



McCOOK COUNTY PRE-DISASTER HAZARD MITIGATION PLAN UPDATE 2019

Approved: September 16, 2019

PREPARED BY:

McCook County Emergency Management

Technical Assistance Provided By:

South Eastern Council of Governments

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Region VIII
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FEMA

R8-MT

September 16, 2019

McCook County Commissioners
P.O. Box 190
Salem, South Dakota 57058

Dear McCook County Commissioners:

We are pleased to announce the approval of the McCook County Pre-Disaster Hazard Mitigation Plan as meeting the requirements of the Stafford Act and Title 44 Code of Federal Regulations §201.6 for a local mitigation plan. This approval extends to McCook County, the Cities of Bridgewater, Canisota, Motrose and Salem, and the Town of Spencer.

The approved jurisdictions are hereby eligible for FEMA Hazard Mitigation Assistance grant programs. All requests for funding will be evaluated individually according to the specific eligibility and other requirements of the particular programs under which the application is submitted. Approved mitigation plans may be eligible for points under the National Flood Insurance Program Community Rating System.

This plan is approved through September 15, 2024. A local jurisdiction must revise its plan and resubmit it for approval within five years to continue to be eligible for mitigation project grant funding. We have provided recommendations for the next plan update on the enclosed Plan Review Tool.

We wish to thank the jurisdictions for participating in the planning process and commend your continued commitment to reducing future disaster losses. Please contact Jim Poppen, State Hazard Mitigation Officer, South Dakota Office of Emergency Management, at jim.poppen@state.sd.us or (605) 773-8095 with any questions on the plan approval or mitigation grant programs.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeanine D. Petterson".

Jeanine D. Petterson
Mitigation Division Director

Enclosure

cc: Jim Poppen, State Hazard Mitigation Officer, South Dakota Office of Emergency Management

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Executive Summary

The Hazard Mitigation Plan for McCook, South Dakota is an update of the 2013 *McCook County Pre-Disaster Mitigation Plan*. The purpose of this Mitigation Plan update is to ensure that McCook County's strategies to reduce risks to people and property from hazard events are relevant and effective. This plan is in compliance with the Federal Emergency Management Agency's (FEMA) latest Local Mitigation Planning Guidance and the requirements of the Disaster Mitigation Act of 2000. Through the development and adoption of this update, McCook County and the incorporated communities within, are eligible for FEMA Hazard Mitigation Grant Programs.

Section 1: Introduction outlines the purpose and scope of the planning process. The Hazard Mitigation Plan Update for McCook County is a multi-jurisdictional plan that includes all unincorporated areas of the counties as well as the cities of Bridgewater, Canistota, Montrose, Salem, and Spencer. The purpose of the plan is to help McCook County anticipate, withstand, and recover from hazards and in turn, reduce the risks to life and property associated with hazard events. The scope of the planning process was two-fold: to revise the 2013 plan in order to create a user-friendly document that addresses the current needs of the county, while at the same time meeting the requirements of the Disaster Mitigation Act of 2000.

Section 2: Planning Process discusses the process that was used to develop the Plan. All jurisdictions participated in the development of the Plan's update through representation on the Hazard Mitigation Planning Team. Throughout the planning process, all meetings were open to the public. In addition, public events were held to allow residents and other stakeholders to provide input into the Plan's updates.

Section 3: Risk Assessment identifies and profiles the hazard events that threaten McCook County. This section provides a discussion of local assets and analyzes hazard events that have occurred since the 2013 Plan was adopted, describes the county's progress toward meeting the

mitigation goals that were established in the 2013 Plan, and assesses each individual community's vulnerabilities.

Section 4: Mitigation Strategies details the mitigation goals, objectives, and action items that were developed through the plan update process. Five overall goals were established during the planning process:

- *Reduce injury and loss of life from hazards;*
- *Reduce damage to existing and future structures;*
- *Reduce the losses to critical facilities, utilities, and infrastructure from hazards;*
- *Reduce impacts to the economy, the environment, and cultural resources from hazards;*
- *Support and assist local mitigation capabilities and efforts.*

Section 5: Action Plan & Implementation sets forth the Hazard Mitigation Plan implementation process and establishes roles and responsibilities related to the update and maintenance of the Plan.

Section 6: Plan Adoption provides evidence of the formal adoption of the Plan by McCook County and the participating jurisdictions.

The *Hazard Mitigation Plan Update for McCook County* was developed by the McCook County Emergency Management Departments with the technical assistance of the South Eastern Council of Governments.

Section One: Introduction

McCook County is vulnerable to natural and manmade disasters that have the potential to impact the County's infrastructure, the welfare of its residents, and the economy. Past disasters have inflicted costly damages upon McCook County. While these disasters cannot be eliminated, with mitigation planning, the response and recovery from these events can be improved and adverse impacts to individuals, businesses, and communities can be reduced. Hazard mitigation is the effort to make communities more resilient, and better able to anticipate, withstand, and recover from hazard events.



In order to be eligible for FEMA's Hazard Mitigation Assistance (HMA) grant programs, the Disaster Mitigation Act of 2000 (DMA 2000) requires that local governments have a FEMA-approved mitigation plan in place. In these plans, local jurisdictions must demonstrate that proposed mitigation projects assess the unique risks and capabilities of each community. They must be

updated every five years to demonstrate that progress has been made toward meeting the community's mitigation goals and to ensure that the plan continues to be an effective mitigation tool.

McCook County Pre-Disaster Hazard Mitigation Plan is an update of the 2013 Pre-Disaster Mitigation Plan. This document details the planning process that was used to update the Plan; considers changes in the built environment and population of the County and its communities since 2013; examines the communities' progress toward meeting the mitigation goals set in the previous Plan; re-evaluates hazard threats; and establishes new mitigation goals that will lead to more resilient communities.

The McCook County Pre-Disaster Hazard Mitigation Plan Update is a multi-jurisdictional plan that includes the unincorporated areas of McCook County and the cities of Bridgewater, Canistota, Montrose, Salem, and Spencer.



The plan provides goals, objectives, and mitigation activities developed by the Mitigation Planning Team that will guide the County's disaster mitigation efforts over the next five years.

SECTION TWO: PLANNING PROCESS



A diverse group of emergency management professionals, local officials, and citizens participated in the hazard mitigation planning process. In July 2018, the Emergency Management Director from McCook County invited community members and local and regional agency representatives to be part of the Mitigation Planning Team. In addition, a request was made to each participating City to appoint a specific person to represent their jurisdiction on the Mitigation Planning Team.

Members of the Mitigation Planning Team were tasked with participating in the planning meetings, providing information and documents used to update the Plan, proposing mitigation actions, and reviewing the draft as it was assembled. The target was to include representation from a diverse section of hazard mitigation stakeholders. Individuals from the following groups were invited to participate on the planning team:

- McCook County (commissioners, planning/zoning staff, floodplain administrator, etc.)
- Municipalities within McCook County (Mayors, city council members, finance officers, public works staff, etc.)
- Utility providers, including TM Rural Water District, Southeastern Electric Cooperative, Hanson Rural Water System, and, B-Y Water District.
- Other entities: Bridgewater-Emery School District, Montrose School District, McCook Central School, Avera Medical Group, and neighboring county Emergency Managers.

Table 2.1 Lists the planning team members, including their attendance at the planning meetings that were held as the plan was being developed.

HAZARD MITIGATION PLANNING TEAM REPRESENTATIVES							
NAME	REPRESENTING	POSITION	MEETING ATTENDANCE				
			8-6-18	9-20-18	10-25-18	11-29-18	5-8-19
Leslie Mastroianni	SECOG	Planner	X	X	X	X	X
Brad Stiefvater	McCook County	Emergency Management	X		X	X	
Brad Stiefvater Jr.	McCook County	Emergency Management	X				X
Dr. Cheryl Thaler	McCook Central School District	Superintendent	X	X		X	
Robert Hoiten	City of Montrose	Council Member	X	X			
Dan Schroeder	Hanson Rural Water	Manager	X	X			
Jay Jorgensen	TM Rural Water District	Manager	X	X	X		
Beverly Heidelberger	Town of Spencer	Board Member	X	X	X	X	X
Mic Kreutzfeldt	McCook County	Highway Superintendent	X	X		X	X
Jay Cleveland	Southeastern Electric Cooperative		X	X		X	X
Lori Heumiller	City of Salem	Finance Officer	X	X	X	X	
Gabe Laber	DGR Engineering	Engineer	X				X
Dallas Furgeson	City of Bridgewater	Council Member		X			
Michael Damm	City of Bridgewater	Mayor		X	X	X	
Darin Nugteren	City of Canistota	Public Works Director		X	X		
Geralyn Sherman	McCook County	County Auditor		X	X	X	X
Daryl Sieverding	City of Montrose	Public Works				X	
Sara Smith	City of Montrose	Finance Officer					X
Joan Julson	City of Bridgewater	Finance Officer					X

All communities and McCook County personnel participated in the planning process. In addition, there was representation from the McCook Central School District, Southeastern Electric Cooperative, DGR Engineering, Hanson Rural Water, and TM Rural Water District.

Public notices of the initial and subsequent planning sessions were sent to the following newspapers:

- *Salem Special*
- *Bridgewater Tribune*
- *Canistota Clipper*
- *Montrose Herald*

Meeting 1

The initial Mitigation Planning Team (“Team”) meeting was held August 16, 2018. At this meeting, the group was introduced to the hazard mitigation planning process and the purpose of the plan update. Important definitions (hazard mitigation and climate change) were presented along with examples of possible mitigation projects.

The Team was asked to look at the impact hazards have on their assets and to begin thinking of possible actions to mitigate against future loss. The Team reviewed hazards prevalent in McCook County. Team members ranked the disasters from the most common to those rarely found in McCook County. Team members were tasked with going to their respective jurisdictions and initiate dialogue regarding hazards in the community.

Meeting leaders reiterated the importance of engaged involvement in the update process and stressed the desire to include a diverse representation of stakeholders from McCook County.

Meeting 2

The second Team meeting was held September 20, 2018. At this meeting, discussions focused on the locations and values of critical infrastructure. Discussion was held about the definition and types of community assets, ranging from people to the natural environment. The Team, as a group, identified the probability of hazards occurring in the area and the vulnerability of assets in McCook County. The team discussed the associated impacts of those hazards with a high probability of occurrence and determined areas of impact. The Team was asked to return to their jurisdictions and have conversations about critical facilities and the potential impact in the event of disaster.

Meeting 3

The third Team meeting was held October 25, 2018. The Team reviewed the five Goals and Objectives as presented in the April 2014 State of South Dakota Hazard Mitigation Plan. The Team elected to adopt the State of South Dakota’s hazard mitigation goals and objectives.

The Team developed hazard problem statements. For each problem statement, a mitigation action was identified. The January 2013 publication *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards* was used as an added resource to assist in mitigation action

identification. Team members were encouraged to look at innovative mitigation actions for use in the jurisdiction.

Meeting 4

The fourth meeting was held November 29, 2018. Team discussion revolved around specific mitigation projects, how to determine cost, established a timeframe for completion, resources to assist in project completion, and project prioritization. Each Team member was encouraged to facilitate discussions with their respective boards and councils regarding mitigation actions to include in the Plan.

The Team also discussed the effect of the proposed mitigation projects on hazards and how each project would meet the Plan's goals and objectives.

Meeting 5

The final team meeting was held May 8, 2019. The Team reviewed the final draft of the 2019 McCook County Pre-Disaster Hazard Mitigation Update.

Public Forums

The final draft was presented to the residents of McCook County at a public forum held in conjunction with the final Team meeting. The Public Form was held May 8, 2019, at the County Courthouse in Salem. The cities of Montrose and Bridgewater added mitigation actions. No other comments were received.

COORDINATION WITH OTHER PLANS

During the Plan update process, existing planning documents were referenced to ensure that new plan goals aligned with other established plans and processes within McCook County. Each jurisdiction's Comprehensive Plan was reviewed and evaluated to ensure the Comprehensive Plan's goals and objectives were comparative with the McCook County Pre-Disaster Mitigation Plan Update. The current State of *South Dakota Hazard Mitigation Plan* provided a foundation to assess hazard vulnerability for McCook County.

