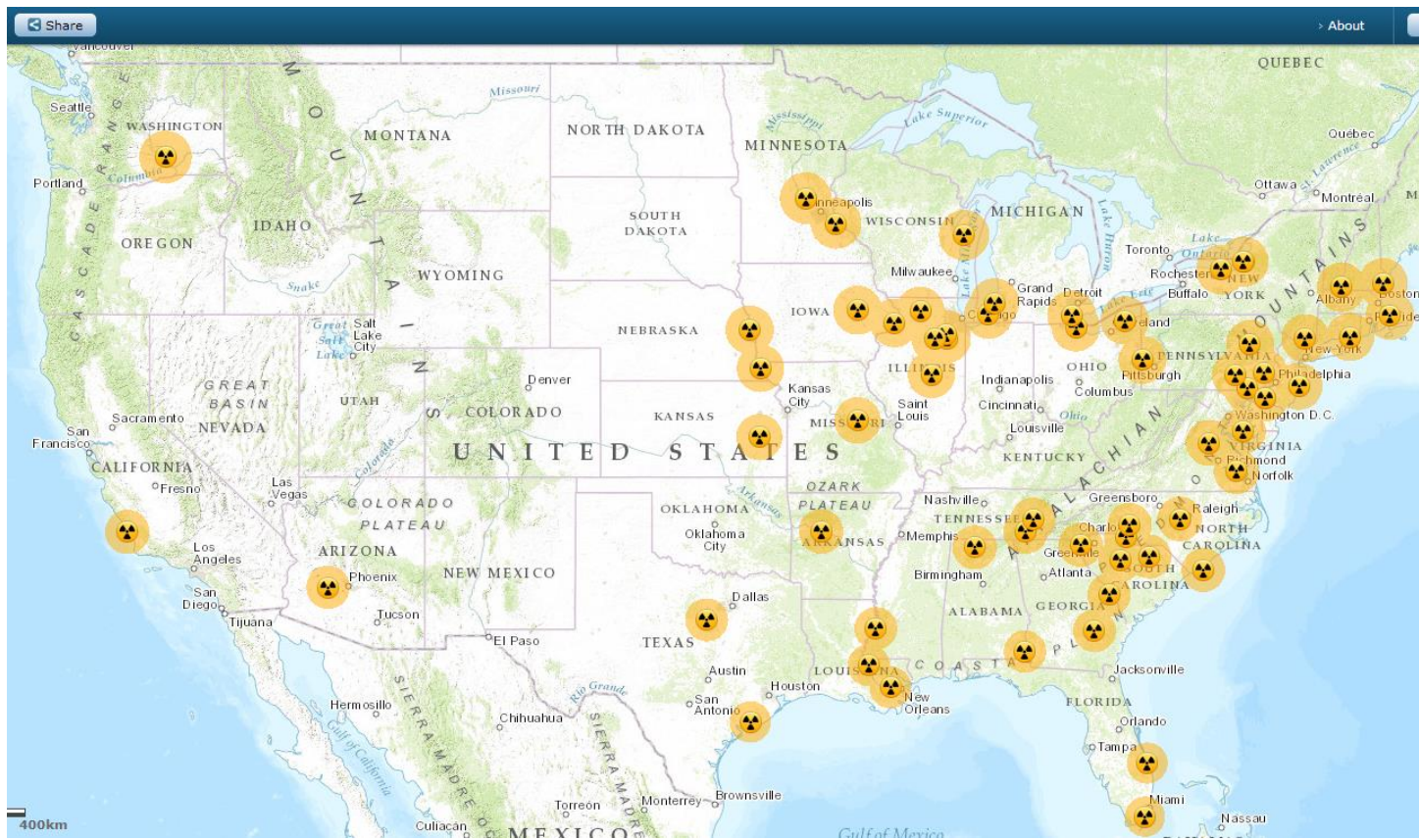
Source: IAEA

Nuclear accidents also vary in their impact on people and the environment, major accidents can lead to immediate catastrophic fatalities, along with long-term latent effects, such as radiation-induced cancer. Serious incidents are often characterized by non-lethal health impacts, such as radiation burns. Nuclear accidents can have serious implications on local economies as well.

“HAZUS-MH data includes all state owned and operated facilities as part of the total numbers of buildings, square feet, dollars and other pertinent information for each county. The inventory also includes 161 hazardous materials sites, 0 military installations, and 0 nuclear power plants.”

In the United States, commercial nuclear facilities are regulated by The U.S. Nuclear Regulatory Commission (NRC). The NRC was created as an independent agency by Congress in 1974 to ensure the safe use of radioactive materials for beneficial civilian purposes while protecting people and the environment. The NRC maintains a list of all nuclear power reactors within the US, which are displayed in the following map.

Figure 58: Location of Nuclear Power Reactors within US, 2014

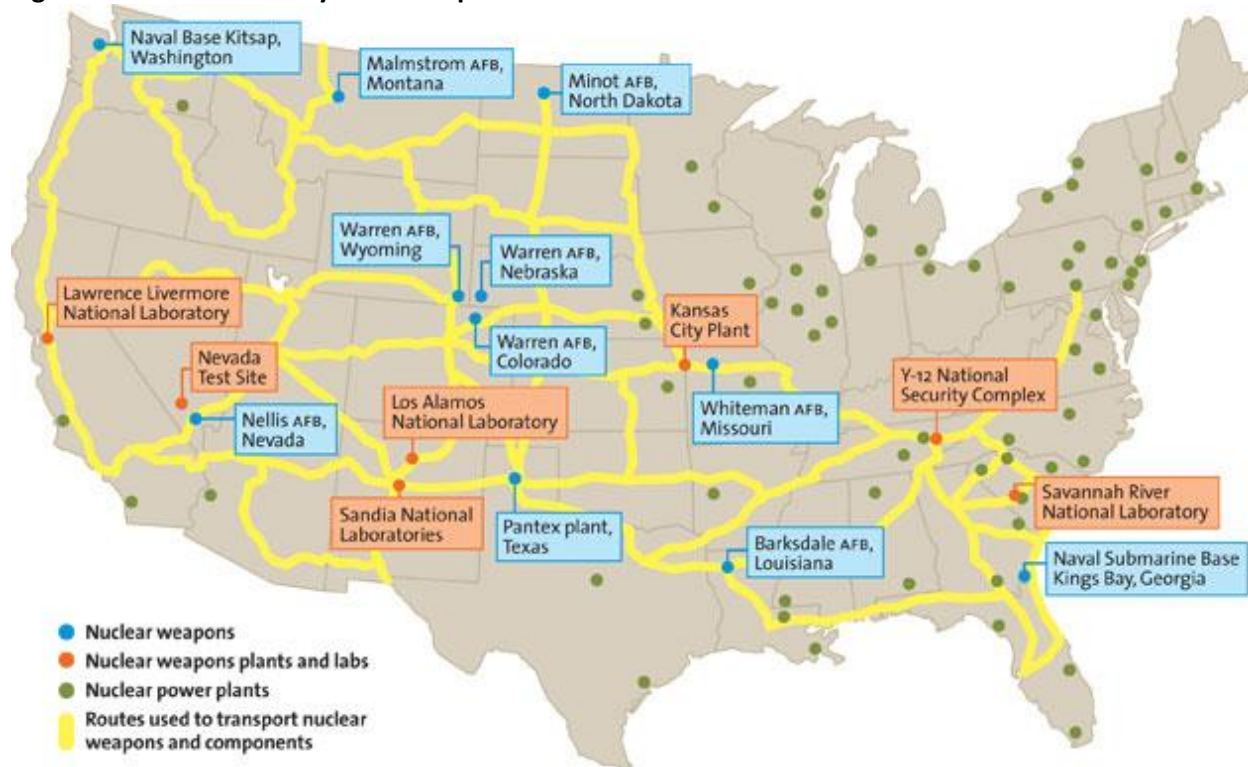


Source: US Nuclear Regulatory Commission; ESRI

There two closest nuclear reactors are located in Nebraska. The Fort Calhoun Station, Unit 1 is 305 miles away from the planning area, located near Blair, Nebraska. The Cooper Nuclear Station is 365 miles away from the planning area, located in Brownsville, Nebraska.

The following map indicates the location of Nuclear power plants, labs, and weapons, along with routes used to transport nuclear weapons and components.

Figure 59: Nuclear Activity and Transportation Routes



Source: Jeff Berlin

Historical Occurrences

The Department of Defense released a report documenting 32 accidents involving nuclear weapons between 1950 and 1980. Of these events, one occurred at Ellsworth Air Force Base South Dakota on December 5th, 1964. Ellsworth Air force base is located outside of the planning area northeast of Rapid City and approximately 35 miles northwest of Shannon County. The following is a narrative of the event, as listed in the DOD report.

“The LGM 30B Minuteman I missile was on strategic alert at Launch Facility (LF) L-02, Ellsworth AFB, South Dakota. Two airmen were dispatched to the LF to repair the inner zone (IZ) security system. In the midst of their checkout of the IZ system, one retrorocket in the spacer below the Reentry Vehicle (RV) fired, causing the RV to fall about 75 feet to the floor of the silo. When the RV struck the bottom of the silo, the arming and fusing/altitude control subsystem containing the batteries was torn loose, thus removing all sources of power from the RV. The RV structure received considerable damage. All safety devices operated properly in that they did not sense the proper sequence of events to allow arming the warhead. There was no detonation or radioactive contamination.”

The Department of Transportation Office of Hazardous Materials Safety reports that there have been 1,161 incidents involving radioactive material, however there is no indication if this material included

nuclear related activity. Three of these events occurred in South Dakota; One in Rapid City and two in Sioux Falls.

Probability of Occurrence

Given the lack of nuclear power reactors in the planning area and the distant location of the closest reactors, the probability of occurrence in the planning area is minimal.

Nuclear accidents involving military transport have occurred in the past, however, based on information released from the U.S Atomic Energy Commission and the Radioactive Material Incident Report database, there have been no incidents in the planning area. As such the probability for occurrence is low, yet may be higher than other rural communities given the transportation routes present between air force bases.

Extent

The United States National Regulatory Commission defines two emergency planning zones. The two types are:

1. The plume exposure pathway EPZ extends about 10 miles in radius around a plant. Its primary concern is the exposure of the public to, and the inhalation of, airborne radioactive contamination.
2. The ingestion pathway EPZ extends about 50 miles in radius around a plant. Its primary concern is the ingestion of food and liquid that is contaminated by radioactivity.

Since the planning area is significantly far from any of the four closest nuclear power plants, the likelihood of the planning being affected from incidents at these facilities is minimal.

Vulnerability

The planning areas level of vulnerability to nuclear accidents is minimal. Areas immediately adjacent to major transportation thoroughfares may be more vulnerable.

Future development in the planning area may increase the population's vulnerability to nuclear accidents. The primary source of vulnerability is through transportation accidents. As such, development along major transportation corridors may increase the population's vulnerability.

Multi-jurisdictional hazard identification methodology

This risk assessment included both an analysis of risk and vulnerability based on data available and a qualitative ranking of risk based upon the input of the HMPT and survey responses from the participating districts and jurisdictions.

Hazard Ranking (per the survey)

Participants in each district of Pine Ridge Reservation and in Batesland were surveyed during the Hazard Mitigation Plan update. The survey asked participants to assess their vulnerability to 12 different

hazards, and were also able to write in additional hazards. For each hazard, participants were asked to rank vulnerability of population, frequency of occurrence, and potential impacts to the economy. These three categories were rated across three intervals: low, medium, and high. Survey respondents were also asked to share information regarding their knowledge of hazard mitigation, actions taken to be prepared, preferred method for notification, etc. A sample survey can be found in Appendix B. It should be noted that these surveys were developed early in the planning process and the exact terminology utilized for the hazards included in the surveys varies slightly from that used in the general document. Additionally, the survey instrument inquired about additional vulnerability parameters, such as impacts to infrastructure, for which no responses were received.

The survey results across all nine districts were averaged in order to obtain an OST hazard ranking. Severe Winter Storms was ranked as one of the top three hazards, in terms of frequency of occurrence, for all nine districts. Severe Winter Storms was also ranked highest in terms of overall vulnerability and in terms of impacts to the economy. Severe Thunderstorms and Extreme heat were ranked as second and third in terms of frequency. Extreme heat was also ranked as third in terms of overall vulnerability and in terms of impacts to the economy. Tornadoes and High Winds were ranked as second in terms of overall vulnerability and second in terms of potential impacts to the economy.

Shannon County utilized a similar instrument for Batesland, and was in agreement with the resulting hazard ranking.

Best way to notify participant/participant's household of potential disaster events

Across all jurisdictions, participants were asked to assess the best way to notify them or their household of potential disaster events. 6 out of 9 districts ranked radio as being the best mode of communication. 3 districts ranked TV alerts as being the best mode of communication. 5 districts ranked TV alerts as the second best mode of communication.

Oglala Sioux Tribal Districts

Porcupine District

For the 12 hazards surveyed, participants reported the highest degree of vulnerability for Severe Winter Storms (10), Wildfire (8), Extreme heat (7), and Tornadoes/High Winds (7). Participants reported the highest intervals of historic occurrence for Severe Winter Storms (10), Extreme Heat (10), and Thunderstorms (10). Participants reported the highest intervals for the potential impact on the economy for Tornadoes/High Winds(8), Severe Winter Storms (7), Wildfire (7), and Extreme Heat (7).

East Nest Wampanoag District

For the 12 hazards surveyed, participants reported the highest degree of vulnerability for Severe Thunderstorms (22), Severe Winter Storms (21), Tornadoes/ High Winds (20), and Extreme heat (20). Participants reported the highest intervals of historic occurrence for Severe Winter Storms (22), Tornadoes/High Winds (21), and Severe Thunderstorms (10). Participants reported the highest intervals for the potential impact on the economy for Severe Winter Storms (21), Tornadoes/High Winds (20), and Severe Thunderstorms (19).

Lacreek – Martin District

For the 12 hazards surveyed, participants reported the highest degree of vulnerability for Tornadoes/ High Winds (8), Extreme heat (6), and Severe Winter Storms (5). Participants reported the highest

intervals of historic occurrence for Severe Winter Storms (6), Drought (5), Severe Thunderstorms (4), Extreme heat (4) and Tornados/ High Winds (4). Participants reported the highest intervals for the potential impact on the economy for Drought (6), Extreme Heat (5), and Wildfire (4).

Wounded Knee

For the 12 hazards surveyed, participants reported the highest degree of vulnerability for Extreme heat (11), Drought (10), and Tornados/ High Winds (9). Participants reported the highest intervals of historic occurrence for Severe Winter Storms (11), Extreme heat (11), and Wildfire (11). Participants reported the highest intervals for the potential impact on the economy for Extreme Heat (8), Drought (7), Tornados/ High Winds (6), Severe Winter Storms (6) and Wildfire (11).

Pine Ridge

For the 12 hazards surveyed, participants reported the highest degree of vulnerability for Tornados/ High Winds (6), Severe Winter Storms (6), and Extreme heat (5). Participants reported the highest intervals of historic occurrence for Extreme Heat (5), Severe Winter Storms (4), Drought (4), and Severe Thunderstorms (4). Participants reported the highest intervals for the potential impact on the economy for Drought (6), Severe Winter Storms (6), Extreme Heat (5), and Severe Thunderstorms (5).

Oglala

For the 12 hazards surveyed, participants reported the highest degree of vulnerability for Severe Thunderstorms (8), Tornados/ High Winds (7), and Severe Winter Storms (7). Participants reported the highest intervals of historic occurrence for Severe Thunderstorms (7), Severe Winter Storms (5), Extreme Heat (4), and Tornados/ High Winds (4). Participants reported the highest intervals for the potential impact on the economy for Tornados/ High Wind (8), Severe Winter Storms (6), and Severe Thunderstorms (5).

Wakapamni District

For the 12 hazards surveyed, participants reported the highest degree of vulnerability for Tornados/ High Winds (9), Severe Winter Storms (9), and Extreme heat (7). Participants reported the highest intervals of historic occurrence for Severe Winter Storms (8), Tornados/ High Winds (7), and Severe Thunderstorms (6). Participants reported the highest intervals for the potential impact on the economy for Tornados/ High Wind (6), Severe Winter Storms (6), and Extreme Heat (6).