Jurisdiction Plans

McCook County

McCook County Comprehensive Plan 2000-2020

McCook County	<i>Discovery Report</i>
McCook County	<i>Flood Insurance Study</i>
McCook County	<i>Master Transportation Plan</i>
City of Bridgewater	<i>Bridgewater Comprehensive Plan 1997-2017</i>
City of Canistota	<i>Canistota Comprehensive Plan 2035</i>
City of Montrose	<i>Montrose Comprehensive Plan January 1996</i>
City of Salem	<i>Salem Comprehensive Plan April 1996</i>
City of Salem	<i>Salem Housing Study 2017</i>
City of Spencer	<i>Spencer Comprehensive Plan 2000-2020</i>

SECTION THREE: RISK ASSESSMENT



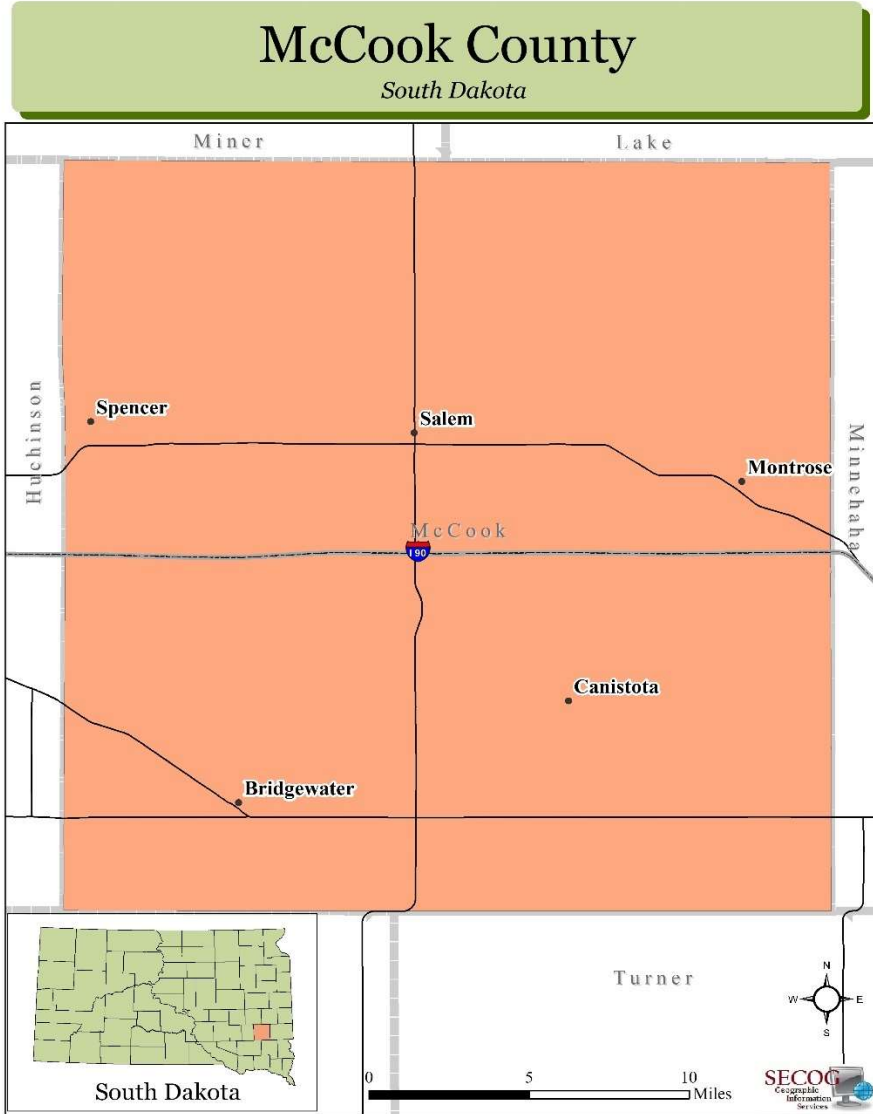
A step-by-step approach was utilized to identify potential hazard risk for McCook County. Hazard risk is influenced by a community's assets – things like population and development characteristics, public facilities and infrastructure, the natural environment, and the local economy – and how those assets relate to hazard threats. This section will describe the multi-jurisdictional assets, profile hazards, and detail progress that has been made on previous mitigation goals.

Numerous resources were used to complete this risk assessment for McCook County. The State of South Dakota Hazard Mitigation Plan was a major source of information on potential hazard risks. In addition, hazard histories were obtained from a number of sources, including the National Climate Data Center, National Weather Service, US Department of Agriculture, and the United States Geological Survey. The Mitigation Planning Team was instrumental in identifying assets and the risk posed by locally prevalent hazards.

The Mitigation Planning Team reviewed a variety of potential hazards and assessed their potential impacts on McCook County. The list of potential hazards was narrowed down to focus on those that have the most significant impact on the area and where potential pre-disaster mitigation activities would result in the most substantial benefit.

COMMUNITY ASSETS

McCook County



People

McCook County is part of the Sioux Falls Metropolitan Statistical Area (MSA). The Sioux Falls MSA is the most densely populated area in South Dakota. The estimated population in the MSA is approximately 268,000. McCook County, in the far northwestern corner of the MSA, has an estimated population of 5,499 according to American Community Survey (ACS) 2017 estimates. The ACS further states that in 2010, the population density per square mile in

McCook County was 9.8 persons in contract to Sioux Falls' population density of 2,109.1 persons per square mile.

McCook County has seen a slight decline in population over the last several years. The 2010 US Census indicated a population of 5,618 residents. The 2013-2017 American Community Survey 5-year estimates a 1.83 percent decrease in population to 5,515. There are 2,579 housing units in McCook County with an owner-occupied housing rate of 75 percent. In comparison, the State of South Dakota's owner-occupied housing rate is 67.9 percent.

Median household income in McCook County of \$60,808 trended slightly higher than the \$54,126 median household income for the State of South Dakota (US Census Bureau, 2013-2017 American Community Survey 5-year estimates). Current American Community Survey data states an estimated 9.3 percent of McCook County individuals live below the poverty level.

The median age in McCook County was 40.7 years in 2017. The median age has been slowly declining and is at its lowest in the last ten years. Services and facilities for vulnerable populations in the county are located in the urban areas. There are no formal senior housing or assisted living facilities located outside the urban areas. Additionally, there are no organized child care centers located in the rural areas of the county.

Vulnerable populations have special needs during times of disaster. In the context of emergencies, vulnerable groups may include individuals with disabilities, very young children, and the elderly. One measure of the strength of a community's response and recovery system is its attentiveness to its most vulnerable citizens—children, the frail elderly, the disabled, and the impoverished and disenfranchised.

The following table provides insight into the populations who may face difficulty with evacuations, understanding emergency communications, or may need access to specialized medical equipment and medications.

	PERCENT WITH A DISABILITY	PERCENT UNDER 5 YEARS OLD	PERCENT 65 YEARS AND OVER
South Dakota	8.3%	7.1%	16.3%
McCook County	8.0%	7.1%	18.5%

Source: US Census Bureau, 2013-2017 American Community Survey 5-year estimates

The South Dakota Department of Social Services lists seven child care providers in McCook County. However, this count does not include many of the in-home child care providers. Nursing homes, assisted living facilities, and housing reserved for senior citizens are easily identified during disaster response. Seniors or persons with a disability, like home day care providers, not in an identified facility are more vulnerable to hazards.

The Lake Vermillion Recreational Area, a South Dakota State Park located in rural McCook County, draws a number of visitors to the county. The park offers a public beach, boating, campgrounds, fishing, and picnic areas. Visitors to the area swell during the summer months, but there is still activity year-round.

Economy

The 2012 US Census Survey of Business Owners states that there are 606 companies in McCook County. This figure includes enterprises located in the communities. As of 2013, over 99 percent of county land is used for agriculture. Farming and agriculture-related businesses are the economic driver in McCook County. According to the 2012 Census of Agriculture, the number of farms had grown by four-percent over a five-year span to total 568. The average farm size is 639 acres and over 362,000 acres of land in McCook County are dedicated to farming. The average farm has a market value of crop and livestock sales of \$276,347.

Built Environment

There are four major highways that cross through McCook County. Interstate 90, an east-west transcontinental freeway, bisects the county. Another major highway, US-81, also passes through the County. US Route 81 is a major north-south highway that extends over 1,200 miles in the central United States. State Highway 38 runs through McCook County as it runs east from Mitchell, South Dakota to Sioux Falls, South Dakota. Lastly, State Highway 42 is a 60-mile stretch of roadway that passes through McCook County as it spans the area between Ethan, South Dakota and Sioux Falls, South Dakota.

TM Rural Water District has several assets in rural McCook County. The District has a North Booster Station that provides both water storage and pressurization of waterlines in all areas north of Interstate 90. The North Water Tower is the main water storage and pressure sustaining station for rural and small-town customers inside TM Rural Water District Boundaries. Well Number 4 is located in McCook County. This is a high production well that pumps 700 gallons per minute.

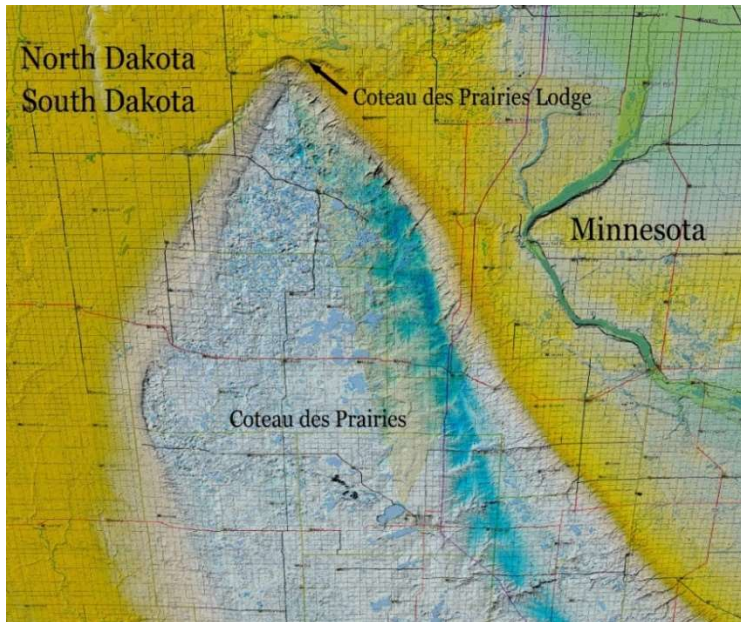
There are three rural water systems serving McCook County: TM Rural Water District, Kingbrook Rural Water System and Hanson Rural Water System. There are no rural sanitary sewer districts in the county.

Natural Environment

While agriculture takes a front seat in McCook County's rural economy, not all land is dedicated to farming. Most prominent is the State managed Lake Vermillion Recreation Area. Central to the park is a 512-acre reservoir that features a beach, boat ramp, and fishing. The Recreation

Area also features campgrounds and picnic shelters. McCook County is also home to federal and state game production areas.

The geography of McCook County varies by definition from the western edge to the eastern edge



Coteau des Prairies

of the county. The western quarter of the County, from Salem to the Hanson County border, is considered part of the Lower James River watershed. The Lower James River Watershed begins just south of Huron and flows southward, converging with the Missouri River at the City of Yankton. The James River basin has a sub humid, continental climate characterized by pronounced seasonal differences in temperature and precipitation. The eastern three-quarters of McCook County is located in the eastern Vermillion River Basin. The Basin is formed within a topographic feature known as the Coteau de Prairies. The Coteau has

what is known as a flatiron shape lying in a general northwest to southeast direction. It is about 200 miles long and 80 miles wide at the widest point. The northern part of the Coteau de Prairies has geologically developed features of potholes, sloughs, and lakes. During periods of low precipitation, these features tend to hold back water and do not contribute to the drainage of the Big Sioux River. Conversely, during wet years, this area can accumulate enough moisture to greatly increase the water supply to the drainage basin. These wet years pose a higher risk for flood hazards in McCook County. Named sloughs and lakes include:

Island Lake	Tschette Slough	Lehrman Slough
Macke Lake	Gross Lake	Lions Lake
Schimmel Slough	Hyde Slough	Tuschen Slough
	Forsch Lake	

In general, most soil in the region is fertile with adequate rainfall to meet agricultural production needs. In terms of precipitation, the average annual rainfall is 27.01 inches and falls during the spring and warm summer months. Snowfall occurs mostly in light to moderate amounts during the winter, and the annual average is at 40.3 inches. The climate of the region is considered a

humid continental climate which is characterized by hot, relatively humid summers and cold, drier winters (High Plains Climate Data Center).