Medicine Root

For the 12 hazards surveyed, participants reported the highest degree of vulnerability for Severe Thunderstorms (10), Severe Winter Storms (10), and Tornados/ High Winds (10). Participants reported the highest intervals of historic occurrence for Severe Thunderstorms (13), Severe Winter Storms (13), and Drought (9). Participants reported the highest intervals for the potential impact on the economy for Drought (9), Tornados/ High Wings (9), Flooding (8), Severe Winter Storms (8), and Wildfire (8).

Pass Creek

For the 12 hazards surveyed, participants reported the highest degree of vulnerability for Drought (4), Severe Thunderstorms (4), and Severe Winter Storms (4). Participants reported the highest intervals of historic occurrence for Severe Thunderstorms (5), Drought (4), and Severe Winter Storms (4). Participants reported the highest intervals for the potential impact on the economy for Tornados/ High Winds (4), Severe Thunderstorms (4), and Severe Winter Storms (4).

Shannon County

For the 16 hazards surveyed, the Emergency Manager reported the highest degree of vulnerability for Drought, Urban Fires, Shortage of Critical Materials, Summer Storms, Tornados, Winter Storms, and Wild Fires. The Emergency Manager reported the highest intervals of historic occurrence for Drought, Urban Fires, Summer Storms, Tornados, Winter Storms, and Wildfires. The Emergency Manager reported the highest intervals for the potential impact on the economy for Dam failure, Drought, Hazardous Materials Incidents, Flooding, Urban Fires, Shortage of Critical Materials, Summer Storms, Tornados, Winter Storms, and Wildfires.

Batesland

For the 12 hazards surveyed, participants reported the highest degree of vulnerability for Severe Thunderstorms (12), Severe Winter Storms (10) and Tornados/High Winds (10). Participants reported the highest intervals of historic occurrences for Severe Winter Storms (11), Severe Thunderstorms (8), and Tornado/High Winds (8). Participants reported the highest intervals for potential impact on the economy for Severe Thunderstorms (9), Drought (7), and Wildfire (7). Participants reported the potential for Hazardous Materials Incidents (9).

Risk and Vulnerability Assessment

Based on historical occurrences, potential impact to the economy, and population vulnerability, the HMPT felt that for the planning area, the hazards of greatest concern are 1) Winter Storms 2) Summer Storms, and 3) Drought.

Table 59: Risk Assessment Summary

Hazard	Number of Events	Annual Recurrence Interval	Annual Property / Crops Damage	Critical Facilities In Impact Zone*
Communicable Disease	1,409 (over 4 years)	1409	N/A	Yes
Dam Failure	0 (over 51 years)	0	0	Unk.
Drought	14 (over 14 years)	1	\$615,106.94	N/A
Hazardous Material Incidents	26 (over 45 years)	.57	Unk.	Yes
Flooding	23 (over 19 years)	1.2	\$133,750	Yes
Shallow Landslide	0 (over 14 years)	0	0	Unk.
Urban Fires	Unk.	Unk.	Unk.	Yes
Shortage of Critical Materials	Unk.	Unk.	Unk.	Yes
Summer Storms	60 (over 63 years)	.95	\$54,776.91	Yes

Tornados	23 (over 63 years)	.37	\$122,098	Yes
Transportation Accidents	522 (over 3 years)	174	Unk.	Yes
Winter Storms	89 (over 63 years)	1.43	\$183,482.95	Yes
Wildfires	6,712 (over 19 years)	353	Unk.	Yes
Civil Disorder	2 (over 123 years)	.016	Unk	Yes
Nuclear Accidents	0	Unk.	Unk.	Yes
Terrorism	0	Unk.	Unk.	Yes

*The HMPT used spatial analyzes, such as transportation and floodway buffers, to determine the location of structures and critical facilities within hazard impact zones.

FEMA used Hazus-MH MR2 to model the 1% annual chance (100-yr) flood and to estimate associated building and social losses in Shannon County and the Pine Ridge Reservation, SD. Hazus is a GIS-based natural hazard loss estimation software that uses digital elevation models to generate a flood hazard. While not as accurate as official flood maps, these floodplain boundaries and flood depths are available for use in GIS and could be valuable to communities that have not been mapped by the National Flood Insurance Program. Hazus uses national baseline inventories (buildings and population) combined with modeled flood depth to calculate building losses at the census block –level.

Flooding sources in the county and tribe include the White River, White Clay Creek, and the Little White River. Attached are two maps that show the location of the floodplain boundaries and demonstrate the probability of the flood hazard. The floodplain boundary depicts a flood that has a 1% chance of being equaled or exceeded in any given year. Building loss shown in tables on the map include building repair costs, and the associated loss of building contents and business inventory. These values have been updated with an inflation factor to reflect 2013 building cost and per capita was calculated using 2010 census population numbers. Total loss in Shannon County is \$23.7 million and total loss in the Tribe is \$28.7 million. The zoomed in map of Pine Ridge shows the floodplain overlaid on aerial imagery; flood risk is highest in the western and northern sections of Pine Ridge. The highest estimated building losses on the reservation overall are along the White River in northeast Shannon County and farther upstream near Oglala.

Potential losses derived from HAZUS-MH used default national databases and may contain inaccuracies; loss estimates should be used for planning level applications only.

Critical Facilities at Risk

It is important to determine which critical facilities are the most vulnerable and to estimate their potential loss. By first identifying facilities that are the most likely to be damaged in a hazard event potential mitigation projects are easily identified. In order to identify these potentially damaged facilities, a comparison is taken of critical facilities to hazard prone areas, including floodplains, steep slopes, transportation routes, etcetera.

Flooding: Based upon the 1% flood plain and the list of critical facilities maintained by OST and Shannon County, Porcupine Elementary School is the only critical facility located within the SFHA.

Transportation Accidents and Hazardous Materials Incidents: Table 60 and 61 indicate the number of structures and critical facilities located near transportation corridors.

Table 60: Number of structure within vicinity of transportation corridors.

Towns	Number of Structure
BATESLAND	80
OGLALA	348
PINE RIDGE	1382
Grand Total	1810

Table 61: Number of critical facilities within vicinity of transportation corridors.

Facility Type	Number of Facilities
AIRPORT	2
AMBULANCE	4
EDUCATIONAL	11
FIRE	3
HEALTH	2
LAW	4
NURSING HOME	1
WASTEWATER	2

Landslide: Based upon the USGS landslide susceptibility map, no critical facilities are located within areas considered highly susceptible.

Shannon County Critical Facilities & Areas of Concern List

Prioritized List of Critical Facilities

Category 1: Emergency Response Services and Facilities

- A. Emergency Operations Centers
- B. Police Station
- C. Fire Stations
- D. Public Works / Highway Garage
- E. Emergency Fuel Stations
- F. Emergency Shelters
- G. Evacuation Routes
- H. Communication Towers

Category 2: Facilities & Areas to Protect in a Hazard Event

- I. Emergency Operations Centers

- J. Water Supply Pumps/Tanks/Wells/Reservoirs
- K. Wastewater Treatment Plant
- L. Sewage Pump Stations
- M. Elderly Housing
- N. Daycare Facilities
- O. Commercial - Hazardous Waste or Special Need Properties
- P. Commercial – Area’s Largest Employers
- Q. Recreational Areas
- R. Areas in Floodplain
- S. Power Lines
- T. Schools

The list of areas of concern include:

- Known flooding locations
- Highway systems, air traffic, and rail lines are of concern throughout the entire area.
- Steep slope development areas
- Rural areas susceptible to wildfire and lightning strikes
- Cropland susceptible to hail damage, drought and windstorms
- Residential areas susceptible to urban fire, tornado and wind storms, power outages, civil disorder, terrorism, hazardous material spills, etc..
- Habitat preservation in developing areas along the Cheyenne River and its’ tributaries.
- Water supply
- Septic tank limitations
- Rural development that causes strains on fire, police, and rescue availability
- Non-mapped or unmarked pipelines
- Utility outages
- Black Hills Army Depot (closed)

Section 5: Mitigation Strategy

The primary focus of the mitigation strategy is to establish goals, objectives, and action items, which will identify actions and projects to reduce effects of hazards on existing infrastructure and property in a cost effective and technically feasible fashion. Shannon County elected to participate in the development of new goals for this plan update. However, the HMPT did review the prior Shannon County goals as part of that process. The HMPT established the following Goals and Objectives for the planning area:

Goal 1: Protect Citizens from injuries and loss of life from hazards

- Objective 1.1 Enhance public awareness of natural hazards
- Objective 1.2 Reduce the number of injuries/fatalities from severe weather hazards
- Objective 1.3 Improve the ability to respond and recover from natural disasters

Goal 2: Protect existing and future structures within hazard areas

- Objective 2.1 Reduce the number of structures lost by natural disasters
- Objective 2.2 Minimize the impacts on cultural significant sites from natural disasters

Goal 3: Reduce the losses to critical facilities, utilities, and infrastructure from natural hazards

- Objective 3.1 Reduce adverse impacts to critical facilities and infrastructure

Objective 3.2 Improve warning and communication systems

Goal 4: Preserve the Natural Environment

Objective 4.1 Reduce the impacts to the environment and cultural resources

Objective 4.2 Reduce agricultural losses

Goal 5: Support and assist community mitigation capabilities and efforts

Objective 5.1 Educate and encourage local communities to reduce impacts from disasters

Objective 5.2 Partner with local communities to implement mitigation plans

Goal 6: Improve Emergency Management Capabilities

Objective 6.1 Update and revise the Emergency Response Plan

Objective 6.2 Train emergency response personnel

OST Capability Assessment

FEMA Requirement 201.7(c)(3)(iv) requires a mitigation strategy that addresses the OST pre- and post-disaster hazard mitigation policies, programs and capabilities to mitigate identified hazards.

The OST is regulated by Tribal ordinances, codes and policies that address the Tribe's capacity to implement pre- and post-disaster mitigation activities. The Tribe has many years of experience in managing multiple Federal grants. The Tribe is mandated by Federal law to manage and operate these grants according to prescribed laws and regulations. The Tribe has experienced grant writers and contract and procurement personnel to administer to these grants. Tribal procurement regulations are well defined and adhered to in order to ensure that the grant requirements are fulfilled. The Tribe has a long history of grants management and fiscal responsibility. Federal law requires that these grants are audited annually. The Tribe is dependent on these Federal grants to meet the basic needs of the OST people and take the administration of these grants very seriously.

Hazard Mitigation Grant funding would follow the same processes used by the Tribe to administer to all Federal grants.

Hazard Mitigation Planning is a new concept to the Oglala Sioux Tribe. We have been limited to presidential disaster mitigation projects that were administered by the State of South Dakota. We recognize the shortcomings of the Tribe in preparing to meet the demand required to utilize FEMA pre- and post-disaster mitigation grants. The attached capability assessment table is an indication of the limited capabilities to adequately address the requirements for large mitigation projects.

The OST recognized the need to proceed with the basic mitigation needs for the Reservation. Our first priorities will be limited to adequate training and education for key personnel within the Tribe.

The OST has recently appointed an Emergency Management Committee to address all aspects of the Tribal emergency management function including mitigation activities. One of the priority items will be to train the Tribal Emergency Manager and Committee in all disaster related activities including mitigation planning and mitigation project preparation.

The OST with assistance from the Tribal Emergency Management Committee, will review existing codes, ordinances, resolutions, and policies to ensure that mitigation projects are in compliance and meets BCA criteria. The Tribe understands that many Federal grants, including mitigation project grants require matching funds to support the projects. The OST has finances available to accommodate these matching requirements.

The following table identifies the capabilities within the Tribe:

Table 62: OST Capabilities

Capabilities	Comments
Builder's Plan	Yes, Housing programs
Capital Improvement Plan	N.A.
Tribal Emergency Plan	Yes, in the process of revision
Tribal Recovery Plan	Yes, within Emergency Operations Plan
Local Mitigation Plan	Only County and State plans
Economic Development Plan	Yes, Tribal Economic Development Dept.
Transportation Plan	Yes, OST Transportation Dept.
Land Use Plan	Yes, OST Land Office/BIA Agency
Flood Mitigation Assistance (FMA) Plan	None
Watershed Plan	None
Firewise or other fire mitigation plan	Yes, BIA Wildland Fire Plan
Critical Facilities Plan (Mitigation/Response/Recovery)	Yes, within EOP
Policies/Ordinance	
Zoning Ordinance	None
Building Code	Yes, OST Housing
Floodplain Ordinance	None
Subdivision Ordinance	None
Tree Trimming Ordinance	None
Nuisance Ordinance	Yes, Public Safety Code
Storm Water Ordinance	Yes, Water & Sewer Dept.
Drainage Ordinance	None
Historic Preservation Ordinance	Yes, Tribal Historic Preservation Office
Landscape Ordinance	None
Debris Management Plan	Yes, OST ordinances by district
Programs	
Zoning/Land Use Restrictions	None
Codes Building Site/Design	Yes, OST Housing/Land Office
National Flood Insurance Program (NFIP) Participant	No
NFIP Community Rating System (CRS) Participant	No
Hazard Awareness Program	Yes, EOP identifies
National Weather Service (NWS) Storm Ready	Yes, Emergency Manager
ISO Fire Rating	Yes, BIA Fire Dept.
Property Acquisition	Yes, OST Housing
Planning/Zoning Boards	No
Stream Maintenance Program	Yes, BIA Dam Safety
Tree Trimming Program	No
Engineering Studies for Streams (Local/County/Regional)	Yes, BIA/IHS
Mutual Aid Agreements	Yes, limited to fire
Staff/Department	
Building Code Official	No

Building Inspector	Yes, OST Housing
Mapping Specialist (GIS)	Yes, Public Safety, BIA , College
Engineer	Yes, BIA/IHS, Rural Water
Development Planner	Yes, OST Economic Development
Public Works Official	Yes, OST / BIA / IHS
Emergency Management Coordinator	Yes, Permanent full time
NFIP Floodplain Administrator	No
Emergency Response Team	Yes, FEMA Trained / CERT
Regional Planning Agencies	Yes, BIA / IHS
Historic Preservation	Yes, Tribal Historic Preservation Officer
Non-Governmental Organizations	
American Red Cross	Yes, OST RC agent
Salvation Army	No
Veterans Groups	Yes, active OST organization
Environmental Groups	Yes, OST Environmental Dept.
Homeowner Associations	No
Neighborhood Associations	No
Chamber of Commerce	Yes, Kyle Community
Community Organizations (Lions, Kiwanis, etc.)	No
Local Funding Availability	
Ability to apply for Community Development Block Grants	Yes, very active program
Ability to fund projects through Capital Improvements funding	No
Authority to levy taxes for a specific purpose	Yes, OST Revenue Dept.
Fees for water, sewer, gas, or electric services	Yes, some collections on garbage
Impact fees for new development	Yes, Tribal Employment Rights Office fees
Ability to incur debt through general obligation bonds	Yes
Ability to incur debt through special tax bonds	Yes
Ability to incur debt through private activities	Yes
Ability to withhold spending in hazard prone areas	Yes

Table 62 indicates that OST has significant mitigation capabilities, however, it lacks watershed and FMA plans. Policies and Programs are relatively minimal. OST is not an NFIP participant. The OST has a number of staff/department capabilities. Local funding for mitigation is also available for the OST.

Table 63: Shannon County Capability Assessment

Capabilities	Comments
Builder's Plan	None
Capital Improvement Plan	None
Tribal Emergency Plan	Yes, County EOP
Tribal Recovery Plan	Yes, County EOP
Local Mitigation Plan	Yes
Economic Development Plan	None
Transportation Plan	None
Land Use Plan	None

Flood Mitigation Assistance (FMA) Plan	None
Watershed Plan	None
Firewise or other fire mitigation plan	None
Critical Facilities Plan (Mitigation/Response/Recovery)	Yes, County EOP
Policies/Ordinance	
Zoning Ordinance	None
Building Code	None
Floodplain Ordinance	None
Subdivision Ordinance	None
Tree Trimming Ordinance	None
Nuisance Ordinance	Yes, state law
Storm Water Ordinance	None
Drainage Ordinance	None
Historic Preservation Ordinance	Yes, state historic
Landscape Ordinance	None
Debris Management Plan	None
Programs	
Zoning/Land Use Restrictions	None
Codes Building Site/Design	None
National Flood Insurance Program (NFIP) Participant	None
NFIP Community Rating System (CRS) Participant	None
Hazard Awareness Program	Yes, County EOP
National Weather Service (NWS) Storm Ready	Yes, County EM
ISO Fire Rating	Yes, Batesland fire
Property Acquisition	No
Planning/Zoning Boards	No
Stream Maintenance Program	No
Tree Trimming Program	No
Engineering Studies for Streams (Local/County/Regional)	No
Mutual Aid Agreements	Yes, Batesland fire
Staff/Department	
Building Code Official	No
Building Inspector	No
Mapping Specialist (GIS)	Yes, county
Engineer	No
Development Planner	No
Public Works Official	Yes
Emergency Management Coordinator	Yes
NFIP Floodplain Administrator	No
Emergency Response Team	No
Regional Planning Agencies	No
Historic Preservation	Yes, SD historic
Non-Governmental Organizations	
American Red Cross	Yes

Salvation Army	Yes
Veterans Groups	No
Environmental Groups	No
Homeowner Associations	No
Neighborhood Associations	No
Chamber of Commerce	No
Community Organizations (Lions, Kiwanis, etc.)	No
Local Funding Availability	
Ability to apply for Community Development Block Grants	Yes
Ability to fund projects through Capital Improvements funding	No
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	No
Impact fees for new development	No
Ability to incur debt through general obligation bonds	Yes
Ability to incur debt through special tax bonds	Yes
Ability to incur debt through private activities	Yes
Ability to withhold spending in hazard prone areas	Yes

The hazards identified in the PDM assessments were also addressed in the Shannon County Local Emergency Operation Plan and typically, they were addressed from a planning, response and recovery perspective. There is a related crossover for fires, floods, severe storms, etc. but the LEOP does not specifically address mitigation efforts. The schools have emergency plans to address operations under adverse conditions, but again, lack mitigation strategies. With a formal PDM plan, mitigation can be blended into the future updates of the LEOP and other emergency plans in Shannon County, thus allowing for a more unified approach to the hazards identified.

Status of Prior Hazard Mitigation Actions

The 2003 Fall River and Shannon County Multi-Hazard Pre-Disaster Mitigation Plan identified the following potential projects. The projects were reviewed by the HMPT during the process of this plan and determined to still be relevant. None of these actions has been completed.

Table 64: Prior Hazard Mitigation Actions I

Hazard	Area of Concern	Potential Project (s)
Wildfire Threat	Countywide grasslands.	Enforcement of burn ban as deemed appropriate by officials.
Roadways carrying hazardous materials.	Countywide area, but especially throughout municipalities.	Develop communications plan with rail companies and emergency management officials to ensure that emergency management officials have knowledge of what and when hazardous materials are being transported by rail.
Propane tank explosions	Countywide area	Project in which all pipelines

		throughout the County would be identified and mapped. Propane storage areas identified and mapped.
Power outages due to electrical storms	Countywide	Back-up power supplies for critical buildings.
High Wind & Tornado Damages	Countywide area, and especially throughout municipalities.	*Enforcement of tougher building codes for tornado shelters. * Aggressive education of public on debris clean up and tree thinning. The project would provide free debris pick-up more often for return for participation in the event.
Storm water Discharge	Town of Batesland	Funding will be needed to provide an appropriate storm sewer drainage system in the NE portion of town. An engineering study has been completed and an application for funds is the next step.
Flooding	Countywide	A buyout of the flooded cropland would solve the flooding problem, however the property owners have not yet negotiated a buyout.
Lack of Agreed Upon Evacuation Routes for Rural Municipalities	Rural Countywide Municipalities	Evacuation routes will be developed by County Planning & GIS personnel and copies of the routes will be given to the local municipalities to adopt.

Table 65: Prior Hazard Mitigation Programs II

Project	Responsibility / Oversight	Funding / Support	Timeframe
Develop communications plan throughout all counties with emergency management officials to ensure that emergency management officials have an appropriate knowledge of what and when hazardous materials are being transported.	County Emergency Management	Local / FEMA's Hazard Mitigation Competitive Grant Program	2-3 Years
Soft bank stabilization, which will create fish habitat and stop slope failure along streams.	County highway department	Local / FEMA's Hazard Mitigation Competitive Grant Program	Within the next 1-2 years.

Evacuation Plan for the City of Batesland	Emergency Management	Local / FEMA's Hazard Mitigation Competitive Grant Program	1 ½ years, to be conducted as part of the 5-year review process.
Additional staff to supply training for CERT (Community Emergency Response Team) program.	County EM	Local / FEMA's Hazard Mitigation Competitive Grant Program	1-2 years.
Stricter building codes for tornado shelters throughout the county.	County Departments	Local / FEMA's Hazard Mitigation Competitive Grant Program	1 year.

Current Mitigation Activities

FEMA Requirement 201.7(c)(3)(ii):

“Include a section that identifies and analyzes a comprehensive range of specific action and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.”

The OST/Shannon County Mitigation Plan identified a list of forty six potential mitigation actions for ranking by the Mitigation Planning Team. These mitigation actions were taken from the district surveys collected from the district stakeholders. Additional action items were taken from previous county mitigation plans.

The Mitigation Planning Team met on May 20, 2014 at the OST Prairie Winds Casino to rank the forty six mitigation projects. The Team with sixteen representatives from the OST and Shannon County ranked the projects using the STAPLEE process. The projects were evaluated on negative impact, beneficial impact or no impact for each of the projects.

The OST/Shannon County Mitigation Plan used the following STAPLEE Method to establish the mitigation action priorities:

- | | |
|-------------------------|--|
| S Social | Tribal members and other stakeholders support the overall implementation strategy and specific mitigation actions. Therefore, the projects will have to be evaluated in terms of acceptance by the Indian Tribal government and harmony with social, cultural, and sacred beliefs and customs. |
| T Technical | It is important to determine whether the proposed action is technically feasible, will help to reduce losses in the long term and has minimal secondary impacts. Determine whether the alternative action is a whole or partial solution, or not a solution at all. |
| A Administrative | Under this part of the evaluation criteria, examine the |

anticipated staffing, funding, and maintenance requirements for the mitigation action to determine whether the Indian Tribal government has the personnel and administrative capabilities necessary to implement the action or whether outside help will be needed.

P Political

Understanding how the Indian Tribal government, tribal members, and other political leadership feel about issues related to the environment, economic development, safety, and emergency management. This will provide valuable insight into the level of political support for mitigation activities and programs. Proposed mitigation objectives sometimes fail because of a lack of political acceptability.

L Legal

Without the appropriate legal authority, the action cannot lawfully be undertaken. When considering this criterion, determine whether the Indian Tribal government has the legal authority at the appropriate levels (possibly at levels also affecting jurisdiction over non-tribal members) to implement the action. Each level of government operates under a specific source of delegated authority. Identify the unit of government undertaking the mitigation action and include an analysis of the interrelationships within the Tribal government and with local, regional, State and Federal governments. Legal authority is likely to have a significant role later in the process when the Indian Tribal government will have to determine how mitigation activities can be carried out, and to what extent mitigation policies and programs can be enforced.

E Economic

Every government experiences budget constraints at one time or another. Cost-effective mitigation actions that can be funded in current or upcoming budget cycles are much more likely to be implemented than mitigation actions requiring general obligation bonds or other instruments that would incur long-term debt. Indian Tribal governments with tight budgets or budget shortfalls may be more willing to undertake a mitigation initiative if it can be funded, at least in part, by outside sources. “Big ticket” mitigation actions, such as large-scale acquisition and relocation, are often considered for implementation in a post-disaster scenario when additional Federal or State funding for mitigation may be available.

E Environmental

Impact on the environment is an important consideration because of concern among tribal members for sustainable and environmentally healthy communities and the many statutory considerations, such as NEPA, to keep in mind when using Federal funds. When implementing mitigation actions, Indian Tribal governments will need to evaluate whether there would be negative consequences to environmental or historically

significant assets, such as tribal resources with cultural and religious significance, threatened and endangered species, wetlands, and other protected natural or cultural resources.

The Team was asked to separate the forty six listed projects into three categories; High Priority, Medium Priority, and Low Priority. Some of the listed projects were duplicates or overlapping actions; therefore, the following is a table of the priority ranking for the mitigations projects:

HIGH PRIORITY MITIGATION PROJECTS

1. Anchor mobile homes
2. Rebuild unsafe structures
3. Update Emergency Operations Plan
4. Establish building codes
5. Provide backup generators for critical facilities
6. Education on Mitigation measures
7. Provide Emergency Supply Kits
8. Establish Family shelters
9. Establish School shelters
10. Improve warning systems

MEDIUM PRIORITY MITIGATION PROJECTS

1. Improve Emergency Transportation System
2. Training for First Responder Team
3. Improve Emergency Communication system
4. Seek Mitigation funding for Mitigation projects
5. Instruction on Utility shut-off
6. Guidance for Evacuators
7. Provide sirens in all large population areas
8. Provide for improved weather alert systems

LOW PRIORITY MITIGATION PROJECTS

1. Inventory all assets for critical facility protection
2. Building code enforcement
3. Mutual aid agreements for emergency response
4. Provide for planning and zoning for building projects
5. Educate public on disaster preparation
6. Protect critical facilities in flood zones
7. Provide for structural fire-fighting equipment.

Table 66: Mitigation Project by Goal and Objective Mitigation Activities

Mitigation Project	Goal 1			Goal2		Goal 3		Goal 4		Goal 5		Goal 6	
	Objective			Objective		Objective		Objective		Objective		Objective	
	1.1	1.2	1.3	2.1	2.2	3.1	3.2	4.1	4.2	5.1	5.2	6.1	6.2
Anchor Mobile Homes				x									
Rebuild Unsafe Structures				x									
Update Emergency Operations Plan												x	
Establish Building Codes								x					
Provide Backup Generators for Critical Facilities						x							
Education on Mitigation Measures	x									x			
Provide Emergency Supply Kits		x											
Establish Family Shelters		x											
Establish School Shelters		x											
Improve Warning Systems							x						
Improve Emergency Transportation System			x										
Training for First Responder Team													x
Improve Emergency Communications System			x										
Seek Funding for Mitigation Projects									x				
Instruction on Utility Shut Off										x			
Guidance for Evacuators										x			
Provide Sirens in All Large Pop. Areas							x						
Provide Improved Weather Alert System							x						
Inventory all Assets for Critical Facilities Protection						x							
Building Code Enforcement					x								
Mutual Aid Agreements for Emergency Response											x		
Provide for Planning and Zoning for Building Projects								x					
Educate Public on Disaster Preparation													
Protect Critical Facilities in Flood Zones						x							
Provide for Structural Fire-Fighting Equipment			x										

Table 67: Mitigation Activities Identified

Mitigation Action	OST	Pine Ridge	White Clay	Wakpamni	Wounded Knee	Porcupine	Medicine Root	Pass Creek	Eagle Nest	LaCreek	Shannon County	Batesland
Anchor Mobile Homes	x	x	x	x	x	x		x	x		x	x
Establish Family Shelters	x	x	x	x		x	x	x	x	x	x	x
Establish School Shelters	x	x	x	x	x	x	x	x	x		x	x
Provide Sirens in All Large Population Areas	x			x		x	x			x	x	x
Improve Warning Systems	x		x	x	x	x		x	x	x	x	x
Improve Weather Alert System	x		x	x	x	x		x		x	x	x
Provide Emergency Supply Kits	x	x		x	x	x	x	x	x	x	x	x
Education on Mitigation Measures	x	x	x			x	x	x	x		x	x
Provide Backup Generators for Critical Facilities	x				x			x	x		x	x
Establish Building Codes	x						x				x	x
Improve Emergency	x		x				x		x	x	x	x

Transportation System												
Update Emergency Operations Plan	x	x	x	x	x			x	x	x	x	x
Training for First Responder Team	x	x			x					x	x	x
Rebuild Unsafe Structures	x	x			x			x	x		x	x
Improve Emergency Communication Plan	x						x			x	x	x
Seek Mitigation funding for Mitigation Projects	x						x				x	x
Instruction on Utility Shut Off	x		x	x					x	x	x	x
Guidance for Evacuators	x		x	x		x		x	x		x	x
Inventory all assets for critical facility protection	x										x	x
Mutual aid agreements for emergency response	x										x	x
Provide for	x										x	x

planning and zoning for building projects												
Educate public on disaster preparation	x										x	x
Protect critical facilities in flood zones	x										x	x
Building code enforcement	x										x	x
Provide for structural fire-fighting equipment.	x										x	x

Priority mitigation strategies for the Oglala Sioux Tribe (OST) / Pine Ridge Indian Reservation (PRIR) and Shannon County are as follows:

Table 68: Mitigation Activities for OST/PRIR

Jurisdiction: OST/PRIR	Local Priority (high, medium, low) HIGH	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Shortage of Critical Materials, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 1.2.1: Provide Emergency Supply Kits	
Applicable Goal Statement:	Protect Citizens from injuries and loss of life from hazards	
Issue/Background: Why is this action needed? What is the problem?	Problem: Citizens are without emergency supplies Action: Address family emergency needs	
Responsible Office: Which department in Jurisdiction would implement/track?	Emergency Management	
Partners: Who would help?	District CAP offices	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	Private donations, Faith based organizations	
Cost Estimate:	\$45,000, \$5,000 per district (9)	
Benefits: (Describe Losses Avoided)	Loss of life prevention	
Timeline: (How many months/years to complete?)	1 year, 2015	

Table 69: Mitigation Activities for OST/PRIR

Jurisdiction: OST/PRIR	Local Priority (high, medium, low) HIGH	Hazards Addressed: Civil Disorder, Dam Failure, Hazardous Materials Incidents, Flooding, Nuclear Accident, Urban Fires, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 1.2.2: Establish School Shelters	
Applicable Goal Statement:	Protect Citizens from injuries and loss of life from hazards	

Issue/Background: Why is this action needed? What is the problem?	Problem: No shelter for school children Action: Identify safe areas for all schools
Responsible Office: Which department in Jurisdiction would implement/track?	School Administrators
Partners: Who would help?	Emergency Management
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	FEMA Grants, BIA School Grants
Cost Estimate:	\$500,000; retrofit five schools
Benefits: (Describe Losses Avoided)	Loss of life prevention
Timeline: (How many months/years to complete?)	5 years; 1 school/year

Table 70: Mitigation Activities for OST/PRIR

Jurisdiction: OST/PRIR	Local Priority (high, medium, low) HIGH	Hazards Addressed: Civil Disorder, Dam Failure, Hazardous Materials Incidents, Flooding, Nuclear Accident, Urban Fires, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 1.2.3: Establish Family Shelters	
Applicable Goal Statement:	Protect Citizens from injuries and loss of life from hazards	
Issue/Background: Why is this action needed? What is the problem?	Problem: Families have no shelter Action: Identify safe areas in communities	
Responsible Office: Which department in Jurisdiction would implement/track?	Emergency Management	
Partners: Who would help?	District CAP office; OST Housing Authority	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	Local donations for supplies	
Cost Estimate:	\$10,000 for supplies at shelters	
Benefits: (Describe Losses Avoided)	Loss of life prevention	
Timeline: (How many months/years to complete?)	1 year, 2015	

Table 72: Mitigation Activities for OST/PRIR

Jurisdiction: OST/PRIR	Local Priority (high, medium, low) HIGH	Hazards Addressed: Dam Failure, Nuclear Accident, Shallow Landslide, Summer Storms, Tornados, Winter Storms
Action Title/Description:	Action 2.1.1: Anchor Mobile Homes	
Applicable Goal Statement:	Protect existing and future structures within hazard areas	
Issue/Background: Why is this action needed? What is the problem?	Problem: Mobile homes are vulnerable to high winds Action: Anchor all mobile homes	
Responsible Office: Which department in Jurisdiction would implement/track?	OST Housing Authority OST Housing Improvement Program	
Partners: Who would help?	Emergency Management	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	FEMA Grants; local donations	
Cost Estimate:	\$25,000/year	
Benefits: (Describe Losses Avoided)	Prevent mobile home losses	
Timeline: (How many months/years to complete?)	2 years; existing structures	