Population density may have an effect on the impact of hazard mitigation activities and the cost-benefit relationship of mitigation activities. In McCook County –

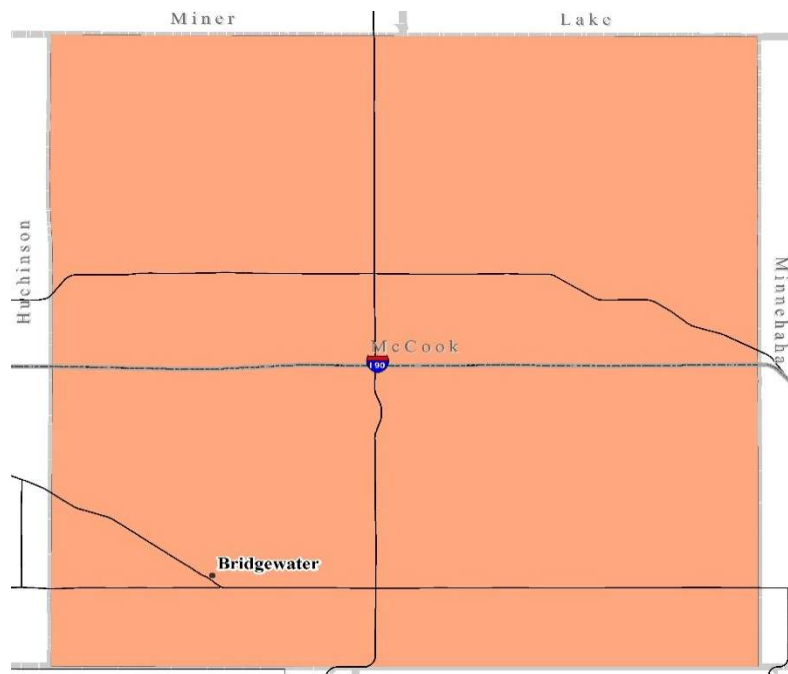
Area in Square Miles	576.87
Water Area in Square Miles	2.66
Land Area in Square Miles	574.20
Population Density per Square Mile of Land Area	9.8

Source: US Census

Bridgewater

People

Bridgewater is located in the southwest corner of the county. According to the 2013-2017 American Community Survey, Bridgewater’s population was 424. This is a decrease from the 492 residents counted during the 2010 US Census and an even greater drop from the 607 residents in 2000. There are 254 housing units in Bridgewater with an owner-occupied housing rate of 73.5 percent.



Median household income in Bridgewater was an estimated \$56,875 according to the 2013-2017 American Community Survey 5-year estimates. The median household income in Bridgewater is less than the median household income of McCook County. This trend continues with the number of residents living in poverty. The estimated 12.1 percent of residents living in poverty is sharply higher than the 9.3 percent rate of McCook County.

Economy

The greatest economic driver in the city is health care. The Diamond Care Center is a campus community that offers independent and assisted living options, outpatient therapy, short stay rehabilitation, and long-term care services. With 75 employees, the Diamond Care Center is Bridgewater's largest employer.

The Bridgewater-Emery School is the city's second largest employer with 46 staff and faculty. The Bridgewater community has several ag-related enterprises, from agronomy services to trucking. The local economy also has a mix of small business such as car repair, insurance, tax accounting.

Built Environment

There are two primary highways that serve Bridgewater. South Dakota Highway 42 is a 60-mile stretch of roadway that passes through Bridgewater as it spans the area between Ethan, South Dakota and Sioux Falls, South Dakota. SD Highway 262 is a state roadway that provides access to Interstate 90 through neighboring Emery. Unique to Bridgewater is the Burlington Northern rail line that skirts the southeast edge of the city.

The City's water provider is Hanson Rural Water. Bridgewater has two wells that can produce up to 355 gallons of water per minute. In addition, the city has a 32,000-gallon concrete reservoir and a 15,000-gallon hydropneumatics pressure tank. Bridgewater has a city-owned and operated wastewater system. There are wastewater lagoons approximately one mile southwest of the city. Households heat their homes with either propane gas or electricity.

Fire protection and ambulance services are provided by the Bridgewater Volunteer Fire Department and Bridgewater Volunteer Ambulance Service. The fire department has an ISO rating of 7.

Avera's Rural Medical Clinic offers primary health care to the residents of Bridgewater. The Diamond Care Center is a medical facility that focuses on assisted living and long-term care. The Center also offers outpatient therapy and short stay rehabilitation. Bridgewater is home to a chiropractic service that's rounds out the community's health care services.

Bridgewater has a small commercial, or downtown, district, along Main Street. This area is anchored by the Bridgewater-Emery School. The Bridgewater -Emery School is an American Red Cross shelter in case a disaster would affect the community. City Hall is located in this area.

Bridgewater is home to the Learning Bridge Day Care. There are also home day care providers to supplement child care needs.

Natural Environment

Bridgewater covers approximately 1.13 square miles of land and has no water area. The topography of Bridgewater is indicative of the Great Plains. Consequently, during times of heavy rainfall when the ground is saturated, the water doesn't drain well and pools in roadways and yards.

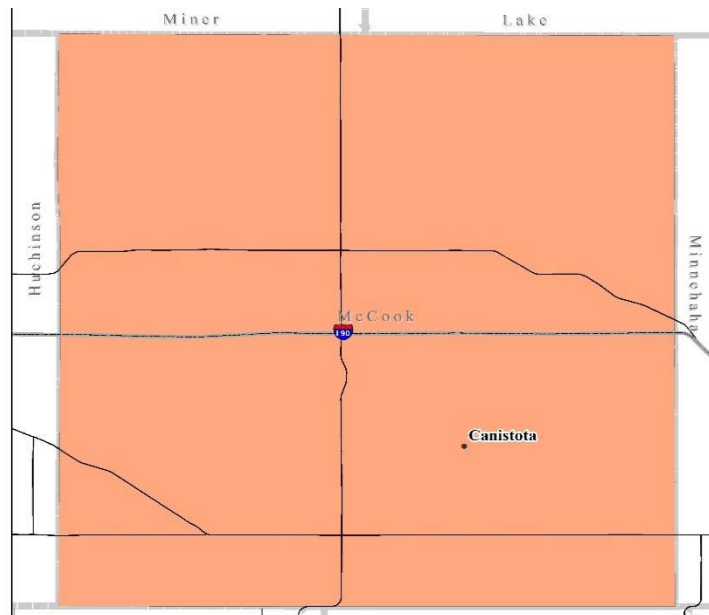
The City has a community park with a picnic shelter, restrooms, and a playground.

Population density in the non-rural areas has an impact on housing, a community's infrastructure, access to resources, and public safety. Population density may also have an effect on the impact of hazard mitigation activities and the cost-benefit relationship of mitigation activities. In Bridgewater –

Area in Square Miles	1.13
Water Area in Square Miles	0.00
Land Area in Square Miles	1.13
Population Density per Square Mile of Land Area	437.3

Source: US Census

Canistota



People

Canistota is located in the southeast corner of the county. According to the 2013-2017 American Community Survey, Canistota's population was 639. This is a decrease from the 656 residents counted during the 2010 US Census and an even greater drop from the 700 residents in 2000. There are 281 housing units in Canistota with an owner-occupied housing rate of 75.2 percent.

Median household income in Canistota was an estimated \$52,350

according to the 2013-2017 American Community Survey 5-year estimates. The median household income in Canistota is less than the median household income of McCook County. This trend continues with the number of residents living in poverty. The estimated 15.9 percent of residents living in poverty is significantly higher than the 9.3 percent rate of McCook County.

Economy

Canistota has a wide range of economic drivers for a community of its size. The City hosts a small grocery store, gas station, laundromat, hotels, banks, and an auto dealership. These businesses provide service-sector employment and contribute to the city's sales tax revenue. Almost 30 percent of business and industry in Canistota is educational services, healthcare, and social assistance. Three local businesses fall into that 30-percent.

The Canistota School District employs approximately 24 teachers and administrators along with support staff such as maintenance, lunch servers, and administrative staff. The Canistota School District has around 200 K-12 students.

The Good Samaritan facility in Canistota provides post-acute rehabilitation services through skilled nursing care. The facility is available for people who no longer need hospital care but would benefit from additional therapy and care before returning home after injury, illness, or surgery.

The Ortman Clinic is a chiropractic clinic that draws people from across the country to experience their services. The clinic is a central focus of downtown Canistota. Because the clinic draws patients from across the country and abroad, there are a number of hotels and other service-related businesses that cater to the influx of visitors to the community. The Ortman Hotel, in addition to providing lodging, also has meeting rooms and is a community shelter in the event of emergency.

Built Environment

Canistota is located between Interstate 90 to the north and South Dakota Highway 42 to the south. Access to Canistota off of these primary highways is by county roads to the north and south.

The City's water provider is TM Rural Water District. Canistota has a 45,000-gallon elevated water storage tank. Canistota has a city-owned and operated wastewater system. There are wastewater lagoons approximately one mile southwest of the city.

Canistota Volunteer Fire and Rescue provides emergency services in the immediate Canistota area. The department has approximately 18 members.

Sanford Health– USD Clinic provides primary care services at its Canistota location. The Good Samaritan facility in Canistota provide post-acute rehabilitation services. Chiropractic services are available through the Ortman Clinic.

Canistota has a small commercial, or downtown, district, along Main Street. This area is anchored by the Ortman Clinic and spreads for several blocks. The downtown area is home to most of the commercial ventures in the community. City Hall is located in this area.

Canistota has two home day care providers that complement the Canistota School District.

Natural Environment

Canistota covers approximately one-half square mile of land and has no water area. The topography of the Canistota area is nearly flat with a slight slope to the southwest.

Population density in the non-rural areas has an impact on housing, a community’s infrastructure, access to resources, and public safety. Population density may also have an effect on the impact of hazard mitigation activities and the cost-benefit relationship of mitigation activities. In Canistota–

Area in Square Miles	0.56
Water Area in Square Miles	0.00
Land Area in Square Miles	0.56
Population Density per Square Mile of Land Area	1,170.1

Source: US Census

Montrose

People



Montrose is located in the northeast quadrant of the county. According to the 2013-2017 American Community Survey, there were 478 Montrose residents. This is a slight increase from the 472 residents counted during the 2010 US Census and an even greater increase from the 460 residents in 2000. There are 208 housing units in Montrose with an owner-occupied housing rate of 75.4 percent.

Median household income in Montrose was an estimated \$62,917 according to the 2013-2017 American Community Survey 5-year estimates. The median household income in Montrose exceeds

the \$60,808 median household income of McCook County. This trend continues with the number of residents living in poverty. The estimated 5.4 percent of residents living in poverty is lower than the 9.3 percent rate of McCook County.

Economy

Montrose, while it has a grain elevator and other agriculture-related businesses, has a recreation and service-based component to its local economy. Montrose is close to the Lake Vermillion Recreation Area in rural McCook County. Montrose enjoys the overflow of the tourist trade and meets the demand with a city campground, community swimming pool, a restaurant, bar and grill, a gas and convenience store, and assorted small retail outlets.

The local school district also boosts the local economy. There are approximately 25 teachers, administrators, and staff who work at the Montrose School District. The school has an enrollment of just over 200 students. According to the US Census Bureau, ten-percent of Montrose's workforce is employed at the school.

Built Environment

There is one primary state highway that serves Montrose. South Dakota Highway 38 passes through the southwest corner of the city. Montrose is approximately three miles from an Interstate 90 interchange.

The City's water provider is Kingbrook Rural Water. Montrose is replacing its existing water standpipe with a 75,000-gallon glass-lined bolted steel ground storage reservoir. The City has its own wastewater treatment system.

Montrose has a volunteer fire department. There are no health care facilities within Montrose.

Montrose has a small commercial, or downtown, district, along Main Street. This area is anchored by the city's park along the East Fork Vermillion River and spreads for a few blocks. City Hall is located in this area.

Montrose has a city-owned day care center. The facility is licensed for up to 20 children. There are also home day care providers that provide care for youngsters.

Natural Environment

Montrose covers less than one-half square mile of land. The East Fork Vermillion River defines the eastern edge of the city.