Table 73: Mitigation Activities for OST/PRIR

Jurisdiction: OST/PRIR	Local Priority (high, medium, low) HIGH	Hazards Addressed: Dam Failure, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Summer Storms, Terrorism, Tornados, Winter Storms
Action Title/Description:	Action 2.1.2: Rebuild Unsafe Structures	
Applicable Goal Statement:	Protect existing and future structures within hazard areas	
Issue/Background: Why is this action needed? What is the problem?	Problem: Many homes re unsafe to live in Action: Retrofit structures to make them safe	
Responsible Office: Which department in Jurisdiction would implement/track?	OST Housing Improvement Program OST Housing Authority	
Partners: Who would help?	Emergency Management	
Potential Funding Source: (Grants-specific if known, local	BIA Housing Improvement grants	

funds, combination, etc.)	HUD Grants
Cost Estimate:	\$100,000/year
Benefits: (Describe Losses Avoided)	Protect lives and property
Timeline: (How many months/years to complete?)	5 years

Table 74: Mitigation Activities for OST/PRIR

Jurisdiction: OST/PRIR	Local Priority (high, medium, low) HIGH	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Shortage of Critical Materials, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 3.1.2: Provide Backup Generators for Critical Facilities	
Applicable Goal Statement:	Reduce the losses to critical facilities, utilities, and infrastructure from natural hazards	
Issue/Background: Why is this action needed? What is the problem?	Problem: Critical facilities are without power Action: Purchase and install backup generators	
Responsible Office: Which department in Jurisdiction would implement/track?	Owners of critical facilities	
Partners: Who would help?	Emergency Management	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	DHS	
Cost Estimate:	\$100,000	
Benefits: (Describe Losses Avoided)	Avoid loss of facilities	
Timeline: (How many months/years to complete?)	2 years	

Table 75: Mitigation Activities for OST/PRIR

Jurisdiction: OST/PRIR	Local Priority (high, medium, low) HIGH	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Hazardous Materials Incidents, Flooding,
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		Nuclear Accident, Urban Fires, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 3.2.2: Improve Warning Systems	
Applicable Goal Statement:	Reduce the losses to critical facilities, utilities, and infrastructure from natural hazards	
Issue/Background: Why is this action needed? What is the problem?	Problem: Warning systems are non-existent Action: Provide for a better warning/alert system	
Responsible Office: Which department in Jurisdiction would implement/track?	Emergency Management	
Partners: Who would help?	Emergency Management Committee	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	Local donations; local sources	
Cost Estimate:	\$5,000	
Benefits: (Describe Losses Avoided)	Prevent loss of life and critical facilities	
Timeline: (How many months/years to complete?)	1 year	

Table 76: Mitigation Activities for OST/PRIR

Jurisdiction: OST/PRIR	Local Priority (high, medium, low) HIGH	Hazards Addressed: Communicable Disease, Dam Failure, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 4.1.1: Establish Building Codes	
Applicable Goal Statement:	Preserve the Natural Environment	
Issue/Background: Why is this action needed? What is the problem?	Problem: Building codes are non-existent Action: Need to establish building codes	
Responsible Office: Which department in Jurisdiction would implement/track?	OST	
Partners: Who would help?	BIA, HIS, HUD, DHS	

Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	DHS
Cost Estimate:	\$100,000
Benefits: (Describe Losses Avoided)	Preserve buildings
Timeline: (How many months/years to complete?)	3 years

Table 77: Mitigation Activities for OST/PRIR

Jurisdiction: OST/PRIR	Local Priority (high, medium, low) HIGH	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Drought, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Shortage of Critical Materials, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 5.1.1: Education on Mitigation Measures	
Applicable Goal Statement:	Support and assist community mitigation capabilities and efforts	
Issue/Background: Why is this action needed? What is the problem?	Problem: Community residents do not understand mitigation measures Action: Provide education to citizens	
Responsible Office: Which department in Jurisdiction would implement/track?	Emergency Management	
Partners: Who would help?	Schools	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	DHS/FEMA	
Cost Estimate:	\$10,000	
Benefits: (Describe Losses Avoided)	Prevent loss of lives and property	
Timeline: (How many months/years to complete?)	6 months, 2015	

Table 78: Mitigation Activities for OST/PRIR

Jurisdiction:	Local Priority (high, medium, low) HIGH	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Drought,
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OST/PRIR		Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Shortage of Critical Materials, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 6.1.1: Update Emergency Operations Plan	
Applicable Goal Statement:	Improve Emergency Management Capabilities	
Issue/Background: Why is this action needed? What is the problem?	Problem: Emergency Operations Plan is out of date Action: Need improved up-to-date EOP	
Responsible Office: Which department in Jurisdiction would implement/track?	Emergency Management	
Partners: Who would help?	EM Committee	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	In-house	
Cost Estimate:	\$0.00	
Benefits: (Describe Losses Avoided)	Improved response time saves lives and property	
Timeline: (How many months/years to complete?)	1 year	

Table 79: Mitigation Activities for Shannon County

Jurisdiction: Shannon	Local Priority (high, medium, low) HIGH	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Shortage of Critical Materials, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 1.2.1: Provide Emergency Supply Kits	
Applicable Goal Statement:	Protect Citizens from injuries and loss of life from hazards	
Issue/Background: Why is this action needed? What is the problem?	Problem: Citizens lack emergency supplies. Action: Establish minimum supply lists.	

Responsible Office: Which department in Jurisdiction would implement/track?	Emergency Management
Partners: Who would help?	State / Batesland / Red Cross
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	Red Cross, private donations, other VOAD agencies
Cost Estimate:	\$50,000
Benefits: (Describe Losses Avoided)	Prevent loss of life
Timeline: (How many months/years to complete?)	1 year

Table 80: Mitigation Activities for Shannon County

Jurisdiction: Shannon	Local Priority (high, medium, low) HIGH	Hazards Addressed: Civil Disorder, Dam Failure, Hazardous Materials Incidents, Flooding, Nuclear Accident, Urban Fires, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 1.2.2: Establish School Shelters	
Applicable Goal Statement:	Protect Citizens from injuries and loss of life from hazards	
Issue/Background: Why is this action needed? What is the problem?	Problem: Lack of school shelters. Action: Safe area identification,	
Responsible Office: Which department in Jurisdiction would implement/track?	Schools	
Partners: Who would help?	Emergency Management	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	FEMA / DHS / PDM	
Cost Estimate:	\$500,000 to \$1 million	
Benefits: (Describe Losses Avoided)	Loss of life / protect children	
Timeline: (How many months/years to complete?)	5 – 6 years.	

Table 81: Mitigation Activities for Shannon County

Jurisdiction: Shannon	Local Priority (high, medium, low) HIGH	Hazards Addressed: Civil Disorder, Dam Failure, Hazardous Materials Incidents, Flooding, Nuclear Accident, Urban
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		Fires, Summer Storms, Terrorism, Tornadoes, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 1.2.3: Establish Family Shelters	
Applicable Goal Statement:	Protect Citizens from injuries and loss of life from hazards	
Issue/Background: Why is this action needed? What is the problem?	Problem: No shelters. Action: Identify safe areas for shelters.	
Responsible Office: Which department in Jurisdiction would implement/track?	Emergency Management	
Partners: Who would help?	Batesland	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	DHS / FEMA / PDM	
Cost Estimate:	\$25,000	
Benefits: (Describe Losses Avoided)	Prevent loss of life	
Timeline: (How many months/years to complete?)	1 – 2 years	

Table 82: Mitigation Activities for Shannon County

Jurisdiction: Shannon	Local Priority (high, medium, low) HIGH	Hazards Addressed: Dam Failure, Nuclear Accident, Shallow Landslide, Summer Storms, Tornadoes, Winter Storms
Action Title/Description:	Action 2.1.1: Anchor Mobile Homes	
Applicable Goal Statement:	Protect existing and future structures within hazard areas	
Issue/Background: Why is this action needed? What is the problem?	Problem: Prevent loss during storms. Action: Provide anchoring systems (required).	
Responsible Office: Which department in Jurisdiction would implement/track?	Housing authority.	
Partners: Who would help?	State & federal	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	DHS / PDM	
Cost Estimate:	\$100,000	
Benefits: (Describe Losses Avoided)	Prevent loss of life & property	

Timeline: (How many months/years to complete?)	5 years
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Table 83: Mitigation Activities for Shannon County

Jurisdiction: Shannon	Local Priority (high, medium, low) HIGH	Hazards Addressed: Dam Failure, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Summer Storms, Terrorism, Tornados, Winter Storms
Action Title/Description:	Action 2.1.2: Rebuild Unsafe Structures	
Applicable Goal Statement:	Protect existing and future structures within hazard areas	
Issue/Background: Why is this action needed? What is the problem?	Problem: Buildings are not structurally sound. Action: Rebuild unsafe structures.	
Responsible Office: Which department in Jurisdiction would implement/track?	Owners	
Partners: Who would help?	State	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	DHS / PDM	
Cost Estimate:	\$150,000	
Benefits: (Describe Losses Avoided)	Make structure safe	
Timeline: (How many months/years to complete?)	3-5 years	

Table 84: Mitigation Activities for Shannon County

Jurisdiction: Shannon	Local Priority (high, medium, low) HIGH	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Shortage of Critical Materials, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 3.1.2: Provide Backup Generators for Critical Facilities	

Applicable Goal Statement:	Reduce the losses to critical facilities, utilities, and infrastructure from natural hazards
Issue/Background: Why is this action needed? What is the problem?	Problem: Critical facilities lack power. Action: Provide backup generators.
Responsible Office: Which department in Jurisdiction would implement/track?	Owners
Partners: Who would help?	Emergency Management
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	DHS / PDM grants
Cost Estimate:	\$100,000
Benefits: (Describe Losses Avoided)	Avoid loss of critical facilities.
Timeline: (How many months/years to complete?)	2 – 3 years

Table 85: Mitigation Activities for Shannon County

Jurisdiction: Shannon	Local Priority (high, medium, low) HIGH	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Hazardous Materials Incidents, Flooding, Nuclear Accident, Urban Fires, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 3.2.2: Improve Warning Systems	
Applicable Goal Statement:	Reduce the losses to critical facilities, utilities, and infrastructure from natural hazards	
Issue/Background: Why is this action needed? What is the problem?	Problem: No warning systems. Action: Provide warning & alerting system.	
Responsible Office: Which department in Jurisdiction would implement/track?	Emergency Management	
Partners: Who would help?	County Commission	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	DHS grants	
Cost Estimate:	25,000	
Benefits: (Describe Losses Avoided)	Prevent loss of life & injuries	

Timeline: (How many months/years to complete?)	1 year.
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Table 86: Mitigation Activities for Shannon County

Jurisdiction: Shannon	Local Priority (high, medium, low) HIGH	Hazards Addressed: Communicable Disease, Dam Failure, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 4.1.1: Establish Building Codes	
Applicable Goal Statement:	Preserve the Natural Environment	
Issue/Background: Why is this action needed? What is the problem?	Problem: No building codes. Action: Establish & adopt codes.	
Responsible Office: Which department in Jurisdiction would implement/track?	Shannon city	
Partners: Who would help?	DHS/ Batesland	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	DHS	
Cost Estimate:	\$50,000	
Benefits: (Describe Losses Avoided)	Preserve buildings	
Timeline: (How many months/years to complete?)	3 to 4 years	

Table 87: Mitigation Activities for Shannon County

Jurisdiction: Shannon	Local Priority (high, medium, low) HIGH	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Drought, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Shortage of Critical Materials, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 5.1.1: Education on Mitigation Measures	

Applicable Goal Statement:	Support and assist community mitigation capabilities and efforts
Issue/Background: Why is this action needed? What is the problem?	Problem: Lack of understanding. Action: Provide education.
Responsible Office: Which department in Jurisdiction would implement/track?	Emergency Management
Partners: Who would help?	Schools & State
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	DHS / FEMA
Cost Estimate:	\$10,000
Benefits: (Describe Losses Avoided)	Prevent loss of lives & property
Timeline: (How many months/years to complete?)	6 months to 1 year

Table 88: Mitigation Activities for Shannon County

Jurisdiction: Shannon	Local Priority (high, medium, low) HIGH	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Drought, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Shortage of Critical Materials, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 6.1.1: Update Emergency Operations Plan	
Applicable Goal Statement:	Improve Emergency Management Capabilities	
Issue/Background: Why is this action needed? What is the problem?	Problem: Lack of Current Plan Action: Update EOP	
Responsible Office: Which department in Jurisdiction would implement/track?	Emergency Manager	
Partners: Who would help?	DST, School, County Commission	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	FEMA Grant	
Cost Estimate:	20,000	

Benefits: (Describe Losses Avoided)	Standardize Emergency Response
Timeline: (How many months/years to complete?)	1 year.

Table 89: Mitigation Activities for OST/PRIR

Jurisdiction: OST/PRIR	Local Priority (high, medium, low) MEDIUM	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Shortage of Critical Materials, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 1.3.1: Improved Emergency Transportation System	
Applicable Goal Statement:	Protect Citizens from injuries and loss of life from hazards	
Issue/Background: Why is this action needed? What is the problem?	Problem: Families have limitations on movement Action: Move families when in danger	
Responsible Office: Which department in Jurisdiction would implement/track?	OST Transportation, OST Ambulance	
Partners: Who would help?	Emergency Management	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	OST Tribe Bureau of Indian Affairs Indian Health Services	
Cost Estimate:	\$250,000; Approx. \$30,000/district except Pine Ridge	
Benefits: (Describe Losses Avoided)	Movement of families to safe areas	
Timeline: (How many months/years to complete?)	2 years, improved transportation	

Table 90: Mitigation Activities for OST/PRIR

Jurisdiction: OST/PRIR	Local Priority (high, medium, low) MEDIUM	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Drought, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Shortage of Critical Materials, Summer Storms,
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		Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 1.3.2: Improve Emergency Communication System	
Applicable Goal Statement:	Protect Citizens from injuries and loss of life from hazards	
Issue/Background: Why is this action needed? What is the problem?	Problem: Citizens are unaware of impending danger Action: Improve warning/alert systems	
Responsible Office: Which department in Jurisdiction would implement/track?	Emergency Management	
Partners: Who would help?	Dept. of Homeland Security (DHS)	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	Grant DHS; warning systems	
Cost Estimate:	\$10,000	
Benefits: (Describe Losses Avoided)	Loss of life prevention	
Timeline: (How many months/years to complete?)	2 years; more sirens and alert systems	

Table 91: Mitigation Activities for OST/PRIR

Jurisdiction: OST/PRIR	Local Priority (high, medium, low) MEDIUM	Hazards Addressed: Civil Disorder, Dam Failure, Hazardous Materials Incidents, Flooding, Nuclear Accident, Urban Fires, Summer Storms, Terrorism, Tornados, Transportation Incidents, Wildfires
Action Title/Description:	Action 3.2.1: Provide sirens in all large population areas	
Applicable Goal Statement:	Reduce the losses to critical facilities, utilities, and infrastructure from natural hazards	
Issue/Background: Why is this action needed? What is the problem?	Problem: Some communities have no sirens Action: Provide sirens in all communities	
Responsible Office: Which department in Jurisdiction would implement/track?	Emergency Management	
Partners: Who would help?	District CAP offices	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	DHS/FEMA	

Cost Estimate:	\$100,000
Benefits: (Describe Losses Avoided)	Loss of life prevention
Timeline: (How many months/years to complete?)	1 year; install sirens in all communities

Table 92: Mitigation Activities for OST/PRIR

Jurisdiction: OST/PRIR	Local Priority (high, medium, low) MEDIUM	Hazards Addressed: Dam Failure, Flooding, Summer Storms, Tornados, Winter Storms
Action Title/Description:	Action 3.2.3: Provide for improved weather alert systems	
Applicable Goal Statement:	Reduce the losses to critical facilities, utilities, and infrastructure from natural hazards	
Issue/Background: Why is this action needed? What is the problem?	Problem: Weather alert systems are inadequate Action: Provide coverage for all citizens	
Responsible Office: Which department in Jurisdiction would implement/track?	Emergency Management	
Partners: Who would help?	Weather Service/DHS	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	DHS	
Cost Estimate:	\$10,000	
Benefits: (Describe Losses Avoided)	Prevent loss of life and facilities	
Timeline: (How many months/years to complete?)	1 year	

Table 93: Mitigation Activities for OST/PRIR

Jurisdiction: OST/PRIR	Local Priority (high, medium, low) MEDIUM	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Drought, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Shortage of Critical Materials, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 4.2.1: Seek Mitigation Funding for Mitigation Projects	

Applicable Goal Statement:	Preserve the Natural Environment
Issue/Background: Why is this action needed? What is the problem?	Problem: No funding for mitigation projects Action: Seek funding for mitigation projects
Responsible Office: Which department in Jurisdiction would implement/track?	Emergency Management
Partners: Who would help?	Shannon County
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	DHS/FEMA
Cost Estimate:	\$0.00
Benefits: (Describe Losses Avoided)	Preserve infrastructure losses
Timeline: (How many months/years to complete?)	Annually

Table 94: Mitigation Activities for OST/PRIR

Jurisdiction: OST/PRIR	Local Priority (high, medium, low) MEDIUM	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Hazardous Materials Incidents, Flooding, Nuclear Accident, Urban Fires, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 5.1.2: Guidance for Evacuators	
Applicable Goal Statement:	Support and assist community mitigation capabilities and efforts	
Issue/Background: Why is this action needed? What is the problem?	Problem: Need a plan for evacuators Action: Provide a plan of action for evacuators	
Responsible Office: Which department in Jurisdiction would implement/track?	Emergency Management	
Partners: Who would help?	District CAP Offices, Schools	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	DHS/FEMA, SDEM	
Cost Estimate:	In-house	
Benefits: (Describe Losses Avoided)	Prevent loss of life	

Timeline: (How many months/years to complete?)	1 year
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Table 95: Mitigation Activities for OST/PRIR

Jurisdiction: OST/PRIR	Local Priority (high, medium, low) MEDIUM	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Drought, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Shortage of Critical Materials, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 5.1.3: Instruction on Utility Shut Off	
Applicable Goal Statement:	Support and assist community mitigation capabilities and efforts	
Issue/Background: Why is this action needed? What is the problem?	Problem: Home owners do not know how to shut off utilities Action: Educate home owners	
Responsible Office: Which department in Jurisdiction would implement/track?	OST Housing, Local utility companies	
Partners: Who would help?	Emergency Management	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	Utility Companies	
Cost Estimate:	In-house	
Benefits: (Describe Losses Avoided)	Prevent property losses	
Timeline: (How many months/years to complete?)	1 year	

Table 96: Mitigation Activities for OST/PRIR

Jurisdiction: OST/PRIR	Local Priority (high, medium, low) MEDIUM	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Drought, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Shortage of Critical Materials, Summer Storms, Terrorism, Tornados,
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		Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 6.2.1: Training for First Responder Team	
Applicable Goal Statement:	Improve Emergency Management Capabilities	
Issue/Background: Why is this action needed? What is the problem?	Problem: First responders need training Action: Identify and train first responders	
Responsible Office: Which department in Jurisdiction would implement/track?	Emergency Management	
Partners: Who would help?	SD EM/FEMA	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	DHS/SD EM	
Cost Estimate:	\$50,000	
Benefits: (Describe Losses Avoided)	Prevent loss of lives and property	
Timeline: (How many months/years to complete?)	1 year	

Table 97: Mitigation Activities for Shannon County

Jurisdiction: Shannon	Local Priority (high, medium, low) MEDIUM	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Shortage of Critical Materials, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 1.3.1: Improved Emergency Transportation System	
Applicable Goal Statement:	Protect Citizens from injuries and loss of life from hazards	
Issue/Background: Why is this action needed? What is the problem?	Problem: Citizens have limited movement. Action: Move citizens when in danger.	
Responsible Office: Which department in Jurisdiction would implement/track?	OST	
Partners: Who would help?	Emergency Services	

Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	DHS. Department of Health
Cost Estimate:	\$75,000
Benefits: (Describe Losses Avoided)	Move citizens from harm's way.
Timeline: (How many months/years to complete?)	1 year

Table 98: Mitigation Activities for Shannon County

Jurisdiction: Shannon	Local Priority (high, medium, low) MEDIUM	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Drought, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Shortage of Critical Materials, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 1.3.2: Improve Emergency Communication System	
Applicable Goal Statement:	Protect Citizens from injuries and loss of life from hazards	
Issue/Background: Why is this action needed? What is the problem?	Problem: Better alerting systems. Action: Improve warning/alerting systems.	
Responsible Office: Which department in Jurisdiction would implement/track?	Emergency Management	
Partners: Who would help?	DHS	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	Grants – DHS	
Cost Estimate:	\$10,000	
Benefits: (Describe Losses Avoided)	Prevent injury & loss of life	
Timeline: (How many months/years to complete?)	1 year	

Table 99: Mitigation Activities for Shannon County

Jurisdiction: Shannon	Local Priority (high, medium, low) MEDIUM	Hazards Addressed: Civil Disorder, Dam Failure, Hazardous Materials Incidents, Flooding, Nuclear Accident, Urban
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		Fires, Summer Storms, Terrorism, Tornadoes, Transportation Incidents, Wildfires
Action Title/Description:	Action 3.2.1: Provide sirens in all large population areas	
Applicable Goal Statement:	Reduce the losses to critical facilities, utilities, and infrastructure from natural hazards	
Issue/Background: Why is this action needed? What is the problem?	Problem: No siren. Action: Provide siren.	
Responsible Office: Which department in Jurisdiction would implement/track?	Emergency Management	
Partners: Who would help?	Batesland	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	DHS	
Cost Estimate:	\$20,000	
Benefits: (Describe Losses Avoided)	Loss of life	
Timeline: (How many months/years to complete?)	1 year	

Table 100: Mitigation Activities for Shannon County

Jurisdiction: Shannon	Local Priority (high, medium, low) MEDIUM	Hazards Addressed: Dam Failure, Flooding, Summer Storms, Tornadoes, Winter Storms
Action Title/Description:	Action 3.2.3: Provide for improved weather alert systems	
Applicable Goal Statement:	Reduce the losses to critical facilities, utilities, and infrastructure from natural hazards	
Issue/Background: Why is this action needed? What is the problem?	Problem: Weather altering is inadequate. Action: Better Coverage.	
Responsible Office: Which department in Jurisdiction would implement/track?	Emergency Management	
Partners: Who would help?	NWS/ DHS	

Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	DHS
Cost Estimate:	\$10,000
Benefits: (Describe Losses Avoided)	Warn citizens, prevent loss of life & injuries
Timeline: (How many months/years to complete?)	1 year.

Table 101: Mitigation Activities for Shannon County

Jurisdiction: Shannon	Local Priority (high, medium, low) MEDIUM	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Drought, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Shortage of Critical Materials, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 4.2.1: Seek Mitigation Funding for Mitigation Projects	
Applicable Goal Statement:	Preserve the Natural Environment	
Issue/Background: Why is this action needed? What is the problem?	Problem: No funding for projects identified. Action: Prioritize projects.	
Responsible Office: Which department in Jurisdiction would implement/track?	Emergency Management.	
Partners: Who would help?	BIA / OST	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	DHS/FEMA/PDM	
Cost Estimate:	\$0.00 (In-House)	
Benefits: (Describe Losses Avoided)	Preserve and prevent infrastructure loss	
Timeline: (How many months/years to complete?)	Update annually	

Table 102: Mitigation Activities for Shannon County

Jurisdiction: Shannon	Local Priority (high, medium, low) MEDIUM	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Hazardous Materials Incidents, Flooding,
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		Nuclear Accident, Urban Fires, Summer Storms, Terrorism, Tornadoes, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 5.1.2: Guidance for Evacuators	
Applicable Goal Statement:	Support and assist community mitigation capabilities and efforts	
Issue/Background: Why is this action needed? What is the problem?	Problem: No plans. Action: Provide plans and practice.	
Responsible Office: Which department in Jurisdiction would implement/track?	Emergency Management	
Partners: Who would help?	Schools & Batesland	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	DHS / FEMA	
Cost Estimate:	\$0.00	
Benefits: (Describe Losses Avoided)	Prevent loss of life.	
Timeline: (How many months/years to complete?)	1 year	

Table 103: Mitigation Activities for Shannon County

Jurisdiction: Shannon	Local Priority (high, medium, low) MEDIUM	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Drought, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Shortage of Critical Materials, Summer Storms, Terrorism, Tornadoes, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 5.1.3: Instruction on Utility Shut Off	
Applicable Goal Statement:	Support and assist community mitigation capabilities and efforts	
Issue/Background: Why is this action needed? What is the problem?	Problem: Lack of knowledge to shut off utilities. Action: Educate owners	
Responsible Office: Which department in Jurisdiction would implement/track?	Local utility suppliers	
Partners:	Emergency Management	

Who would help?	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	Utility companies
Cost Estimate:	\$0.00
Benefits: (Describe Losses Avoided)	Prevent loss
Timeline: (How many months/years to complete?)	1 year

Table 104: Mitigation Activities for Shannon County

Jurisdiction: Shannon	Local Priority (high, medium, low) MEDIUM	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Drought, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Shortage of Critical Materials, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 6.2.1: Training for First Responder Team	
Applicable Goal Statement:	Improve Emergency Management Capabilities	
Issue/Background: Why is this action needed? What is the problem?	Problem: Lack of training. Action: Identify needs & provide training.	
Responsible Office: Which department in Jurisdiction would implement/track?	Emergency Management	
Partners: Who would help?	SDOEM / FEMA	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	DHS / PDM	
Cost Estimate:	\$50,000	
Benefits: (Describe Losses Avoided)	Better response actions	
Timeline: (How many months/years to complete?)	1 year	

Table 105: Mitigation Activities for OST/PRIR

Jurisdiction: OST/PRIR	Local Priority (high, medium, low) LOW	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Drought,
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		Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Shortage of Critical Materials, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 1.1.1: Educate public on disaster preparation	
Applicable Goal Statement:	Protect Citizens from injuries and loss of life from hazards	
Issue/Background: Why is this action needed? What is the problem?	Problem: Citizens ill-informed/prepared for disasters Action: Community education	
Responsible Office: Which department in Jurisdiction would implement/track?	Emergency Management	
Partners: Who would help?	Schools	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	FEMA Grant – BIA Education Grant	
Cost Estimate:	\$100,000	
Benefits: (Describe Losses Avoided)	Loss of life prevention	
Timeline: (How many months/years to complete?)	1 year, 2015	

Table 106: Mitigation Activities for OST/PRIR

Jurisdiction: OST/PRIR	Local Priority (high, medium, low) LOW	Hazards Addressed: Civil Disorder, Drought, Hazardous Materials Incidents, Flooding, Nuclear Accident, Urban Fires, Summer Storms, Terrorism, Tornados, Transportation Incidents, Wildfires
Action Title/Description:	Action 1.3.3: Provide for structural fire-fighting equipment.	
Applicable Goal Statement:	Protect Citizens from injuries and loss of life from hazards	
Issue/Background: Why is this action needed? What is the problem?	Problem: No structural fire equipment available Action: Provide fire-fighting equipment/personnel	
Responsible Office: Which department in Jurisdiction would implement/track?	OST Housing/BIA Agency/IHS	
Partners:		

Who would help?	Emergency Management
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	FEMA Grants, Fire Depts.
Cost Estimate:	\$1,000,000
Benefits: (Describe Losses Avoided)	Loss of life and property prevention
Timeline: (How many months/years to complete?)	5 years

Table 107: Mitigation Activities for OST/PRIR

Jurisdiction: OST/PRIR	Local Priority (high, medium, low) LOW	Hazards Addressed: Communicable Disease, Dam Failure, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 2.2.1: Building code enforcement	
Applicable Goal Statement:	Protect existing and future structures within hazard areas	
Issue/Background: Why is this action needed? What is the problem?	Problem: OST is not enforcing building codes Action: OST must require and hire enforcement officials	
Responsible Office: Which department in Jurisdiction would implement/track?	OST Compliance Office	
Partners: Who would help?	OST Housing personnel	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	HUD Grant	
Cost Estimate:	\$100,000	
Benefits: (Describe Losses Avoided)	Buildings are safer, loss of life prevention	
Timeline: (How many months/years to complete?)	Continuous	

Table 108: Mitigation Activities for OST/PRIR

Jurisdiction: OST/PRIR	Local Priority (high, medium, low) LOW	Hazards Addressed: Dam Failure, Flooding
Action Title/Description:	Action 3.1.1: Protect critical facilities in flood zones	

Applicable Goal Statement:	Reduce the losses to critical facilities, utilities, and infrastructure from natural hazards
Issue/Background: Why is this action needed? What is the problem?	Problem: Critical facilities are located in flood zones Action: Move or elevate structures
Responsible Office: Which department in Jurisdiction would implement/track?	OST Housing Authority
Partners: Who would help?	Emergency Management
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	HUD DHS
Cost Estimate:	\$250,000
Benefits: (Describe Losses Avoided)	Protection of families, structures
Timeline: (How many months/years to complete?)	5 years

Table 109: Mitigation Activities for OST/PRIR

Jurisdiction: OST/PRIR	Local Priority (high, medium, low) Low	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Drought, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Shortage of Critical Materials, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 3.1.3: Inventory all assets for critical facility protection	
Applicable Goal Statement:	Reduce the losses to critical facilities, utilities, and infrastructure from natural hazards	
Issue/Background: Why is this action needed? What is the problem?	Problem: No inventory of assets Action: Provide inventory of all assets	
Responsible Office: Which department in Jurisdiction would implement/track?	Owners of critical facilities	
Partners: Who would help?	Emergency Management	
Potential Funding Source: (Grants-specific if known, local	FEMA/DHS	

funds, combination, etc.)	
Cost Estimate:	\$50,000
Benefits: (Describe Losses Avoided)	Prevent loss of critical facility assets
Timeline: (How many months/years to complete?)	1 year

Table 110: Mitigation Activities for OST/PRIR

Jurisdiction: OST/PRIR	Local Priority (high, medium, low) LOW	Hazards Addressed: Dam Failure, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action: 4.1.2: Provide for planning and zoning for building projects.	
Applicable Goal Statement:	Preserve the Natural Environment	
Issue/Background: Why is this action needed? What is the problem?	Problem: Zoning is non-existent for projects Action: Institute planning and zoning	
Responsible Office: Which department in Jurisdiction would implement/track?	OST	
Partners: Who would help?	BIA, IHS, HUD	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	BIA, HIS, HUD, DHS	
Cost Estimate:	\$100,000	
Benefits: (Describe Losses Avoided)	Building constructed away from hazards	
Timeline: (How many months/years to complete?)	3 years	

Table 111: Mitigation Activities for OST/PRIR

Jurisdiction: OST/PRIR	Local Priority (high, medium, low) LOW	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Drought, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Shortage of Critical Materials, Summer Storms, Terrorism, Tornados,
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		Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 5.2.1: Mutual aid agreements for emergency response	
Applicable Goal Statement:	Support and assist community mitigation capabilities and efforts	
Issue/Background: Why is this action needed? What is the problem?	Problem: Mutual aid agreements do not exist Action: Work with neighbors to institute mutual aid agreements	
Responsible Office: Which department in Jurisdiction would implement/track?	Emergency Management	
Partners: Who would help?	Adjoining Counties/Tribes	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	In-house	
Cost Estimate:	\$0.00	
Benefits: (Describe Losses Avoided)	Improved response time will save structures	
Timeline: (How many months/years to complete?)	2 years	

Table 112: Mitigation Activities for Shannon County

Jurisdiction: Shannon	Local Priority (high, medium, low) LOW	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Drought, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Shortage of Critical Materials, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 1.1.1: Educate public on disaster preparation	
Applicable Goal Statement:	Protect Citizens from injuries and loss of life from hazards	
Issue/Background: Why is this action needed? What is the problem?	Problem: Lack of preparation by citizens. Action: Community Education.	
Responsible Office: Which department in Jurisdiction would implement/track?	All Entities.	
Partners: Who would help?	Schools	

Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	FEMA Grants
Cost Estimate:	\$50,000
Benefits: (Describe Losses Avoided)	Loss of Life, property & injury prevention
Timeline: (How many months/years to complete?)	1 year