Population density in the non-rural areas has an impact on housing, a community's infrastructure, access to resources, and public safety. Population density may also have an effect on the impact of hazard mitigation activities and the cost-benefit relationship of mitigation activities. In Montrose

Area in Square Miles	0.41
Water Area in Square Miles	0.00
Land Area in Square Miles	0.41
Population Density per Square Mile of Land Area	1,146.2

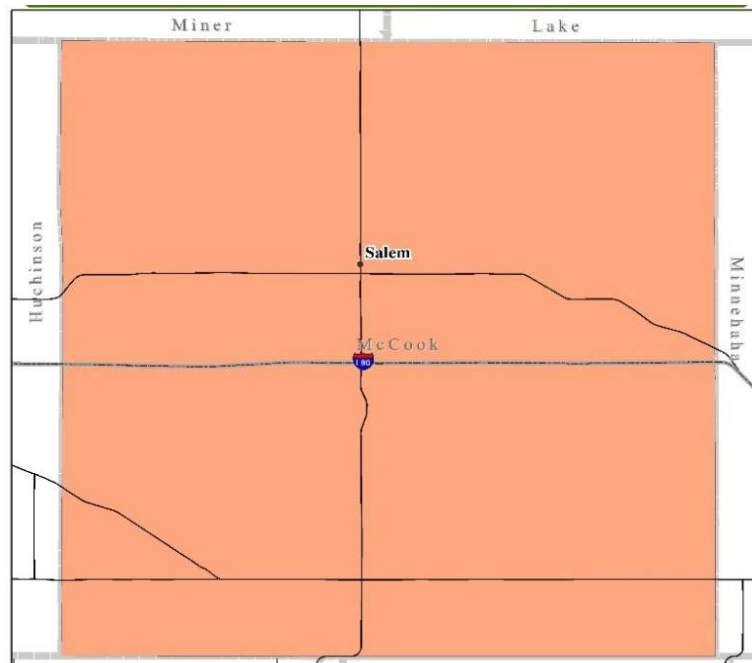
Source: US Census

Salem

People

Salem is located in the middle of the county. Salem is the McCook County Seat. According to the 2013-2017 American Community Survey, Salem's population was 1,394 residents. This is an increase from the 1,347 residents counted during the 2010 US Census and an increase from the 1,371 residents in 2000. There are 667 housing units in Salem with an owner-occupied housing rate of 73.4 percent.

Median household income in Salem was an estimated \$74,013 according to the 2013-2017 American Community Survey 5-year estimates. The median household income in Salem is greater than the \$60,808 median household income of McCook County. This trend continues with the number of residents living in poverty. The estimated 8.0 percent of residents living in poverty is slightly lower than the 9.3 percent rate of McCook County.



Economy

Salem is an economically vibrant community. The retail sector comprises 18.7 percent of the economic base of the community followed by healthcare at 16.7 percent. Agriculture-related businesses also factor into the local economy. As the County Seat, Salem sees a lot of traffic during the work week. The retail and service sectors flourish as county residents visit the courthouse to conduct business. Restaurants and stores cater to the government employees that frequent the downtown area.

Salem's economy is diverse. There are real estate offices, attorneys, small machine shops, welding and repair services, veterinarians, health care providers, gas stations and convenience stores, and county offices. Due to its diversity, should one sector struggle, the impact to the city as a whole would be less significant.

Built Environment

There are two primary highways that serve Salem. US Route 81 is a north-south highway that extends for 1,220 miles in the central United States. US Route 81 bisects Salem as it travels from Fort Worth, Texas to the Canadian border. South Dakota Highway 38 skirts the southern edge of Salem as the stretch of roadway passes from Mitchell, South Dakota east to Sioux Falls, South Dakota. Salem is approximately three miles from Interstate 90.

Salem pulls water from two wells located near its existing water treatment plant. The south well was installed in 1995 and the north well was installed in 2000. Two high service pumps are used to pump water to a 200,000-gallon elevated water storage reservoir. The City's wastewater treatment ponds are located just west of the city.

Fire protection services are provided by the Salem Volunteer Fire Department. McCook County Emergency Medical provides ambulance services to residents of Salem and the surrounding area.

Salem is home to several medical facilities, including those that provide specialized services. Daily office hours are available at the Avera Medical Group offices. Avera delivers primary care health services at this facility. Family eye care, dentistry, and chiropractic services are all available in Salem. The Salem Care and Rehabilitation Center is a 47-bed retirement and assisted living facility. Leisure Living Apartments is another retirement and assisted living facility in Salem.

Students in Salem have two options for pre-secondary education. McCook Central Schools provide public education for grades K-12. The recently renovated building on the edge of downtown Salem has an enrollment of approximately 400 students. St. Mary's Catholic Elementary School in Salem provides education in a private school setting to children in grades K-8.

Salem has a vibrant downtown district along Main Street. This area is anchored by the McCook County Courthouse and has a wide array of shops, professional offices, and cafes. The downtown area has recently experienced infrastructure upgrades that include a walkable environment between the public school and courthouse at one end to one of the city parks several blocks to the south. City Hall and McCook County offices are located in this area.

Salem is home to several day care centers and home day care providers.

Natural Environment

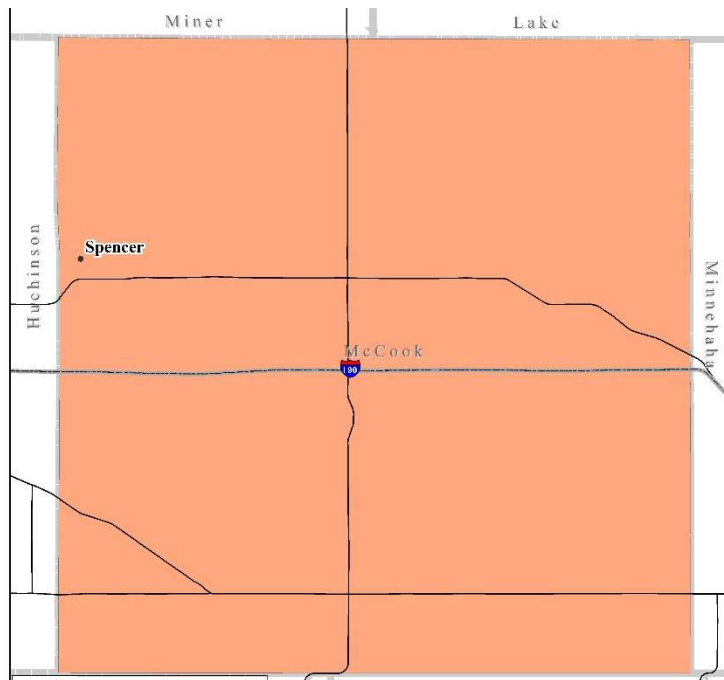
Salem covers approximately 1.24 square miles of land and has no water area. Salem is part of the James River Lowland which is characterized by a gently undulating landscape. The area is drained by the West Fork of the Vermillion River.

Population density in the non-rural areas has an impact on housing, a community’s infrastructure, access to resources, and public safety. Population density may also have an effect on the impact of hazard mitigation activities and the cost-benefit relationship of mitigation activities. In Salem –

Area in Square Miles	1.24
Water Area in Square Miles	0.00
Land Area in Square Miles	1.24
Population Density per Square Mile of Land Area	1,084.3

Source: US Census

Spencer



People

Spencer is located at the western edge of the county. According to the 2013-2017 American Community Survey, Spencer’s population was 140 residents. This is a decrease from the 154 residents counted during the 2010 US Census and an even greater drop from the 157 residents in 2000. There are 77 housing units in Spencer with an owner-occupied housing rate of 86.7 percent.

Median household income in Spencer was an estimated \$45,500 according to the 2013-2017

American Community Survey 5-year estimates. The median household income in Spencer is less than the median household income of McCook County. This trend continues with the number of residents living in poverty. The estimated 17.1 percent of residents living in poverty is significantly higher than the 9.3 percent rate of McCook County.

Economy

Spencer experienced a deadly and destructive tornado in May 1998. The tornado devastated the buildings in the community, damaging most beyond repair. Since that time, Spencer is considered a commuter town. There are few businesses aside from a bank and the post office. Most Spencer residents travel to nearby communities to work.

Built Environment

Spencer is located off South Dakota Highway 38. Access from SD Highway 38 is by McCook County roads. Spencer is approximately four miles from Interstate 90.

Spencer provides water and wastewater services to its residents. Fire protection is provided by the Spencer Volunteer Fire Department.

There are no health care providers in Spencer. Most residents travel the eleven miles to Salem or make the 30-minute trip to Mitchell.

Spencer does not have a downtown district.

Natural Environment

Spencer covers approximately 0.27 square miles of land and has no water area. The topography of Spencer is characterized by a gently rolling hills.

The City has a community park with a picnic shelter and a playground.

Population density in the non-rural areas has an impact on housing, a community's infrastructure, access to resources, and public safety. Population density may also have an effect on the impact of hazard mitigation activities and the cost-benefit relationship of mitigation activities. In Bridgewater –

Area in Square Miles	0.27
Water Area in Square Miles	0.00
Land Area in Square Miles	0.27
Population Density per Square Mile of Land Area	1,084.3

Source: US Census

HAZARD PROFILES

The McCook County Pre-Disaster Mitigation Plan Update establishes a framework for identifying mitigation goals and prioritizing actions to help make the residents of McCook County more disaster resilient and safe. The Team reviewed a variety of potential hazards and assessed their potential impacts on the area. The list of potential hazards was narrowed to focus on hazards that have the most significant impact on the area and hazards where potential pre-disaster mitigation activities would result in the most substantial benefit. As part of this assessment, data was compiled, and maps were produced to help analyze the potential impacts of various hazards.

In particular, the following hazards were discussed by the Mitigation Planning Team as potential hazards to address in the McCook County Pre-Disaster Mitigation Plan Update 2019:

Agricultural Pests and Diseases	Drought	Floods
Summer Storm (Hail, Lightening)	Winter Storm	Wildfire
Tornado	Windstorm	Hazardous Materials
Geological Hazards		

The Mitigation Planning Team decided to focus on natural hazards in the McCook County Pre-Disaster Mitigation Plan Update. The Team felt that disaster mitigation projects would be most effective in addressing and mitigating against the impact of natural hazards prevalent in the area. Hazardous Materials threats are addressed in McCook County's Hazardous Materials Plan.

Probability

The likelihood of a hazard occurring in the future.

Vulnerability

A measure of the extent to which a community, structure, or geographical area is likely to be damaged or disrupted, on account of its nature or location, by the impact of a particular disaster hazard.

The following table illustrates the Team’s analysis of the area’s vulnerability to identified hazards and the probability of occurrence.

		Vulnerability		
		Low	Medium	High
Probability of Occurrence	Low	Wildfire Geological Hazards		
	Medium	Hazardous Materials	Ag Pests & Diseases	Tornado
	High	Summer Storms	Winter Storms Floods Wind Drought	

Agricultural Pests and Diseases were considered a hazard in McCook County. Because agriculture is a large component of rural McCook County’s economy, should a naturally occurring infection of crops or livestock render the crops or livestock unfit for consumption, sale, or other use, the impact would be significant. According to the 2012 Census of Agriculture, there were 568 farms in McCook County with a market value of \$156,965,000 of product sold. In McCook County, 62 percent of the market value was attributed to crop sales with 38 percent attributed to livestock sales.

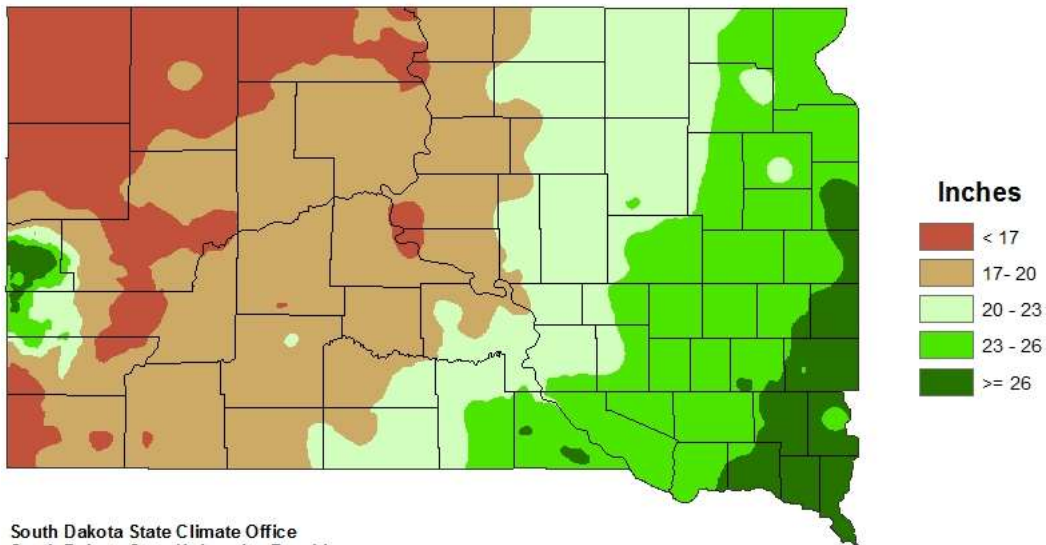
A small number of losses due to disease and pests are normal and expected. The hazard arises when the level of infestation or transmission escalates and overwhelms normal control methods. Loss of crops, death of livestock or transmission to humans is a concern. For Hazard Mitigation Planning purposes, agricultural pests and diseases are those that impact the population of domesticated livestock or crops, which in turn damage the economic return on the agricultural assets. The potential for this hazard is exacerbated by such factors as heavy rains or drought, feeding practices, cross contamination or exposure, or inadequate infection control measures. The primary concerns among the Planning Team members were the potential for West Nile Virus and Emerald Ash Borer infestations.

According to the Center for Disease Control, there were 73 reported cases of West Nile Virus in South Dakota in 2017 with four deaths reported. This number is down significantly from the 152 cases reported the previous year. Based on reported cases from 2013 through 2017, there are

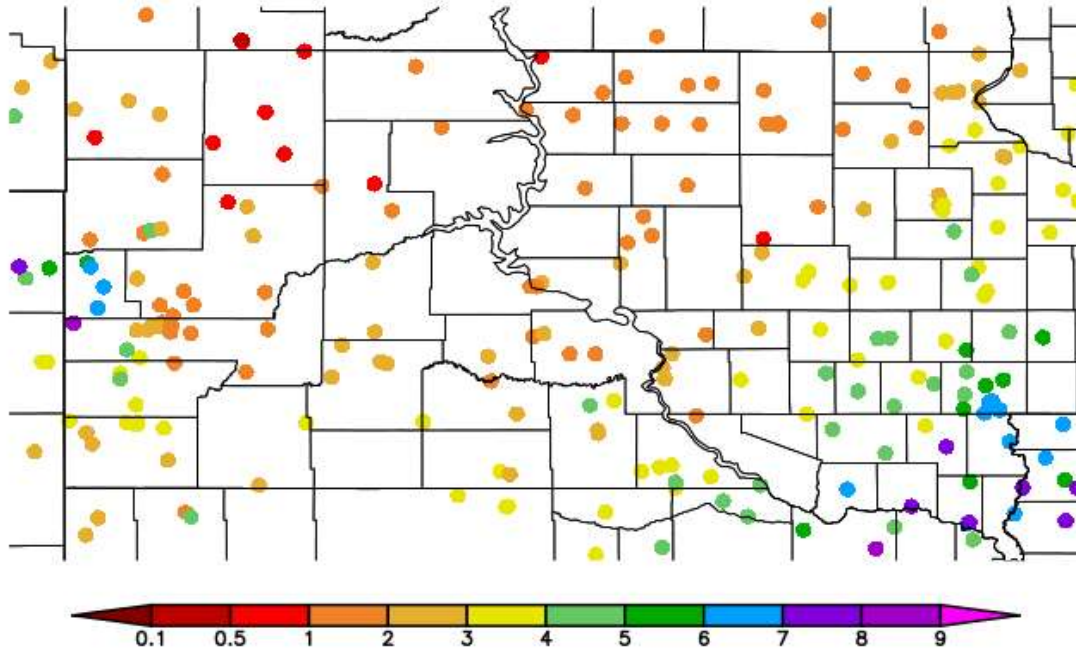
on average 94 cases reported each year. West Nile Virus is most commonly spread through the bite of an infected mosquito.

Drought is considered a minor hazard in McCook County. Several droughts have been recorded in the area over the past 60 years; however, McCook County has not been subject to a Presidential Declaration related to drought. The most recent prolonged period of drought, according to the National Center for Environmental Information Storm Events Database, was the winter of 2012-2013. In spite of normal to above normal precipitation, the excess over normal was not enough to relieve dry conditions. Aside from the effects on winter wheat and available winter livestock feed, hunting was hampered due to reduced pheasant population and disease in the deer population. While this hazard has the potential to impact the agricultural economy and local economies reliant on the agricultural sector, the Team decided that occurrence data in McCook County did not warrant inclusion in the Plan. As depicted in the map below, rainfall totals in Southeastern South Dakota average higher than the rest of the state. Western South Dakota has been severely impacted by drought conditions. McCook County has largely been spared.

Normal Annual Precipitation (1981-2010)



Precipitation (in) 10/1/2017 – 2/18/2018

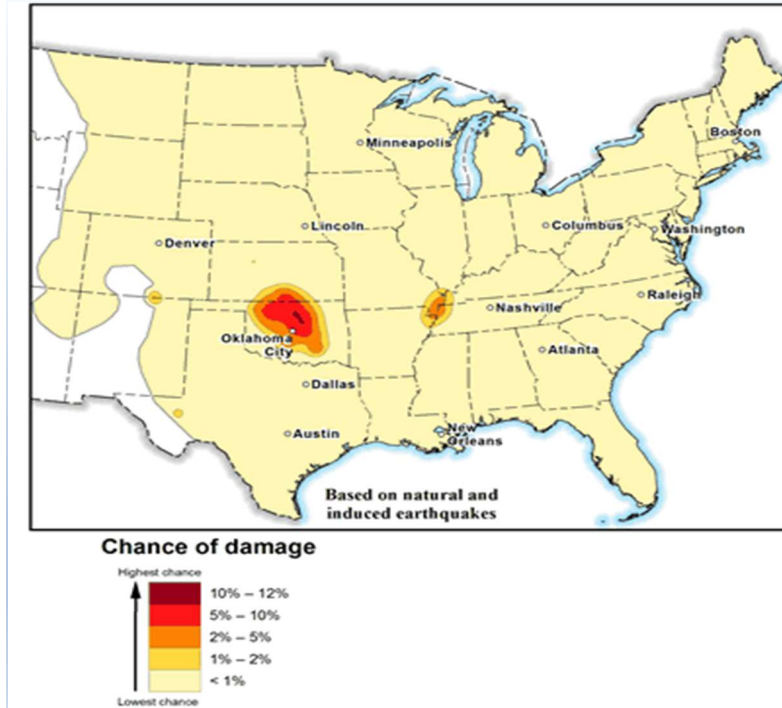


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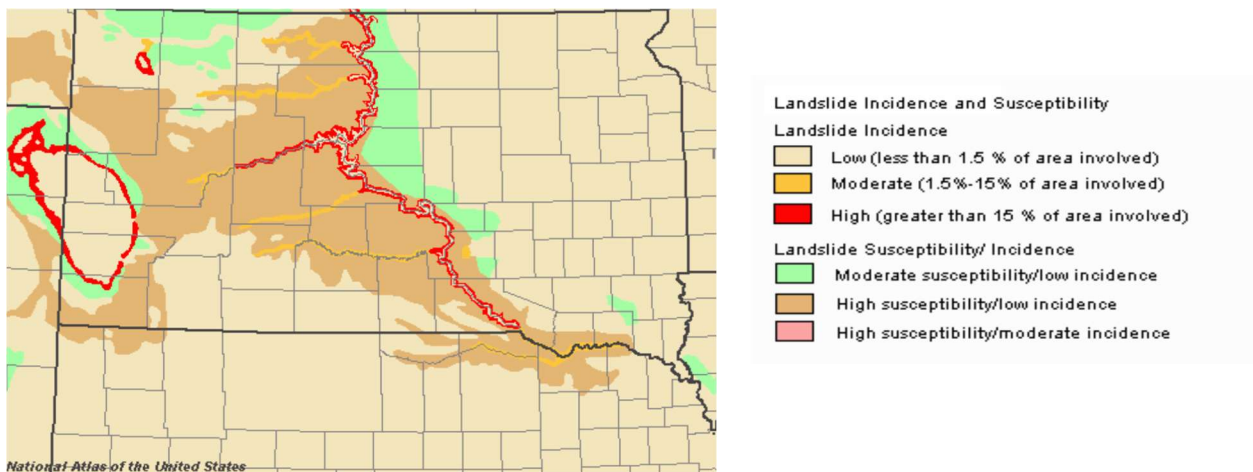
NOAA Regional Climate Centers

The other primary impact of drought conditions is lower water levels. While this is a potential threat to the area, jurisdictions may implement policies that mitigate against the impacts of this threat, including restrictive water usage policies during drought and non-drought periods. These restrictions relate primarily to limits on lawn watering and other heavy uses of water.

Earthquakes were also excluded as an imminent hazard even though this hazard is included in the State's Multi-Hazard Pre-Disaster Mitigation Plan. As illustrated below, the vulnerability of McCook County to earthquakes is considered minimal. According to the State's Plan, no major earthquakes have been reported in South Dakota since 1967, and South Dakota is geologically stable. The U.S. Geological Survey estimates only a ten-percent chance of an earthquake exceeding a 5.1 magnitude occurring in any one 50-year period. Minor earthquakes that have been observed in the state have resulted in very limited damage such as displaced foundations, stuck doors and windows, etc.



The Mitigation Planning Team considered other types of geological hazards including **landslides**. However, after further consideration, these hazards were identified as having a low probability of occurrence and low vulnerability factor. While landslides and land subsidence are discussed in the State of South Dakota's Plan, McCook County's level topography, and based on the United States Geological Survey's Landslide Incidence and Susceptibility Map, the area's vulnerability to landslides is low. As a result of these assessments, both of these hazards were rated low in consideration by the Team.



After reviewing a broad list of hazards and excluding those hazards where the area has limited or no vulnerability, 4 hazards rose to the top of the list in terms of high probability and high vulnerability.

Hazards such as hail, excess precipitation, lightning, freezing, and extreme cold were all considered as hazards, but are incorporated under the broader headings of either severe summer storms or severe winter storms.

Severe Summer Storms

Severe Winter Storms

Tornadoes

Floods

Each of the hazards selected by the mitigation planning team for the Plan's focus is described in terms of the hazard's *location* within McCook County, the *extent* of the hazard, the *history* of the hazard's occurrence in the region, and the *probability* of future events.

Location is the geographic area within McCook County that is affected by the hazard. All four of the focus hazards occur throughout the county with similar degrees of frequency. In the case of flooding, some areas are more susceptible than others.

Extent is the strength or magnitude of the hazard. It is measured in different ways. For example, tornado strength is measured on the Fujita Scale, wind is measured by speed, flooding is measured by duration.

A *history* of each hazard's occurrence in McCook County is provided, including major events that proved impactful on the region.

Probability of occurrence is the likelihood that a disaster event will take place within a defined period. For purposes of this analysis, the probability of a hazard is considered "high" if it were to occur 5 times in a ten-year period., "medium" if it were to occur one to two times in a ten-year period, and "low" if it were likely to occur less than one time in a ten-year period.

Severe Summer Storms



Bridgewater

Description

Severe Summer Storms, as defined for purposes of this report, include all storms occurring during spring, summer, and fall with damages that may result from excess rain or thunderstorms, lightning, and hail. The impact of tornadoes and high winds, which usually occur in conjunction with summer storms or winter storms (high winds), are considered separately. According to the National Severe Storms Laboratory, a storm is considered “severe” when it contains one or more of the following: hail one-inch or greater, winds gusting in excess of 57.5 miles per hour, or a tornado.

Location

Severe Summer Storms are typically associated with unstable weather conditions and are not geographically predictable. All portions of McCook County are equally susceptible to these types of events, although the type and amount of damages will vary depending on the location. For example, hail can result in significant agricultural damage in the rural parts of the counties, while it may result in property damage to cars and buildings in the urban areas.

Extent

Rainstorms are most common in the early summer months with hailstorm frequency increasing in midsummer. Appendix B shows the summer storms that produced high winds and hail.

History

Appendix B lists historical records of severe summer storms that occurred from January 2013 through 2018.

There are several occurrences to note:

Hail, nearly two-inches in diameter, rained upon the Town of Spencer in August 2015. Widespread severe storms spread through the area during the afternoon and evening of August 9. The large hail caused an unknown amount of damage to vehicles. The hail was accompanied by estimated 45 miles per hour wind gusts.

A band of thunderstorms developed near the Missouri River on May 25, 2016. This storm produced large hail and damaging winds toward the west. As it traveled east near Salem, there was a lightning strike that killed 21 head of cattle gathered at a metal feeder.

A storm chaser observed a storm in September 2017 that caused localized damage to trees and homes. The high winds, centered in Salem, had wind speeds in excess of 61 knots.

Probability

The probability of severe summer storms occurring in any given year is high. According to the National Center for Environmental Information Storm Events Database, 18 summer storm and storm-related events occurred between January 2013 and December 2018. Thus, severe summer storms have a “high” probability of occurrence. These events are detailed in Appendix B.

Severe Winter Storms



Description

Severe Winter Storms, as defined for purposes of this report, are a combination of heavy snow, blowing snow, and/or dangerous wind chills. Blizzards are severe winter storms that are a combination of blowing snow and wind that result in very low visibility. The combination of snow and wind can cause drifting on roadways. These storms tend to occur in the late fall, winter, and early spring seasons.

Location

Similar to severe summer storms, severe winter storms are typically associated with unstable weather conditions and are not geographically predictable. All areas within McCook County are equally susceptible to the impacts of these events, including hazardous driving conditions, loss of life or injury for individuals without proper shelter, damage to agricultural crops, and budgetary issues for local governments to clear snow from roadways.

Extent

Compared with other hazards discussed in this Plan, winter storms are far more likely to result in the loss of life or injuries. Since one of the primary impacts of winter storms is hazardous driving conditions, it is likely that most of the deaths and injuries resulting from winter storms were a result of traffic accidents on icy or snow-covered roadways or poor driving conditions resulting from blowing snow. Appendix B shows the extent of severe winter storms in McCook County.