Table 113: Mitigation Activities for Shannon County

Jurisdiction: Shannon	Local Priority (high, medium, low) LOW	Hazards Addressed: Civil Disorder, Drought, Hazardous Materials Incidents, Flooding, Nuclear Accident, Urban Fires, Summer Storms, Terrorism, Tornados, Transportation Incidents, Wildfires
Action Title/Description:	Action 1.3.3: Provide for structural fire-fighting equipment.	
Applicable Goal Statement:	Protect Citizens from injuries and loss of life from hazards	
Issue/Background: Why is this action needed? What is the problem?	Problem: Lack of adequate equipment. Action: Better equipment.	
Responsible Office: Which department in Jurisdiction would implement/track?	Batesland Fire	
Partners: Who would help?	SD Fire Marshall & Emergency MGMT	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	FEMA	
Cost Estimate:	\$500,000	
Benefits: (Describe Losses Avoided)	Loss of property & life	
Timeline: (How many months/years to complete?)	3 years	

Table 114: Mitigation Activities for Shannon County

Jurisdiction: Shannon	Local Priority (high, medium, low) LOW	Hazards Addressed: Communicable Disease, Dam Failure, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Summer Storms, Terrorism, Tornados, Transportation Incidents,
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		Winter Storms, Wildfires
Action Title/Description:	Action 2.2.1: Building code enforcement	
Applicable Goal Statement:	Protect existing and future structures within hazard areas	
Issue/Background: Why is this action needed? What is the problem?	Problem: No building codes. Action: Establish building codes.	
Responsible Office: Which department in Jurisdiction would implement/track?	County Commission	
Partners: Who would help?	Batesland	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	HUD	
Cost Estimate:	\$50,000	
Benefits: (Describe Losses Avoided)	Loss of life prevention, safer construction	
Timeline: (How many months/years to complete?)	On-going	

Table 115: Mitigation Activities for Shannon County

Jurisdiction: Shannon	Local Priority (high, medium, low) LOW	Hazards Addressed: Dam Failure, Flooding
Action Title/Description:	Action 3.1.1: Protect critical facilities in flood zones	
Applicable Goal Statement:	Reduce the losses to critical facilities, utilities, and infrastructure from natural hazards	
Issue/Background: Why is this action needed? What is the problem?	Problem: Establish flood zones. Action: Move or elevate structures.	
Responsible Office: Which department in Jurisdiction would implement/track?	County Commission	

Partners: Who would help?	FEMA & Emergency MGMT.
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	DHS / FEMA/ PDM
Cost Estimate:	\$100,000
Benefits: (Describe Losses Avoided)	Prevent Structure Loss
Timeline: (How many months/years to complete?)	3 years

Table 116: Mitigation Activities for Shannon County

Jurisdiction: Shannon	Local Priority (high, medium, low) Low	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Drought, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Shortage of Critical Materials, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 3.1.3: Inventory all assets for critical facility protection	
Applicable Goal Statement:	Reduce the losses to critical facilities, utilities, and infrastructure from natural hazards	
Issue/Background: Why is this action needed? What is the problem?	Problem: No inventory. Action: Provide inventory.	
Responsible Office: Which department in Jurisdiction would implement/track?	Owners	
Partners: Who would help?	County Commission	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	FEMA/DHS	
Cost Estimate:	\$30,000	
Benefits: (Describe Losses Avoided)	Loss of critical assets	
Timeline: (How many months/years to complete?)	1 year	

Table 117: Mitigation Activities for Shannon County

Jurisdiction: Shannon	Local Priority (high, medium, low) LOW	Hazards Addressed: Dam Failure, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action: 4.1.2: Provide for planning and zoning for building projects.	
Applicable Goal Statement:	Preserve the Natural Environment	
Issue/Background: Why is this action needed? What is the problem?	Problem: Non-existent. Action: Establish planning & zoning.	
Responsible Office: Which department in Jurisdiction would implement/track?	Shannon City & Batesland	
Partners: Who would help?	Council of local government	
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	Grants	
Cost Estimate:	\$50,000	
Benefits: (Describe Losses Avoided)	Construction Code compliance	
Timeline: (How many months/years to complete?)	1-2 years	

Table 118: Mitigation Activities for Shannon County

Jurisdiction: Shannon	Local Priority (high, medium, low) LOW	Hazards Addressed: Civil Disorder, Communicable Disease, Dam Failure, Drought, Hazardous Materials Incidents, Flooding, Nuclear Accident, Shallow Landslide, Urban Fires, Shortage of Critical Materials, Summer Storms, Terrorism, Tornados, Transportation Incidents, Winter Storms, Wildfires
Action Title/Description:	Action 5.2.1: Mutual aid agreements for emergency response	
Applicable Goal Statement:	Support and assist community mitigation capabilities and efforts	
Issue/Background: Why is this action needed? What is the problem?	Problem: Mutual Aide is limited. Action: Establish aid with neighboring jurisdictions.	
Responsible Office: Which department in Jurisdiction would implement/track?	Batesland Fire	

Partners: Who would help?	Adjoining entities
Potential Funding Source: (Grants-specific if known, local funds, combination, etc.)	In house
Cost Estimate:	\$0.00
Benefits: (Describe Losses Avoided)	Improve response capabilities
Timeline: (How many months/years to complete?)	1 year

Section 6: Plan Maintenance, Plan Review and Adoption

“Section 201.7(c)(4) in the Code of Federal Regulations require a formal plan maintenance process to ensure the Mitigation Plan remains an active and relevant document.”

Monitoring, Evaluating, and Updating the Plan:

Shannon County and the OST will monitor and evaluate the OST/Shannon County Multi-Hazard Mitigation Plan on a defined schedule to make it a dynamic active plan. The designated Tribal Emergency Manager (TEM) will assume the responsibility to periodically evaluate the mitigation action items in the strategic plan to determine implementation status.

The OST EM will meet yearly with each District designated collateral duty emergency manager and the Shannon County EM to receive input into implementation at the identified mitigation action items.

The OST EM will meet with the Shannon County EM and Planning Team semi-annually to update the plan. These meetings will continue throughout the five year cycle. The plan will be updated every five years, or more frequently as needed.

Monitoring Progress of Mitigation Activities:

Shannon County and the OST EM will periodically review the identified mitigation action items and identify the responsible OST Department to ensure implementation. The high priority items will be addressed in the first year and continue until all high priority items have been addressed for appropriate action. The action items in the high priority list that require funding will require a coordinated effort between the OST EM and Tribal leadership.

The OST EM will meet with the OST/Shannon County Planning Committee annually to evaluate progress on the identified mitigation activities.

Incorporation into Existing Planning Mechanisms:



Shannon County and the OST EM will meet periodically with the Tribal Emergency Management Committee to ensure that portions of the identified mitigation activities are incorporated into the existing Emergency Operations Plan. The OST EM will coordinate with the OST Emergency Management Team and the Shannon County EM to discuss the incorporation of the mitigation activities into existing plans. Shannon County and the OST EM will provide copies of the Mitigation Plan and explain the mitigation action items to other relevant departments. Shannon County and OST EM will also incorporate mitigation into forthcoming building codes.

Continued Member and Stakeholder Involvement:

Shannon County and the OST EM will meet with the OST District stakeholder representations annually at the District Manager meetings. The Mitigation Plan mitigation action items will be reviewed at this meeting. The District stakeholders will be consulted to ensure their ideas are incorporated into completing the identified action items.

Appendices

Appendix A: Meeting Documentation

	OGLALA SIOUX TRIBE Office of the Executive Director <i>Richard L. Zephier</i> Ph. D., MBA PO Box #2070 Pine Ridge, SD 57770 Ph: 605-867-8429 Fax: 605-867-2637	
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MEMORANDUM

Date: August 13, 2013

To: OST Tribal Council

From: Dr. Richard Zephier, Ph.D., MBA *Richard L. Zephier, Ph.D., MBA*

Subject: Oglala Sioux Tribal Multi-Hazard Mitigation Plan

Federal Law has mandated that Tribal Government must develop a Multi- Hazard Mitigation Plan to be eligible for some FEMA disaster recovery grants.

The Oglala Sioux Tribe has not developed a plan and is in jeopardy of losing federal funding for disaster infrastructure repairs.

The most expedient process for meeting the Federal Emergency Management Agency (FEMA) Mitigation planning mandates is to develop a multi-jurisdictional plan with Shannon County. The state has funding available to support the development of this multi-jurisdictional plan.

The stake holders in this plan are tribal members living on the Pine Ridge Indian Reservation. It is their lives and property that this plan will protect in times of national disasters.

Your approval to move forward and begin the development of this proposed plan is requested.

CC: OST President
OST Enforcement officer
OST File



OGLALA SIOUX TRIBE

Office of the Executive Director

Richard L. Kephier

Ph. D., MBA

PO Box #2070 Pine Ridge, SD 57770

Ph: 605-867-8429 Fax: 605-867-2837



Dear Sonia Weston,

Oglala Sioux Tribe and Shannon County have begun the process of creating a Multi-Jurisdiction Hazard Mitigation Plan. A hazard mitigation plan is a publicly-guided document that identifies vulnerability to natural disasters such as flood, drought, earthquake, wildfire, winter storm, tornado/high wind storm, dam failure, etc. The plan sets goals, establish mitigation alternatives, and prioritizes projects which may alleviate potential damages to property and provide protection when future disasters occur.

For every \$1 spent on hazard mitigation, \$4 in post storm cleanup and rebuilding is saved, according to the Federal Emergency Management Agency (FEMA). Proactive hazard mitigation planning allows a community to take actions to reduce or eliminate threats from natural disasters. To help guide future hazard mitigation projects, the Oglala Sioux Tribe and Shannon County is undertaking an effort to draft a Hazard Mitigation Plan. Hazard mitigation plans (HMP) are a requirement of the Disaster Mitigation Act of 2000, administered by FEMA, and once a community, tribe, county, or district is part of an approved plan they become eligible for up to a 75% cost share for a wide variety of projects listed in the plan. For tribal government it also is required for your entity to request a presidential disaster declaration directly to the President. Hazard Mitigation Plans are required to be updated on a five-year cycle.

This planning effort will be guided by a Planning Team consisting of representatives from the Oglala Sioux Tribe, Shannon County and neighboring jurisdictions. Public input will be gathered throughout the duration of the plan development through online tools and public meetings. All jurisdictions within the planning area are eligible to participate.

You are invited by the Oglala Sioux Tribe to a luncheon at 11:30 pm on September 25, 2013 at Prairie Winds Casino, on U.S. Hwy 18, 28 miles West of Pine Ridge or 12 miles South of Oelrichs, SD with The Kick-Off Meeting to follow at 1 pm.

For more information on this planning effort, contact Delbert Brewer at 605-867-5821 or Frank Maynard at 605-745-7562.



OGLALA SIOUX TRIBE

Office of the Executive Director

Richard L. Zepher
Ph. D., MBA

PO Box #2070 Pine Ridge, SD 57770

Ph: 605-867-8429 Fax: 605-867-2837



September 24, 2013

Cleve Her Many Horses
Acting Superintendent
Bureau of Indian Affairs
PO Box 1203
Pine Ridge, SD 57770

Dear: Mr. Her Many Horses

The Oglala Sioux Tribe is in the process of developing an All-Hazard Mitigation Plan to mitigate against disaster impacts to our membership and infrastructure.

As a stakeholder on the Pine Ridge Reservation we are asking you to have a representative on the core planning team which will be forming in the next week. Also, we will need to develop GIS mapping for the mitigation plan and would like to have you support our GIS mapping requirements.

Thank you for your cooperation in this important tribal planning effort. Our leader on the team is Delbert Brewer you can reach him @ 867-8479 or 209-1930 for more information.

Sincerely,

Richard L. Zepher, Ph.D.
Richard L. Zepher, Ph.D.

SHANNON COUNTY COMMISSIONERS
AGENDA
COURTHOUSE
906 NORTH RIVER STREET, HOT SPRINGS SD
FRIDAY, SEPTEMBER 6, 2013

- 12:00 Pledge of Allegiance
Review agenda for conflict of interest items
Approve Agenda
Clarify 8-6-13 minutes to reflect purchase of motor grader off of Spink County bids, with ripper and lift;
approve minutes
Auditor's Account with the County Treasurer
Review and approve VSO's August monthly report
Approve increase to \$12.00/hour for Rodney Rouillard, completion of 520 hours, effective 8-5-13
Approve travel to Fall Convention in Spearfish, Sep 16-18, 2013 – Engebretson, Jensen, Bachand, White Hawk
Extend Wellmark Health Insurance until 11/30/14
Approve previously tabled bill for Clinical Lab in amount of \$2,813.02
(Move any unfinished items to end of meeting)
- 12:10 Supplement hearing; contingency transfers
- 12:15 Hwy Business – Updates; Private Road contracts – William Farris; Larry Kehn; Merlyn Jacobson
Approve fuel quotes:
8/20/13 Unleaded - 500 gal Diesel - 2,000 gal
Westco ----- \$3.505 / gal. ----- \$3.442 / gal.
Nelson's Oil - no response
Pine Ridge Oil - no response
- 12:30 Sealed Bids, 1985 Motor Grader
- 12:40 Susie Hayes, Dir of Equal – Travel approval for Jacki Miller, Annual Assessor School
- 12:50 Frank Maynard, EM – update on PDM plan
- 1:05 Frank Ecoffey – Wounded Knee Community Development Corp
- 1:20 2014 Provisional Budget Hearing
- 1:35 Review Impact Aid Resolution
- 1:45 Jim Daggett, Sheriff – monthly report
- 1:55 John Black Feather – vehicle taxes

Executive Session, SDCL 1-25-2 (1) Personnel; 1-25-2 (2) Legal

Adjourn

SHANNON COUNTY COMMISSIONERS
AGENDA
COURTHOUSE
906 NORTH RIVER STREET, HOT SPRINGS SD
Friday, October 4, 2013

12:00 Pledge of Allegiance
Review agenda for conflict of interest items
Approve Agenda
Approve 9-6-13 and 9-27-13 minutes
Auditor's Account with the County Treasurer
Review and approve VSO's August monthly report

(Move any unfinished items to end of meeting)

12:15 Susie Hayes, Dir of Equal – update on Wounded Knee Community Development status; exempt churches

12:25 Hwy Business – Updates; Private Road contracts – Shannon School \$84.00, pd
Purchase of culverts off of Beadle County bids

12:40 Frank Maynard, EM – update on PDM plan

12:50 Sheriff Jim Daggett – monthly report; update on insurance claim

1:05 Frank Ecoffey – Wounded Knee Community Development Corp

Executive Session, SDCL 1-25-2 (1) Personnel; 1-25-2 (2) Legal

Adjourn

SHANNON COUNTY COMMISSIONERS
AGENDA
COURTHOUSE – 2nd FLOOR JURY/COMMISSION ROOM
906 NORTH RIVER STREET, HOT SPRINGS SD
THURSDAY, DECEMBER 5, 2013

- 1:00 Pledge of Allegiance
Review agenda for conflict of interest items
Approve Agenda
Approve 11-1-13 minutes
Auditor's Account with the County Treasurer
Review and approve VSO's November monthly report
Review and place on file the September 2013 General Fund Surplus Analysis
Approve travel for Audrey Martinez, Coroner, to Sioux Falls, Dec 17-18, 2013
Set year-end meeting and contingency and supplement hearings
(Move any unfinished items to end of meeting)
- 1:15 Oglala Sioux Tribe Veteran's Organization – New office location
- 1:30 Hwy Business – Updates
Fuel Quotes: 400 gal Unleaded 1800 gal #1 Diesel
Westco \$2.85 / gal. \$3.685 / gal.
PR Oil – No response
Nelson's Oil – No response
- 1:45 Approve Bills
- 1:50 State's Attorney – Moratorium Resolution on issuing liquor licenses or restaurant liquor licenses;
Proclamation
- 2:05 Jim Daggett, Sheriff – monthly updates
- 2:15 Frank Maynard, EM – update on FEMA, PDM; appoint Wendell Yellow Bull and Lyla Hutchison to
PDM planning committee
- 2:25 Supplement Hearing
- 2:30 Distribution of 2013 Fire Insurance money

Executive Session, SDCL 1-25-2 (1) Personnel; 1-25-2 (2) Legal

Adjourn

MEETING NOTICE

Medicine Root and Pass Creek Community Meeting

ALL-HAZARD MITIGATION PLANNING

Catholic Church Community Hall – Kyle, S.D.

NOVEMBER 20, 2013 – 10:00 A.M. OR 7:00 P.M.

The Oglala Sioux Tribe Mitigation Team would like to extend an invitation to you as we prepare to create an All-Hazard Mitigation Plan for the Pine Ridge Reservation. We are encouraging participation from community members to provide input into the plan.

We need natural and man-made disaster information to include in this mitigation plan. Your input into the plan will assist our team to identify hazard vulnerabilities and what our team can do to prevent future risks and dangers to the people on the Pine Ridge Reservation.

Representatives from all entities; churches, schools, colleges, clinics, public safety, courts, and businesses are encouraged to attend. All residents are considered stakeholders in the mitigation plan and may provide information for use in the plan.

Our main goal is to develop a plan that will be utilized by all entities on the Pine Ridge Reservation as an important usable resource. We would like to develop a plan before disaster strikes so that we can be more effective at reducing risks to people and property.

Your attendance at one of these sessions is very important toward the development and incorporating a plan that meets the needs in your community.

FOR IMMEDIATE RELEASE

Media Contact:

Phone:

Email:

WORK TO CREATE MULTI-JURISDICTION HAZARD MITIGATION PLAN BEGINNING Effort being led by the Oglala Sioux Tribe and Shannon County

Pine Ridge Reservation and Shannon County, S.D. – For every \$1 spent on hazard mitigation, \$4 in post storm cleanup and rebuilding is saved, according to the Federal Emergency Management Agency (FEMA). Proactive hazard mitigation planning allows a community to take actions to reduce or eliminate threats from natural disasters. To help guide future hazard mitigation projects, the Pine Ridge Reservation is undertaking an effort to draft a Hazard Mitigation Plan. Hazard Mitigation Plans (HMP) are a requirement of the Disaster Mitigation Act of 2000, administered by FEMA, and once a community, tribe, county, or district is part of an approved plan they become eligible for up to a 75% cost share for a wide variety of projects listed in the plan. Hazard Mitigation Plans are required to be updated on a five-year cycle.

A hazard mitigation plan is a publicly-guided document that identifies vulnerability to natural disasters such as floods, drought, earthquake, wildfire, winter storm, tornado/high wind storm, dam failure, etc. The plan sets goals, establish mitigation alternatives, and prioritize projects which may alleviate potential damages to property and provide when future disasters occur.

This planning effort is being guided by a Planning Team consisting of representatives from the Pine Ridge Reservation, Shannon County, other jurisdictions, and the South Dakota Office of Emergency Management (SDOEM). Public input will be gathered throughout the duration of the plan development through online tools and public meetings. All jurisdictions within the planning area are eligible to participate.

Shannon County and the Pine Ridge Reservation have hired JEO Consulting Group, Inc. (JEO) to assist with the plan development over the next 9 to 12 months. This hazard mitigation plan update is funded by a FEMA planning grant. The cost is share 75% through federal funding and 25% through a local match. For this plan update, the Oglala Sioux Tribe and Shannon County are providing the local match.

The initial kickoff meeting to begin the Mitigation Plan was held at the OST Prairie Wind Casino on September 25, 2014. Representatives from the OST, Shannon and Bennett County, SD State, FEMA, and the Consulting Group (JEO) attended this kickoff meeting.

For more information on this planning effort contact: Delbert Brewer-OST, or Frank Maynard-Shannon County.;



OGLALA SIOUX TRIBE

Office of the Executive Director

Richard L. Kephier
Ph. D., MBA

PO Box #2070 Pine Ridge, SD 57770

Ph: 605-867-8429 Fax: 605-867-2837



November 6, 2013

To:

Bryan Brewer,	OST President
Delbert Brewer,	OST Emergency Management Consultant
Monica Terkildsen,	OST Emergency Manager
Thomas Poor Bear,	OST Vice President
Rhonda Two Eagle,	OST Secretary
Mason Big Crow,	OST Treasurer
David Pourier,	OST Fifth Members Office
Ruth Brown,	OST Tribal Council
Jim Meeks,	OST Tribal Council
Charles Cummings,	OST Tribal Council
Craig Dillon,	OST Tribal Council
Stanley Little Whiteman,	OST Tribal Council
Bernie Shot with Arrow,	OST Tribal Council
Barbara Dull Knife,	OST Tribal Council
Paul Little,	OST Tribal Council
Lydia Bear Killer,	OST Tribal Council
James Cross,	OST Tribal Council
Larry Eagle Bull,	OST Tribal Council
Irving Provost,	OST Tribal Council
Robin Tapio,	OST Tribal Council
Danielle LeBeaux,	OST Tribal Council
Troy Weston,	OST Tribal Council
Dan Rodriguez,	OST Tribal Council
Jackie Siers,	OST Tribal Council
Garfield Steele,	OST Tribal Council
Kevin Yellow Bird Steele,	OST Tribal Council
Robert Eagle Elk,	OST District Coordinator
Carol Crazy Thunder,	Pine Ridge District President
Floyd Brings Plenty,	Oglala District President
Patricia Catches the Enemy,	Wakpamni District President
Donna Jumping Eagle,	Wounded Knee District President
Margie Janis,	Medicine Root District President
Virgil Bush,	Porcupine District President

Hermis Bettelyoun,
Marvis Bad Cob,
Phillip Water,
Cleve Her Many Horse,
Daigre Deauville,
Ron Duke,
Paul Iron Cloud,
Charmaine Weston,
Ted, Hammiton,
Tom Short Bull,
Allen Davis
Wendell Yellow Bull,
Loris Welch,
Frank Means,
Jean Whirlwind Horse,
Lisa Dillon,
Andre Janis,
Richard Iron Cloud,
Willard Clifford,
David Kelly,
Harold Salway,
Richard Iron Cloud,
Lloydell Mesteth,
Hobart Yankton,
Dayna Brave Eagle,

LaCreek District President
Eagle Nest District President
Pass Creek District President
BIA Superintendent
BIA Fire Manager
OST Chief of Police
OST Housing Director
Pine Ridge School Superintendent
Red Cloud School Superintendent
OLC – Plya Wiconi President
IHS Director
OST Ambulance Service
Prairie Wind Casino Manager
OST Rural Water Director
OST Department of Corrections Director
OST Health Administrator
OST Home Improvement Director
OST Water Resources Director
OST Water Maintenance Director
OST Transportation Director
OST Parks and Recreation Director
OST Natural Resources Director
OST Environmental Director
OST Solid Waste Director
OST Education Director

From: Dr. Richard Zephier/
Executive Director

Richard Zephier, Ph.D.

Subject: Mitigation Planning Team Meeting

The Oglala Sioux Tribal Mitigation Team would like to extend an invitation to you as we prepare to create an All-hazard Mitigation Plan for the Pine Ridge Reservation. We are encouraging participation from leaders in our communities to participate in the plan development.

We need natural and man-made disaster information to include in this mitigation plan. Your input into the plan will assist our team to identify hazard vulnerabilities and what our team can do to prevent future risks and dangers to the people on the Pine Ridge Reservation.

Our main goal is to develop a plan that will be utilized by all entities on the Pine Ridge Reservation as an important usable resource. We would like to develop a plan before disaster strikes so that we can be more effective at reducing risks to people and property.

Your attendance at this planning session is very important toward the development and incorporating a plan that meets the mitigation needs on the Pine Ridge Reservation.

If you have any questions you call my office at 867-8429.

PINE RIDGE RESERVATION / SHANNON COUNTY

MITIGATION PLANNING TEAM MEETING

AGENDA

Prairie Winds Casino – November 18, 2013

9:00 a.m.	Welcome and Introductions	Bryan Brewer, OST President Wendell Yellow Bull, Chairman Shannon County Commissioners
9:30 a.m.	Mitigation Planning Handouts and Discussion	Nicole Prince, State SMO Delbert Brewer, OST Mitigation Frank Maynard, Shannon Co. Mit
10:30 a.m.	Hazard Mitigation Plan Overview	Nicole Prince
12:00 noon	Lunch	
1:00 p.m.	Mitigation Planning Team Responsibilities	Delbert Brewer Frank Maynard
2:00 p.m.	Community Participation	Delbert Brewer
2:30 p.m.	Hazard Identification /History Discussion	Frank Maynard Delbert Brewer
5:00p.m.	Adjourn	

		* Morning * Session 11/18/13
* Mitigation Planning mtg *		
excused	1. Richard L. Zepher, PhD	OST - Executive Director
	2. Delbert Brewer	OST - Emergency Management
	3. Kyle Hutchison	Shannon Co. Commish.
	4. Sonia Weston	OST DWMAC
	5. M. J. Zuss	BIA Fire
	6. Nicole Prince	SD OEM
	7. Frank Maynard	Shannon Co EM
	8. Amy Jumping Eagle	OST Executive Directors ofc
	9. Jan Whitliff	OST /DOC
excused	10. Bryan Brewer	OST Pres
excused	11. Q. J.	OST Pres Office
excused	12. Rosalee Jarvis	OST Court
	13. Bruce W. Wilken	Ex Dir Coord
	14. W. J.	Shannon County
	15. Vince Martin	OSLM
	16. Robert E. Boyle Ed	OST Dist. Coord.
	17. Justin Riser	OST DOT
	18.	
	19.	
	20.	
	21.	
	22.	
	23.	
	24.	
	25.	
	26.	
	27.	
	28.	

on.air.person@gmail.com

MEETING NOTICE

Medicine Root and Pass Creek Community Meeting

ALL-HAZARD MITIGATION PLANNING

Senior Citizen Center
~~Catholic Church Community Hall~~ – Kyle, S.D.



NOVEMBER 20, 2013 – 10:00 A.M. OR 7:00 P.M.

The Oglala Sioux Tribe Mitigation Team would like to extend an invitation to you as we prepare to create an All-Hazard Mitigation Plan for the Pine Ridge Reservation. We are encouraging participation from community members to provide input into the plan.

We need natural and man-made disaster information to include in this mitigation plan. Your input into the plan will assist our team to identify hazard vulnerabilities and what our team can do to prevent future risks and dangers to the people on the Pine Ridge Reservation.

Representatives from all entities; churches, schools, colleges, clinics, public safety, courts, and businesses are encouraged to attend. All residents are considered stakeholders in the mitigation plan and may provide information for use in the plan.

Our main goal is to develop a plan that will be utilized by all entities on the Pine Ridge Reservation as an important usable resource. We would like to develop a plan before disaster strikes so that we can be more effective at reducing risks to people and property.

Your attendance at one of these sessions is very important toward the development and incorporating a plan that meets the needs in your community.

Mitigation Planning Meeting 11-20-15		
Name	Ph.#	Organization
Neil Book Bear	605-441-9399	Helping Native Oglala Elder's about this O.S.T. ALL Hazard Mitigation.
Verhall Brown Bull Sr.	455-2200	
Steven Hernandez		
Alexis Marshall		
Donna M. Barnett	455-2529	Senior Citizen
David L. Standing Soldier	(605) 455-2252	Medicine Root District. Fifth member / Sgt. Davis
Connie Whirlwind Horse	605-455-1527	M.R.D. Chairperson
Katina Eagle Head	(605) 455-2611	Medicine Root District
Elizabeth One Horse	Work# 455-2894	Medicine Root (No Flesh)
Oscar Jealous Spirit		North Road
Nathan Tobacco	455-2471	No Flesh

Mitigation Planning Meeting 11/20/13

Name	Ph. #	Organization
Franci's A White Dress		
Josephine Kills Enemy		North Route Housing # 2018
Elvina Shangreux		Kyle Housing #321
Waylon Brave Heart	441-5186	Kyle Arc Elderly Complex Behind Angels...
Karlyn Rose Janis		Little Wound
Larry Montileaux		Self

All-Hazard Mitigation Planning Meeting
 Lacreek CAP Office
 Martin, SD January 16, 2014

	Name:	Phone #	Organization Representing
Example:	Jonathon Smythe	(605)223-4567	Self, church, school, business, college, clinic, Public safety, courts,
1.	Joseph Bettety	605/685/1153	Self
2.	Debert Brewer	605-867-8479	OST-EM
3.	Melinda Montalva	605/455-2919	OST mitigation planning
4.	Tosina Bettety	605-685-6244	Self
5.	Roby Cottier	(605) 685-1153	self.
6.	Mary Bettety	605/685-6645	self.
7.	Kelly Cottier	685-1228	Self.
8.	Patrick Cottier	605-46300	Self
9.	Frankie Parked	685-6080	Self
10.	Heather Little Thunder	(605) 407-0274	Self
11.	Jeff Spotted Elk	605 685 6645	Self
12.	William Apple	605 685-1228	Self.
13.	Carl Richards	685-1353	Self
14.			
15.			
16.			
17.			
18.			

Done

All-Hazard Mitigation Planning Meeting

~~Pine Ridge~~ ~~Pine Ridge~~ CAP Office
~~Pine Ridge~~, SD ~~January 15~~, 2014, March 5,

	Name:	Phone #	Organization Representing
Example:	Jonathon Smythe	(605)223-4567	Self, church, school, business, college, clinic, Public safety, courts,
1.	Una Star Comes Out	(605)441-8484	OS District Coordinator's Office
2.	Quene Thir Thunk	N/A	Pine Ridge
3.	Robert Spotted Bear	(605)454-4319	W.K. - pulled by NB
4.	Vine White Pine		Porcupine pulled by NB
5.	Robert Fante	407-184	1. -
6.	Albert Rydell	441-6774	Pine Ridge
7.	May Ann Pulch	867-5245	Pine Ridge, SD
8.	Louise Gold Billie		Pine Ridge, SD
9.	Beyla Feather Ewing	441-4457	P.R. SD
10.	Shuly Brown	381-3638	PR SD Self
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			



Fall River County

Office of Emergency Management
906 N. River Street
Hot Springs SD 57747

Franklin W. Maynard
frem@gwfc.net
Andy Timmins
Assistant EM
fallriverem@gmail.com

605-745-7562

cell 890-7245

fax 605-745-6835



Date: April 23, 2014

Subj: Oglala Sioux Tribe/Shannon County Pre Disaster Mitigation Plan

To Whom It May Concern:

This letter is being sent to inform your jurisdiction of a planning effort underway by the Oglala Sioux Tribe and Shannon County to create a Hazard Mitigation Plan. A hazard mitigation plan is a publicly-guided document which identifies vulnerability to natural disasters such as flood, drought, earthquake, wildfire, winter storm, tornado/high wind storm, dam failure, etc. The plan sets goals, establishes mitigation alternatives, and prioritizes projects which may alleviate potential damages to property and provide protection when future disasters occur.

Hazard mitigation plans are a requirement of the Disaster Mitigation Act of 2000, administered by the Federal Emergency Management Agency (FEMA), and once a community is part of a plan they become eligible to apply for FEMA hazard mitigation grants. These grants can be used for up to 75% cost share for a wide variety of projects listed in the plan. Other funding opportunities will also be explored. FEMA requires that your jurisdiction, a neighboring community, be notified of this planning effort.

This planning effort will be guided by a Planning Team consisting of representatives from the Oglala Sioux Tribe, Shannon County and neighboring jurisdictions. Public input will be gathered throughout the duration of the plan development through online tools and public meetings. All jurisdictions within the planning area are eligible to participate.

If you are interested in providing feedback to this planning process, or in attending future meetings, please contact Delbert Brewer at 605 867-5821 or Frank Maynard at 605 745-7562.

A handwritten signature in cursive script, reading "Franklin W. Maynard".

Franklin W. Maynard, CFM & CEM
Fall River/Shannon County Emergency Manager
Past President of the SDEMA



Oglala Sioux Tribe

Office of the President

Pine Ridge Indian Reservation

Post Office Box 2070

Pine Ridge, South Dakota 57770

Phone: 605.867.8420

Fax 605.867.6076

bryan@ogla.org



May 2, 2014

Cyril (Whitey) Scott
President, Rosebud Sioux Tribe
11 Legion Avenue, P.O. Box 430
Rosebud, SD 57570

Dear President Scott:

This letter is being sent to inform your jurisdiction of a planning effort underway by the Oglala Sioux Tribe and Shannon County to create a Multi-Jurisdiction Hazard Mitigation Plan. A hazard mitigation plan is a publicly-guided document which identifies vulnerability to natural disasters such as flood, drought, earthquake, wildfire, winter storm, tornado/high wind storm, dam failure, etc. The plan sets goals, establishes mitigation alternatives, and prioritizes projects which may alleviate potential damages to property and provide protection when future disasters occur.