History

Appendix B lists historical records of severe winter storms that occurred from January 2013 through December 2018.

There are several occurrences to note:

Heavy precipitation with rapid cooling produced a combination of freezing rain, sleet, and snow from the early morning hours of April 9, 2013, to the morning of April 11th. Moderate to heavy ice accumulations were reported followed by moderate to heavy snow and sleet accumulations. The ice accumulations, greater than a half inch in some areas, caused major tree and power line damage in the ice storm area. There were numerous reports of fallen limbs and branches, trees were destroyed, roads were blocked, and some vehicles and homes suffered damages. There were also power outages because of the power line and power pole damage. Strong winds contributed to the tree and power line damage. Travel was difficult due to the snow and sleet accumulations and road blockages from downed trees and power lines.

February 2 and 3, 2016 ushered in a blizzard to McCook County. Accumulating snow combined with north to northwest winds 20 to 35 miles per hour, with gusts above 40 miles per hour, to produce near zero visibility in falling and blowing snow. Accumulations varied from around an inch of snow near the western edge of McCook County to five inches east of Canistota. Travel was brought to a halt and a few vehicles slid off roads due to the combination of snowy roads and low visibility. Schools were closed throughout the county.

Life threatening conditions developed in McCook County during an intense storm that passed through the area on April 14, 2018. The storm began with a mix of rain, sleet, and snow and changed to all snow. Brutal winds gusted as high as 67 miles per hour and reduced visibility to to less than a quarter mile at times. State offices, schools, and many businesses were closed over the course of the two-day storm. Travel was not recommended and was nearly impossible. Interstate 90 was closed for two days. Snow totals measured 12 inches at Bridgewater and 10 inches in Montrose.

Probability

The probability of Severe Winter Storms occurring in any given year is high. According to the National Center for Environmental Information Storm Events Database, 60 winter storm and storm-related events occurred between January 2013 and December 2018. Thus, severe winter storms have a “high” probability of occurrence. These events caused just over \$10 million in damages. These events are detailed in Appendix B.

Tornadoes



Spencer

Description

Similar to the other natural hazards identified in this Plan, tornadoes and high winds have the potential to significantly impact the region. A tornado is a rotating column of air that extends from the base of a thunderstorm to the ground. A funnel cloud is a rotating column of air that does not reach the ground. The funnel cloud's violently rotating column of air may reach the ground rather quickly, becoming a tornado. A tornado may happen any time of year, although they are most commonly associated with severe summer storms. A derecho is a wide-spread, long-lived, straight-line wind storm that is usually associated with thunderstorms. Destruction caused by a derecho mimics that of a tornado.

Location

Similar to severe summer and winter storms, tornadoes and high wind events are associated with unstable weather patterns and are geographically unpredictable. As a result, all areas within the region are equally susceptible to the potential of tornadoes and high wind events.

Extent

The most common way to determine the strength of a tornado is to look at the damage it caused. From the damage, wind speeds can be estimated. An Enhanced Fujita Scale was implemented by the National Weather Service in 2007 to rate tornadoes in a more consistent and accurate manner. The EF-Scale considers more variables than the original Fujita Scale when assigning a wind speed rating to a tornado. These variables include 28 damage indicators such as building type, structures, and trees. For each damage indicator, there are 8 degrees of damage ranging from the beginning of visible damage to complete destruction of the damage indicator.

Appendix B shows the extent of tornadoes and funnel clouds in McCook County.

History

Appendix B lists historical records of tornadoes and funnel clouds that occurred from January 2013 through December 2018.

There is an occurrence from the recent past that is important to note:

A tornado that was classified as an F4 on the Fujita Rating Scale hit the town of Spencer in McCook County on May 30, 1998. Twenty years have passed since the deadly storm hit the town of Spencer, but the memory lingers when the spring tornado awareness season rolls around. Damages was estimated at \$18 million and nearly all structures were damaged or destroyed beyond repair resulting in the most destructive tornado in South Dakota records. Unfortunately, the tornado was deadly as there were six fatalities resulting from this destructive tornado.

Probability

The probability of Tornadoes and High Wind occurring in any given year is medium but comes with a high vulnerability factor. According to the National Center for Environmental Information Storm Events Database, two funnel clouds formed between 2013 and 2018. These events

occurred during the late spring and summer months of May through September. The funnel clouds did not cause recordable damage. These events are detailed in Appendix B.

Flood



Spring flooding – Montrose 2019

Description

Flooding and excess precipitation can significantly impact local communities, residents, and the economy in general. Unlike the other hazards discussed in this Plan, flooding is more

geographically predictable. While flooding, particularly flash flooding, can potentially occur anywhere during periods of excess precipitation, predictive modeling is done to determine areas that are most at risk for flooding, by designating those areas as flood hazard areas.

In South Dakota, flooding is typically a result of runoff from excess rainfall during the spring, summer, and fall seasons; or runoff from melting snow during the spring. Flooding can occur as a result of localized precipitation or due to excess precipitation occurring outside the region which results in elevated river levels flowing downstream from those areas.

There are generally 4 types of flooding affecting the region:

Flash Flooding results when several inches of rain and precipitation occur within a short period of time. This type of excess precipitation generally occurs as part of a severe summer storm and may be compounded by other hazards such as high winds, hail, and tornadoes.

Long-Range Flooding occurs when there is a significant amount of precipitation or rainfall over an extended period. Often, the intensity of the rainfall is low, but cumulatively that amount of precipitation is larger and exceeds the capacity of the ground to absorb the precipitation. The ground becomes “water logged” and the rainfall can no longer infiltrate. Water that is unable to infiltrate runs off into low lying areas, can enter homes and commercial facilities through windows and doors, and results in devastating impacts for property owners. Stagnant water that cannot infiltrate the ground can also lead to health issues and a higher incidence of mosquitoes. Excess moisture in the ground can seep into basements of homes and businesses, creating additional damage. Water seepage can exceed the capacity of sump pumps and storm sewer systems to transfer the water out of homes, businesses, and developed areas in general.

Flooding as a result of Snow Melt typically occurs in the spring and has characteristics similar to flash floods and long-range floods. The impacted area is typically larger than that of flash floods, but smaller than long-rain floods. Generally, flooding can last for several days to several weeks. The flooding is compounded if the ground is frozen, resulting in more runoff of precipitation to the lower lying areas and streams/rivers. Recently, flooding from snow melt has become a major challenge for the region due to the large amounts of snow received locally and in surrounding areas.

Dam or Levee Failure could result in could result in flooding and economic loss if physical damage were to occur to the structure. The National Inventory of Dams (NID) consists of dams that meet one of the following criteria:

- High Hazard – loss of human life is likely if the dams fails;
- Significant Hazard – possible loss of human life and likely significant property or environmental destruction;
- Equal to or exceed 25 feet in height and exceed 15 acre-feet in storage, and/or;
- Equal to or exceed 50 acre-feet storage and exceed six feet in height.

According to the NID, there are seven total dams in McCook County with an average age of 29 years. All of the dams are regulated by the State of South Dakota and one of the dams are regulated by the federal government. The seven dams are earthen and have a low hazard potential.

DAM NAME	RIVER	OWNER NAME	NID HEIGHT	NID STORAGE	PURPOSE
East Vermillion Dam	E Fork Vermillion River	State of South Dakota	41 feet	17,400 acre-feet	Flood Control
Schaffer Dam	Tr Vermillion River	Private	30 feet	58 acre-feet	Fish/Wildlife Pond
Katzer Dam	Vermillion	Private	27 feet	18 acre-feet	Recreation
McCook Country Club Dam	Trib. West Fork Vermillion	McCook Country Club	15 feet	80 acre-feet	Irrigation
Cooper Dam	Tr. W Fork Vermillion River	Private	21 feet	60 acre-feet	Fish/Wildlife Pond
Ortman Dam	Tr. W Fork Vermillion River	Private	22 feet	145 acre-feet	Fish/Wildlife Pond
Bauer Dam	Trib. James River	Private	32 feet	300 acre-feet	Irrigation

Source: Army Corps of Engineers National Dam Inventory

Location

Flash flooding usually occurs in a smaller geographic area and results in excessive runoff which can exceed the capacity of the community's storm sewer system. This type of flooding is less predictable geographically. Development resulting in an increase of parking areas and rooftops, can have a significant impact on the increased probability of flash floods by reducing permeability and putting an additional strain on storm sewer systems.

Long-range flooding typically occurs over a widespread geographic area due to the extended period in which the precipitation occurs. Salem and Montrose are within the Vermillion River Watershed, which starts at the overflow from Lake Whitewood in Kingsbury County to the north and extends to the mouth of the Missouri River south of Vermillion, South Dakota.

Extent

Changes in land use associated with development throughout the area affect flooding in many



ways. Removing vegetation and soil, grading the land surface, and constructing drainage networks increase runoff to streams from rainfall and snowmelt. As a result, the peak discharge, volume, and frequency of floods increase in nearby streams. Changes to stream channels during development can limit their capacity to convey floodwaters. Flooding along the Vermillion River occurs almost annually.

History

Based on information in the National Climatic Data Center's Storm Events Database, there were 14 incidents of flooding in McCook County during the 20-year period from 1998 to 2018. Physical damage from flooding in the county over the 20-year period, resulted in approximately \$150,000 in property damage. The events include four flash floods and ten flood occurrences

Persistent heavy rain contributed to flooding of fields and other lowland in mid-June 2014. Roads, homes and businesses were also affected by the flooding and sustained \$100,000 in damage over the two-day rain event, and subsequent flooding. Many roads were damaged or washed out.

Flooding impacted the cities of Salem and Montrose during a major flood event in July 2010. According to the National Centers for Environmental Information, heavy rain caused major flooding of the East Fork and West Fork Vermilion Rivers and the Little Vermillion River. Fields, lowlands, roads and parks were flooded. The most extensive flooding during this event occurred in and near Montrose. Roads basements, ball parks, the campground, and other low-lying areas were subject to damaging flooding. The lift station in Montrose was threatened but remained operational. Damage from this event was approximately \$50,000.

Probability

The probability of spring floods and flash flooding occurring in any given year is high. The flooding events, many times, occurred in conjunction with severe summer storms. Where the occurrence of storms was more common, damage resulting from flooding was more significant per event. The goal of mitigation actions should be to reduce the amount of loss of property and crops.

National Flood Insurance Program

The National Flood Insurance Program (NFIP) aims to reduce the impact of flooding on private and public structures. It does so by providing affordable insurance to property owners and by encouraging communities to adopt and enforce floodplain management regulations. These efforts help mitigate the effects of flooding on new and improved structures. Through the NFIP, flood insurance is made available to those communities that agree to regulate development in their mapped floodplains. If the community ensures that future floodplain development meets certain criteria, the Federal Emergency Management Agency (FEMA) will provide flood insurance for properties in the community.

There are three components of the NFIP: mapping, insurance, and regulations.

Mapping: FEMA has prepared floodplain maps for most areas of the Country. The maps are used for several purposes. Communities use them as the basis for construction management in flood prone areas, insurance agents use floodplain maps when rating flood insurance policies, and the maps are used by lenders to determine when flood insurance must be purchased by a borrower. Most communities have a Flood Insurance Rate Map (FIRM). FIRMs are based on a Flood Insurance Study and include information such as flood elevations to better protect new construction from flood damage. Flood Zones for the communities and rural areas in McCook County are found in Appendix C.

Insurance: Buildings in a participating community may be covered by a flood insurance policy, even if a particular structure is not located in a mapped floodplain. Coverage includes lake, river, stream, and other inland water overflows, and the unusual or rapid accumulation of runoff of surface waters as found in flash flooding.

Regulations: Communities have responsibilities to participate in NFIP. These include:

- *Adopt and enforce a flood damage prevention ordinance*
- *Require permits for all types of development in the floodplain*
- *Assure that building sites are reasonably safe from flooding*
- *Estimate flood elevations where not determined by FEMA*
- *Require new or substantially improved homes and manufactured homes to be elevated above the Base Flood Elevation*
- *Require non-residential buildings to be elevated or flood-proofed*
- *Determine if damaged buildings are substantially damaged*
- *Conduct field inspections and city violations*
- *Require Elevation Certificates to document compliance*
- *Carefully consider requests for variances*
- *Resolve non-compliance and violations*
- *Advise FEMA when updates to flood maps are needed.*

The South Dakota Office of Emergency Management administers the NFIP for South Dakota under a cooperative agreement with FEMA.

The following chart depicts community participation in the National Flood Insurance Program.