Hazard mitigation plans are a requirement of the Disaster Mitigation Act of 2000, administered by the Federal Emergency Management Agency (FEMA), and once a community is part of a plan they become eligible to apply for FEMA hazard mitigation grants. These grants can be used for up to a 75% cost share for a wide variety of projects listed in the plan. Other funding opportunities will also be explored. FEMA requires that your jurisdiction, a neighboring community, be notified of this planning effort.

This planning effort will be guided by a Planning Team consisting of representatives from the Oglala Sioux Tribe, Shannon County and neighboring jurisdictions. Public input will be gathered throughout the duration of the plan development through online tools and public meetings. All jurisdictions within the planning area are eligible to participate.

If you are interested in providing feedback to this planning process, or in attending future meetings, please contact Delbert Brewer at 605-867-8420 or Frank Maynard at 605-745-7562.

Sincerely,

Bryan V. Brewer

President, Oglala Sioux Tribe

Frank Short W.K.
Eldwin Little Dog Manderson 605/4107-0144

Denise Jumping Eagle W.K.

Lisa K Steel WK

~~Derek Henry~~ WK (Manderson)

Hanna Apple WK (Manderson)

Alberta Jankton manderson

William Kus Emy Manderson

Elizabeth Gibben WK

Conch W. E. Hark WK

Martyna White Hawk WK

Richard Red Elk WK

Alberta Jankton / op

? Leona Clerk @ Pinkie's

Cisco ? custodian @ WKCC

Wounded Knee District - Manderson / Wounded
Knee

All Hazard Mitigation Planning Meeting

Cap Office, WK Dist School, Elder Meals, WKCC,

Pinkie's Store.

April 24, 2014

O. Dina

TO: Mitigation Planning Committee
FROM: Dr. Richard Zephier
DATE: May 6, 2014
SUBJECT: OST Mitigation Planning Team Meeting

The OST Mitigation Team is inviting you to attend the second OST Mitigation Planning Team Meeting. This is a continuation of the OST and Shannon County development of a multi-jurisdictional All-Hazards Mitigation Plan.

The Mitigation Team has completed the Planning and Risk Assessment phase of the Mitigation Plan. We are now at the Mitigation Strategy phase and need input from The Planning Team.

An important working session is scheduled on May 20, 2014 at the Prairie Winds Casino beginning at 9:00 a.m. Your input is very valuable and we encourage your attendance.

Please come prepared to provide input into developing the Mitigation goals, objectives and related action plans. IF you cannot personally represent your community, please send a representative since your community involvement is critical to the success of the overall Plan.

Please feel free to call Delbert Brewer if you have any questions. His cell phone is:

605-390-1961

Address List for Mitigation Planning Committee

Ken Keith, BIA Facilities

Suzy Mesteth, OST Environmental

Tim Jacobs, IHS Safety Officer

All 9 OST Districts Managers

Superintendent, BIA School

Tom Short Bull, President, OLC

BIA Fire Manager

Vince Martin, OST EM Committee

Tony Wounded Head, OST EM Committee Chairman

Sonia Weston, OST EM Committee

Monica ~~Terkildsen~~, OST Emergency Management

**OST/SHANNON COUNTY MULTI-JURISDICTIONAL MITIGATION PLAN
MITIGATION STRATEGY PLANNING AGENDA**

Prairie Winds Casino, May 20, 2014

9:00 a.m.	Mitigation Planning Status Report	Del Brewer, OST Consultant Frank Maynard, EM Shannon Co.
9:30 a.m.	Purpose of Planning Meeting:	Del Brewer
10:00 a.m.	Identify Mitigation Goals & Objectives	Team
11:00 a.m.	Mitigation Actions Identification	Team
12:00 a.m.	Lunch	
1:00 p.m.	Rank the Identified Mitigation Actions	Team
3:30 p.m.	Mitigation Plan Draft Review Preview	Del Brewer Frank Maynard
4:00 p.m.	Adjourn	

OST ALL-HAZARD MITIGATION PLAN SIGN-IN SHEET - PLANNING COMMITTEE - MAY 20, 2014

Name	Location	Organization	Phone Number
Jeff Sisler	Remeth County	Emergency Management	605-685-6991
Janet Randall	Pine Ridge	BAFIRE	605-867-5394
Marilyn Parrier	Kyle, SD	Ogala Lakota Coll. Yr	605-455-6045
Michelle Garkner	OST	Emergency Management	605-830-7245
Frank Maynard	Not Springs	Tell River Emergency Mgmt	605-867-7245
Rick Hoffman	Texas Ridge	OST Local 6 Fire	605-867-5864
Richard Roy Ellis	Wanderwood	WKS Service Center	605-867-5428
Kenneth Kelly	Pine Ridge Co Del	BAFIRE Mt. Park Agency	605-453-0466
Donna Weston	Pine Ridge, SD	OST Dept. of Public Works	605-867-1999
Lucia Star Comes Out	Pine Ridge	Wakarusa District	605-867-4257
Debra Lea Fung	Ogala	Service Center	867-5617
Debra Chase Fung	Ogala	Service Center	867-5617
Kelly Cotton	Ogala	Seviana Center	683-1645
Debra Brown	OST-EM	OST	390-1961
Jeff Jones	Pine Ridge	OST Bureau	605-867-5421
Sunny Westeth	Pine Ridge	OST-Environmental Prot.	441-0595 867-5236

-ofc



Fall River County

Office of Emergency Management
906 N. River Street
Hot Springs SD 57747

Franklin W. Maynard
frem@gwtc.net

605-745-7562

cell 890-7245

fax 605-745-6835



Date: May 21, 2014

Subj: PDM Public Meeting Notice

Shannon County and the Oglala Sioux Tribe are creating an All Hazard Mitigation Plan for Shannon County and the Pine Ridge Reservation. As part of this process, Shannon County will be conducting a planning meeting on Tuesday, May 27th, 2014 at the Batesland Fire Department, starting at 7pm.

We need natural and man-made disaster information to include in this mitigation plan and your assistance will help identify hazard vulnerabilities and what can be done to prevent future risks and dangers to the people in Shannon County and the Pine Ridge Reservation.

If you are unable to attend and would like to express comments on the plan, please call me at 605 745-7562 or cell 605 890-7245 or email me your comments at frem@gwtc.net.

Franklin W. Maynard, CFM & CEM
Fall River/Shannon County Emergency Management

SHANNON COUNTY PUBLIC MEETING
MAY 27, 2014 @ 7PM
BATESLAND FIRE DEPARTMENT

NAME	
Steven Rous	Batesland Fire
Marion Schultz	Batesland Fire
Dennis Rous	Batesland Fire
Derrick Rous	Shannon County Resident
Kenny Boomer	Batesland Fire
Alex Rous	Batesland Fire
Larry Kehn	Shannon County Resident
David Hauck	Batesland Fire
Bryan Weehsler	Shannon County Resident
Ross Janis	Batesland Fire
Nathan Kehn	Batesland Fire
Bryan Kehn	Shannon County Commissioner
Kevin Kuxhaus	Batesland Fire
Aaron Smith	Batesland Resident
Will Smith	Batesland Resident
Lee Smith	Shannon County Resident
Troy Kuxhaus	Batesland Resident
Rena Conroy	Batesland Town Clerk
Mark Donovan	Batesland Town Board Member
Frank Maynard	Shannon County Emergency Manager

Appendix B: Other Documentation

Oglala Sioux Tribe Mitigation Team

1. Which district do you live in? _____

2. Representing Information Self _____ Tribe _____ Other _____

3. Age Category: 18 – 30 _____ 31 – 42 _____ 43 – 55 _____
56 – 68 _____ 69 – 80 _____ 81 & over _____

4. Which of these natural disasters do you think might cause the greatest harm to people and property on your Reservation? (Pick top 5)

- a. Low: occurred 0 times in the past 10 years
- b. Medium: occurred between 1 and 4 times in the past 10 years
- c. High: occurred 5 or more times in the past 10 years

	Low	Medium	High
<input type="radio"/> Flooding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> Drought	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> Extreme Heat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> Wildfire	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> Urban Fire	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> Tornado/High Winds	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> Landslide	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> Severe Thunderstorm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> Severe Winter Storms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> Animal Disease	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> Plant Disease	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> Earthquake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

5. Which of these natural disasters are you most concerned about impacting your family?
(Select top 5)

- a. Low: less than 10% of the population impacted
b. Medium: 10-40% of the population impacted
c. High: more than 40% of the population impacted

	Low	Medium	High
<input type="radio"/> Flooding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> Drought	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> Extreme Heat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> Wildfire	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> Urban Fire	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> Tornado/High Winds	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> Animal Disease	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> Severe Thunderstorms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> Severe Winter Storms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> Plant Disease	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> Landslide	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please

6. Which of the natural disasters, that you have chosen, do you think may potentially impact the economy?

- a. Low: little to no impact on economy
b. Medium: temporary loss of income or jobs
c. High: long term disruption or permanent loss of income and jobs

Please check the appropriate box.	Low	Medium	High
<input type="radio"/> Flooding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> Drought	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> Extreme Heat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> Wildfire	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> Urban Fire	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- | | | | |
|--|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> Tornado/High Winds | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| <input type="radio"/> Animal Disease | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| <input type="radio"/> Severe Thunderstorms | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| <input type="radio"/> Severe Winter Storms | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| <input type="radio"/> Plant Disease | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| <input type="radio"/> Landslide | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

7. What actions have you taken to prepare your family/household for potential disasters (check all that apply):

- ☐ Receive text or other real-time notification related to severe weather
- ☐ Have a Weather Radio
- ☐ Develop family/household emergency plan
- ☐ Know how to shut off utilities
- ☐ Mapped evacuation routes
- ☐ Have a plan for pets during disaster
- ☐ Know/familiar with school and/or childcare's emergency procedures
- ☐ Have located nearest storm shelter
- ☐ Have an Emergency Supply Kit (food/water, medication, pet food, important documents, cash supplies for young children/family members with special needs, etc.)
- ☐ None

Other:

8. What is the best way to notify you/your household of potential disaster events (check all that apply):

- ☐ Text alerts
- ☐ Outdoor sirens
- ☐ Television alerts
- ☐ Radio alerts
- ☐ Social Media

Other (please specify)

9. How do you learn about disasters and the threat they may pose to your household and property (check all that apply):

- ☐ FEMA Website
- ☐ South Dakota Office of Emergency Management (SDOEM) Website
- ☐ Oglala Sioux local newspaper
- ☐ Other local websites
- ☐ Newspaper
- ☐ Television
- ☐ Radio
- ☐ Local Officials
- ☐ Friends and Neighbors
- ☐ Making disaster related information available at local events

Other (please specify)

10. What should Pine Ridge Reservation plan to focus on to reduce disruption of services and to protect the people of the reservation?

- ☐ Shelters: _____
- ☐ Transportation: _____
- ☐ Warning system: _____
- ☐ Education/training: _____
- ☐ Anchor or harden structures (mobile homes): _____

Other (please specify)

11. How can facilities or other structures be strengthened to better withstand any given disaster (i.e. snow load, high winds, flooding, etc.)? What specific buildings would you be most concerned about? If more space is needed use the back of the page.

Example: Mobile homes should be anchored down.

OST/SHANNON COUNTY
MITIGATION PROJECTS

STAPLEE Process: Project Prioritization

(Ranking 0 is "not applicable", - has "no impact" and + has "impact")

#	Project Name	Social 0,-,+	Technical 0,-,+	Admin 0,-,+	Political 0,-,+	Legal 0,-,+	Economic 0,-,+	Environ. 0,-,+	Responsible Dept.
1	Anchor Mobile Homes	+	+	+	+	+	+	+	OST Council
2	Establish Family Shelters	+	+	+	+	+	+	+	Districts
3	Establish School Shelters	+	+	+	+	+	+	+	EOC
4	More Outdoor Sirens	+	+	+	-	-	+	-	OST Council
5	Improved Warning Systems	+	+	+	+	+	+	+	OST Council
6	Weather Radio Alerts	+	+	+	+	+	+	+	EOC
7	Emergency Supply Kits	+	+	+	-	+	+	+	IHS
8	Emergency Mitigation Measures	+	+	+	-	+	+	-	FEWA
9	Generators For Shelters	+	+	+	-	-	+	+	OST Council
10	Establish Building Codes	+	+	+	+	+	+	+	OST Council
11	Improved Emergency Transport	+	+	+	-	-	+	+	OST Council
12	Need Emergency Operations Plan	+	+	+	+	+	+	+	OST Council
13	Trained First Responder Team	+	+	+	-	+	+	-	OST Council
14	Rebuild Unsafe Structures	+	+	+	+	+	+	+	OST Council
15	Improved Communications	+	+	+	+	+	+	+	EOC
16	Seek Funding for Mitigation	+	+	+	+	+	+	+	OST Council
17	Instruction on Utility Shut-Off	-	+	+	-	+	+	+	OST Council
18	Guidance for Evacuations	+	+	+	-	+	+	+	EOC
	1-18 taken from District Surveys								

①

	SHANNON COUNTY							
19	Provide for planning, zoning for open space preservation	+	+	+	-	-	+	+
20	Utility, building & infrastructure relocation out from flood areas	+	+	+	-	+	+	+
21	Evacuation plans to protect citizens & structures	+	+	+	+	+	+	+
22	Mutual aid agreements for emergency response	+	+	+	+	+	+	+
23	Inventory of all assets for critical facility protection	+	+	+	-	+	+	+
24	Provide community information & training for hazard protections	+	+	+	-	+	-	+
25	Backup power supplies for critical facilities	+	+	+	-	+	+	+
26	Building code enforcement	+	+	+	+	+	+	+
27	Evacuation routes for public safety	+	+	+	-	-	+	-
	BENNETT COUNTY							
28	Emergency generator for critical facilities	+	+	+	-	+	+	+
29	Require and provide services to ensure all emergency personnel are at EOC	+	+	+	-	-	+	-
30	Provide public service announcements to all citizens in hazard events	+	+	+	-	+	-	-
31	Institute burn bans fire danger is high	+	+	-	-	+	-	+
32	Construct safe rooms to protect against tornados/high winds	+	+	+	-	+	+	+

Social

Technical

Admin

Political

Legal

Economic

Environmental

Responsible
Department

(2)

		Social	Technical	Admin	Political	Legal	Economic	Environmental	Responsible Dept.
33	Raise public awareness on impending dangers from natural disasters	+	+	-	-	-	+	+	EC/CECILIA AKSIZ
34	Install additional warning systems	+	+	+	-	+	+	-	CEC Council
	OTHER COMMUNITIES								
35	Conserve water during drought periods	+	+	+	-	+	+	+	CEC Utility 4-1115
36	Prevent overgrazing during dry periods	+	+	+	+	+	+	+	CEC Council 4-1115
37	Educate residents on water conservation	+	+	-	-	-	+	+	CEC Council 4-1115
38	Assist vulnerable populations at risk during extreme temperatures	+	+	+	+	+	+	+	CEC Council 4-1115
39	Educate property owners on freezing pipes	+	+	-	-	-	-	+	CEC Council 4-1115
40	Inventory and identify community shelters	+	+	+	-	+	+	+	CEC Council 4-1115
41	Protect critical facilities in flood prone areas	+	+	-	-	-	+	+	CEC Council 4-1115
42	Adopt and enforce building codes for manufactured homes	+	+	+	+	+	+	+	CEC Council 4-1115
43	Install warning systems in all large populated communities	+	+	+	-	-	-	-	CEC Council 4-1115
44	Develop lists of volunteers with ATVs and snowmobiles	+	+	+	+	+	-	-	CEC Council 4-1115
45	Conduct tornado awareness activities	+	+	+	-	+	+	+	CEC Council 4-1115
46	Provide for structural firefighting equipment and personnel	+	+	+	+	+	+	+	CEC Council 4-1115

3