COMMUNITY	INITIAL FHBM*	INITIAL FIRM*	CURRENT EFFECTIVE MAP DATE
Bridgewater	11/19/78	6/18/13	(NSFHA)
Canistota	8/13/76	6/18/13	(NSFHA)
McCook County		6/18/13	6/18/13
Montrose	12/13/74	8/5/86	6/18/13
Salem	8/13/76	5/1/86	6/18/13(M)
Spencer	11/12/76	6/18/13	NSFHA

Federal Emergency Management Agency

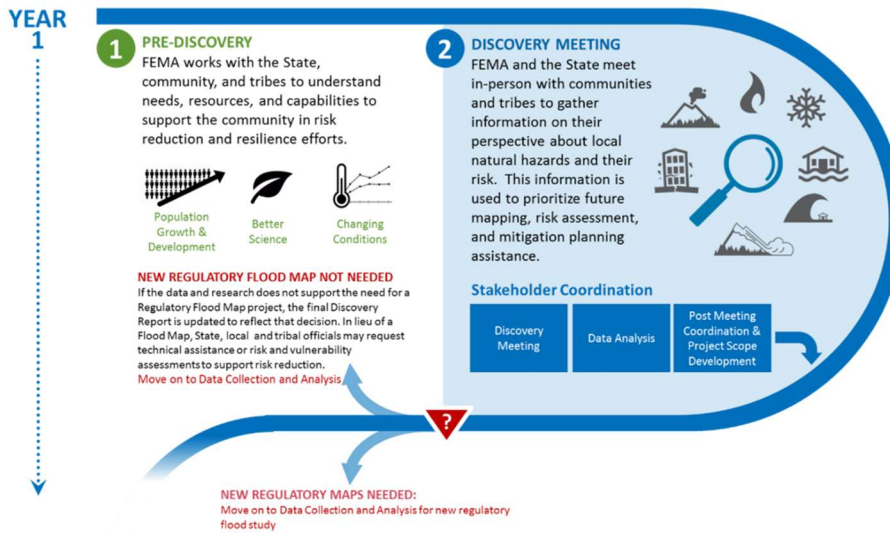
*FHBM: Flood Hazard Boundary Map

*FIRM: Flood Insurance Rate Map

M – No Elevation Determined – All zone A, C and X

NSFHA – No Special Flood Hazard Area – All Zone C

Discovery Report



Officials from McCook County, the City of Salem, and the City of Bridgewater participated in the Discovery planning process, which identified areas of concern and helped to establish the communities' highest priorities regarding natural hazards. The Discovery process was a large-scale effort, not limited to McCook

County, conducted to assess areas in the state with outdated maps.

During Discovery, FEMA and the State of South Dakota reached out to local communities with the following goals:

- Identify opportunities to support mitigation action through technical assistance, guidance, and grants;
- Gather information about local hazards and risks;
- Document needs related to all hazards identified in the Discovery Meetings and the National Flood Insurance Program (NFIP);
 - Review current and historic mitigation plans to understand local mitigation capabilities and priorities, hazard risk assessments, and current or future mitigation activities; and
 - Involve multi-disciplinary community staff in evaluating risks and participating in the identification and mitigation of risk.

The purpose of the Discovery Report is to provide a summary of the Risk Mapping, Assessment, and Planning (Risk MAP) Discovery process and to provide a foundation for FEMA hazard mitigation projects moving forward.

According to FEMA, Discovery is the first phase of the overall Risk MAP program that provides the State of South Dakota, local communities, and Tribes with flood risk information along with tools to increase resilience to flooding and better protect people and property through collaboration with state and local entities.

The initial phase of the Risk MAP program involves a collaborative series of planning sessions where FEMA works with local partners to identify needs, resources, and capabilities to support mitigation and resiliency efforts. The information gathered during this process is compiled into a Discovery Report. The information is used to prioritize future mapping, risk assessment, and mitigation planning assistance.

Community Participation in NFIP

Bridgewater:

Bridgewater has adopted and enforces a Floodplain Management Ordinance. The Finance Officer is the city's Floodplain Administrator.

There are two Flood Insurance Rate Map (FIRM) panels that look at Bridgewater. Both panels, neither of which are available digitally, indicate the City falls into Zone X. The City is considered at minimal risk for flooding.

The City of Bridgewater was a participant in the FEMA-McCook County Discovery planning process.

Canistota:

The FIRM panel for Canistota, not available in digital format, indicate that the city is in Zone X. The City is considered at minimal risk for flooding.

Montrose:

Montrose has adopted and enforces a Floodplain Management Ordinance. The Zoning Administrator is the city's Floodplain Administrator.

The FIRM panel for Montrose indicates a significant portion of the city lies in Special Flood Hazard Areas, including a regulatory floodway.

A Letter of Map Amendment (LOMA) is an official amendment to an effective National Flood Insurance Program (NFIP) map. A LOMA establishes a property's location in relation to the Special Flood Hazard Area. A LOMA is usually issued because a property has been mapped as being in a floodplain but is on higher ground above the base flood elevation. A LOMA amended FIRM panel 4600520001C in 2011.

Salem:

Salem has adopted and enforces a Floodplain Management Ordinance. The Finance Officer is the city's Floodplain Administrator.

The FIRM panel for Salem indicates a line of Special Flood Hazard Area along the Snake Creek Tributary. The line runs north and south through the center of the City.

A LOMC is a letter that reflects an official revision or an amendment to an effective FIRM. Four property owners in Salem believed their land was inadvertently mapped in a Special Flood Hazard Area. As a result, a request was made to FEMA for a LOMC.

City of Salem officials participated in the FEMA-McCook County Discovery planning process.

The City of Salem benefitted from three FEMA-funded projects that have helped with mitigation efforts.

Disaster Number	Project Number	Project Title	Federal Share
1052	0005	Salem Drainage Diversion Project	\$654,739
1702	0005	Salem Drainage Diversion Project	\$654,739
1984	0007	Salem Drainage Diversion Project	\$1,461

Spencer:

Spencer does not have a Floodplain Management Ordinance.

The FIRM panel for Spencer, not available in digital format, indicate that the city is in Zone X. The City is considered at minimal risk for flooding.

Repetitive Losses

Periodic flooding affects numerous areas in both incorporated and unincorporated areas of McCook County. Property adjacent to the Vermillion River and its tributaries are most prone to flooding. Residential development occurred in these areas long before the initial flood hazard boundaries being identified in 1974. As a result, numerous structures already existed at the time of adoption of the first map and continue to be lived in today. Many structures located within the area have experienced flooding or are required to be insured against flood due to their proximity to special flood hazard areas.

NFIP Policy Information

Jurisdiction	Policies in Force	Insurance in Force
McCook County	3	\$528,000
Montrose	7	\$1,300,700
Salem	12	\$1,432,900

Federal Emergency Management Agency (FEMA) NFIP Policy Statistics

An issue of primary concern is the number of times specific properties and structures on those properties flood. According to State of South Dakota records, one property in Montrose has suffered two losses with overall payments of \$4,431.00.

SECTION FOUR: MITIGATION STRATEGIES



Problem Statements sum up the impact of the hazard at the local level and help to identify goals and objectives. The Mitigation Planning Team developed problem statements associated with identified hazards: Severe Summer Storms, Severe Winter Storms, Tornadoes, and Flooding. The problem statements were used to identify and zero down to the hazard at a narrow level.

Severe Summer Storms Problem Statements

The Mitigation Planning Team identified several problem statements associated with severe summer storms.

- High winds and hail cause damage to people and property
- Lightning strike damage
- Clean up costs
- Downed power lines and loss of power

Severe Winter Storms Problem Statements

The Team identified several problem statements associated with severe winter storms.

- Ice accumulation on trees and powerlines lead to loss of trees, power outages, and road blockages.
- Snow removal is problematic during large snow events
- High winds cause impenetrable snow drifts and blocked roads
- High cost of snow removal
- Extreme cold uncovers heating deficiencies that may cause fires, freeze water lines, and expose a household to carbon monoxide

Tornadoes Problem Statements

The Team identified several problem statements associated with tornadoes.

- Property damage, including damage to hospitals and fire stations
- Loss of life and injury
- Loss of electricity
- Damage to infrastructure and utilities
- There is a lack of storm/tornado shelters

Flooding Problem Statements

The Team identified several problem statements relating to all types of flooding in the region.

- Infrastructure damage or failure
- Transportation is impacted
- Damage to residences and businesses
- Detrimental effect on the economy and jobs

The Team began the process of developing mitigation goals and objectives by reviewing the mitigation goals and objectives included in the draft State of South Dakota Hazard Mitigation Plan – Standard Plan (April 2014). The committee wanted to ensure that the goals and objectives identified in this updated Plan, specifically would complement the goals and objectives identified in the statewide plan, while focusing on the impact of hazards locally. The Mitigation Planning Team adopted the goals and objectives of the State of South Dakota plan.

PRE-DISASTER HAZARD MITIGATION PLAN GOALS AND OBJECTIVES

Goal 1	Reduce injuries and loss of life from hazards
Objective 1.1	Reduce the number of injuries/fatalities due to all hazards
Objective 1.2	Maintain and improve public health and safety outreach activities/programs

Goal 2	Reduce damage to existing and future structures within hazard areas
Objective 2.1	Reduce the number of repetitive loss structures
Objective 2.2	Reduce the number of structures lost by wildfires
Objective 2.3	Reduce the number of structures within the Special Flood Hazard Area and other identified local flood risk areas
Objective 2.4	Reduce the number of structures/infrastructure at risk to geologic hazards

Goal 3	Reduce the losses to critical facilities, utilities, and infrastructure from hazards
Objective 3.1	Reduce the number of power outages
Objective 3.2	Reduce negative impacts to water supply and sewage treatment systems
Objective 3.3	Improve reliability of communications during/following hazard events

Goal 4	Reduce impacts to the economy, the environment, and cultural resources from hazards
Objective 4.1	Reduce loss to natural resources (i.e. forest and watershed health)
Objective 4.2	Reduce impacts to cultural resources (i.e. historical/tribal)
Objective 4.3	Reduce agricultural losses
Objective 4.4	Reduce economic losses to recreation and tourism

Goal 5	Support and assist local/tribal mitigation capabilities and efforts
Objective 5.1	Encourage locals to participate in risk reduction measures.

State of South Dakota Hazard Mitigation Plan 2014

The Team then began the process of identifying specific mitigation projects that reflect the goals, objectives, and problem statements identified in this chapter; and that if implemented, would

mitigate the impact of future hazard events. The Team first looked at progress made since the previous update in 2013.

Mitigation Progress – 2012 Plan Projects

The 2013 McCook County Pre-Disaster Hazard Mitigation Plan identified 5 broad goals:

- 1) McCook County and its jurisdictions will develop methods to mitigate the losses due to severe weather;
- 2) McCook County and its jurisdictions will continue to participate in the National Flood Insurance Program and develop actions that will reduce the damage to county and its jurisdiction’s infrastructures due to flash and river flooding;
- 3) McCook County and its jurisdictions will seek to reduce the exposure of humans and animals to the West Nile Virus;
- 4) McCook County and its jurisdictions will seek to reduce losses from structure fires through working with private property owners, and;
- 5) McCook County and its jurisdictions will seek to identify hazardous material flow through the county.

The 2013 plan also established related mitigation actions to help meet the identified goals. Following is a summary of the accomplishments:

JURISDICTION	MITIGATION ACTION	HAZARD
County and Local	Review Mutual Aid Agreements <i>STATUS: Ongoing</i>	Multi-Hazard
County and Local	Ensure Emergency Operations Plans are current <i>STATUS: Ongoing</i>	Multi-Hazard
County and Local	Conduct Emergency Exercises to test Emergency Operation Plans <i>STATUS: Ongoing</i>	Multi-Hazard
County and Local	Develop comprehensive Mass Shelter and Care Plan for the entire County <i>STATUS: Ongoing</i>	Severe Weather

County and Local	Identify at-risk populations <i>STATUS: Ongoing</i>	Severe Weather
McCook County	Ongoing maintenance of Continuity of Operations Plan <i>STATUS: Ongoing</i>	Multi-Hazard
McCook County	Develop protocols to purchase food during sheltering events <i>STATUS: Ongoing</i>	Multi-Hazard
Southeastern Electric Cooperative	Replacement of overhead lines affected by ice, water and trees with underground lines <i>STATUS: Ongoing. Replacement and mitigation are done on a systematic basis using a comprehensive construction work plan.</i>	Winter/Ice Storms
Southeastern Electric Cooperative	Mitigation of overhead lines affected by ice, water and trees with underground lines <i>STATUS: Ongoing. Replacement and mitigation are done on a systematic basis using a comprehensive construction work plan.</i>	Winter/Ice storms
County and Local	Continue severe weather awareness programs <i>STATUS: Ongoing</i>	Multi-Hazard
County and Local	Promote the use of NOAA weather radios for all hazard events <i>STATUS: Bridgewater – Ongoing Canistota – Not Done Salem – Annually during Severe Weather Week in April Spencer – Not Done</i>	Multi-Hazard
County and Local	Continue warning and evacuation procedures <i>STATUS: Ongoing</i>	Multi-Hazard

County and Local	Public awareness on heavy snow loads on house roofs <i>STATUS: Ongoing</i>	Winter Storm
County and Local	Continue to participate in the National Flood Insurance Program <i>STATUS: Bridgewater – No Canistota – No McCook County – Yes Montrose – Yes Salem – Yes Spencer – No</i>	Flooding
County and Local	Establish drainage districts <i>STATUS: Bridgewater – No Canistota – No McCook County – Yes Montrose – No Salem – No Spencer – No</i>	Flooding
Mc Cook County	Identify roads that need to be elevated and culverts that need to be replaced <i>STATUS: Partially complete as funds become available</i>	Flooding
Salem	Snake Creek Diversion Project <i>STATUS: Complete</i>	Flooding
Salem	Storm Sewer improvements on Brown Avenue <i>STATUS: Complete</i>	Flooding
McCook County	McCook County Road 25 A-O Grade Elevation Project <i>STATUS: Complete</i>	Flooding

McCook County	Develop a listing of roads, bridges, cattle guards, culverts, and other limiting conditions and incorporate improvements into the Road and Bridge Transportation Plans <i>STATUS: Complete</i>	Wildfire
County and Local	Continued use of county and city fire bans <i>STATUS: Bridgewater – Yes Canistota – Yes McCook County – Yes Montrose – Yes Salem – Yes Spencer – Yes</i>	Wildfire
McCook County	Maintain an active West Nile Virus public education program <i>STATUS: Ongoing, seasonally</i>	Biological
Bridgewater Canistota Montrose Salem Spencer	Public cleanup of potential mosquito habitats <i>STATUS: Bridgewater – Yes Canistota – Yes McCook County – Yes Montrose – Yes Salem – Yes Spencer – Yes</i>	Biological
Bridgewater Canistota Montrose Salem Spencer	Encourage private property owners to install and maintain smoke detectors on all levels of the residence and to place detectors in all bedrooms <i>STATUS: Bridgewater – Canistota – Montrose – Salem – Spencer –</i>	Structural Fires

McCook County	Conduct a hazardous materials flow study for Highways 20 and 83, rail service	Hazardous Materials
	<i>Status:</i>	

During the third and fourth Team meetings, discussions revolved around specific mitigation projects, how to determine cost, established a timeframe for completion, resources to assist in project completion, and project prioritization. The Team also discussed the effect of the proposed mitigation projects on hazards and how each project would meet the Plan’s goals and objectives. Participants at those meetings ranked and prioritized the projects using the following:

- Overall Benefit (High, Medium, Low)
- Cost Effective (Yes, No)
- Politically Feasible (Yes, No)
- Technically Feasible (Yes, No)
- Environmentally Feasible (Yes, No)
- Revised Rating (High, Medium, Low)
- Funding Resources

A table listing the proposed mitigation actions/projects for McCook County and its communities can be found in Appendix D. The team identified some projects that are more preparedness in nature. Mitigation are those actions that minimize the amount of harm or damage to property and life. Mitigation projects could include such things as constructing safe rooms, land use zoning that prevents development in flood-prone areas or burying power lines to reduce the likelihood of power outages. Preparedness are actions that help with effective response. Preparedness activities could include preparing a fire department for response, developing a disaster response plan, and conducting disaster training.

Hazard Mitigation projects that are being submitted to the State will be reviewed for their cost effectiveness and must have a benefit cost analysis ratio of 1.0 or greater to be considered for submission. The South Eastern Council of Governments will work with McCook County and its communities to help them determine whether a project is cost effective.



SECTION 5: PLAN UPDATE, EVALUATION, AND IMPLEMENTATION

After the Plan is reviewed and accepted by the Team and the local governing bodies, the McCook County Emergency Management Director is responsible for submitting the plan to the State of South Dakota Hazard Mitigation Management Officer at the South Dakota Department of Public Safety. The State Hazard Mitigation Officer will then submit the plan to the Federal Emergency Management Agency (FEMA) for review. This review will address the criteria outlined in the FEMA Interim Final Rule 44 CFR Part 201. Upon acceptance by FEMA, McCook County and the Communities will formally adopt the plan and will be eligible for Hazard Mitigation Grant Programs and other federal mitigation grants.

In order to be an effective hazard mitigation tool, the McCook County Multi-Hazard Pre-Disaster Hazard Mitigation Plan must be updated on an annual basis or after the occurrence of a hazard event. It must also be flexible enough so that it can be used with existing planning and emergency management documents at both the city and county level. Local officials within McCook County, and its communities intend to ensure the following:

- The plan's goals and objectives address current and expected conditions
- The plan has addressed the nature, magnitude, and/or type of risks that have changed
- The current resources available are appropriate for implementing the plan
- The plan has addressed implementation issues such as technical, political, legal, or coordination issues with other agencies

- The plan has measured the outcomes that have occurred and the progress that has been made regarding meeting hazard mitigation goals and objectives

The McCook County Multi-Hazard Pre-Disaster Mitigation Plan 2019 Update is an open document that will be evaluated and updated as needed. The McCook County Management Director is responsible for ensuring the plan is maintained. The Director will work with the Team throughout the Plan's maintenance process.

Each year, the Team will assemble as a group at an annual review meeting to evaluate the overall effectiveness of the Hazard Mitigation Plan. These meetings will be open to the public and the date, time, and location will be published in newspapers with circulation throughout the county. The group will scrutinize each chapter and individually discuss hazard mitigation actions that have been undertaken to indicate what has worked and not worked for their communities. At each annual review meeting, the group shall acknowledge the occurrence of a significant event, funding availability, changes in local priorities, and technological advancements. The public will be encouraged to provide input and insight into the plan and the progress in achieving the goals set forth.

When the review meeting concludes, the group will make changes to the current mitigation strategy, goals, and objectives as needed. If no changes are proposed, it is anticipated that the Plan would not be updated until required (within 5 years). The emergency manager will be responsible for ensuring that the Plan updates are incorporated into the Plan document. Each Team member will then be tasked with reporting their findings back to their local government officials. All city council meetings are open to the public and agendas are posted in advance. It is the responsibility of each mitigation planning team member to inform the residents of their particular jurisdiction the details of the Plan updates and mitigation activities, both planned and completed.

Each year the emergency manager will be tasked with annually reporting the McCook County Multi-Hazard Pre-Disaster Mitigation Plan 2019 Update's effectiveness to its County Commission. These meetings are open to the public and agendas are posted in advance. At each annual review meeting, an update on the progress of current and ongoing hazard mitigation projects and priorities will be discussed. Each participating community represented in the Plan will be invited to send a representative to the review meeting of the County Commission. This will help ensure local jurisdiction input is a part of the annual plan review process.

To ensure the McCook County Multi-Hazard Pre-Disaster Mitigation Plan 2019 Update's usefulness, local policy makers need to be familiar with the goals and actions that are identified in this plan and incorporate these into local priorities. This can be accomplished by aligning local capital improvements with mitigation improvements during each community's annual budgeting process. This will allow local jurisdictions to better plan for future hazard mitigation projects and activities.

It is also imperative that County Officials and City Officials within McCook County, and its communities work together as a region when confronting the flooding hazard and other hazards.

SECTION 6: PLAN ADOPTION

COPY

McCook County, South Dakota
Resolution # 2019-08

A resolution of the McCook County Commission Declaring Support and Adoption of the McCook County Pre-Disaster Hazard Mitigation Plan Update dated August 2019.

WHEREAS, the McCook County Board of Commissioners supports the contents of the McCook County Pre-Disaster Hazard Mitigation Plan Update; and

WHEREAS, the McCook County Pre-Disaster Hazard Mitigation Plan Update will be utilized as a guide for planning related to FEMA Hazard Mitigation and other purposes as deemed appropriate by the McCook County Board of Commissioners.

NOW THEREFORE BE IT RESOLVED, that the McCook County Board of Commissioners hereby adopts, supports and will facilitate the McCook County Pre-Disaster Hazard Mitigation Plan Update implementation.

Adopted this 13th day of August, 2019

Charles Leary
Chairman

August 13, 2019
ATTEST:

Geraldyn Sherman
County Auditor



City of Bridgewater, South Dakota
Resolution # 19-0805

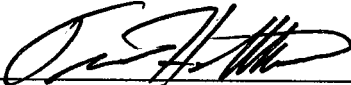
A resolution of the City of Bridgewater Declaring Support and Adoption of the McCook County Pre-Disaster Hazard Mitigation Plan Update dated August 2019.

WHEREAS, the Bridgewater City Council supports the contents of the McCook County Pre-Disaster Hazard Mitigation Plan Update; and

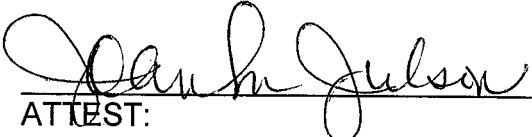
WHEREAS, the McCook County Pre-Disaster Hazard Mitigation Plan Update will be utilized as a guide for planning related to FEMA Hazard Mitigation and other purposes as deemed appropriate by the City of Bridgewater.

NOW THEREFORE BE IT RESOLVED, that the Bridgewater City Council hereby adopts, supports and will facilitate the McCook County Pre-Disaster Hazard Mitigation Plan Update implementation.

Adopted this 5th day of August, 2019



Council President



ATTEST:



City of Canistota, South Dakota
Resolution # 2019—08

A resolution of the City of Canistota Declaring Support and Adoption of the McCook County Pre-Disaster Hazard Mitigation Plan Update dated August 2019.

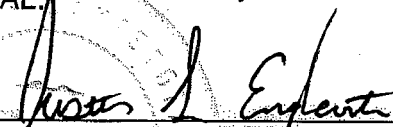
WHEREAS, the Canistota City Council supports the contents of the McCook County Pre-Disaster Hazard Mitigation Plan Update; and

WHEREAS, the McCook County Pre-Disaster Hazard Mitigation Plan Update will be utilized as a guide for planning related to FEMA Hazard Mitigation and other purposes as deemed appropriate by the City of Canistota.

NOW THEREFORE BE IT RESOLVED, that the Canistota City Council hereby adopts, supports and will facilitate the McCook County Pre-Disaster Hazard Mitigation Plan Update implementation.

Adopted this 5th day of August, 2019

SEAL:



Mayor Justin Engbarth

ATTEST:



Kathy J. Townsend, Finance Officer

**CITY OF MONTROSE
RESOLUTION 008-19**


A resolution of the City of Montrose Declaring Support and Adoption of the McCook County Pre-Disaster Hazard Mitigation Plan Update dated August 2019.

WHEREAS, the Montrose City Council supports the contents of the McCook County Pre-Disaster Hazard Mitigation Plan Update; and

WHEREAS, the McCook County Pre-Disaster Hazard Mitigation Plan Update will be utilized as a guide for planning related to FEMA Hazard Mitigation and other purposes as deemed appropriate by the City of Montrose.

NOW THEREFORE BE IT RESOLVED, that the Montrose City Council hereby adopts, supports and will facilitate the McCook County Pre-Disaster Hazard Mitigation Plan Update implementation.

Adopted this 13th day of August, 2019



Paul Klaudt, Mayor



ATTEST: Sara Smith, Finance Officer

City of Salem, South Dakota
Resolution # 2019-007

A resolution of the City of Salem Declaring Support and Adoption of the McCook County Pre-Disaster Hazard Mitigation Plan Update dated August 2019.

WHEREAS, the Salem City Commission supports the contents of the McCook County Pre-Disaster Hazard Mitigation Plan Update; and

WHEREAS, the McCook County Pre-Disaster Hazard Mitigation Plan Update will be utilized as a guide for planning related to FEMA Hazard Mitigation and other purposes as deemed appropriate by the City of Salem.

NOW THEREFORE BE IT RESOLVED, that the Salem City Commission hereby adopts, supports and will facilitate the McCook County Pre-Disaster Hazard Mitigation Plan Update implementation.

Adopted this 5th day of August 2019.



ATTEST:

Lori Heumiller
Finance Officer

Robin Westhoff
Mayor

Town of Spencer, South Dakota
Resolution #235

A resolution of the Town of Spencer Declaring Support and Adoption of the McCook County Pre-Disaster Hazard Mitigation Plan Update dated August 2019.

WHEREAS, the Spencer Town Board supports the contents of the McCook County Pre-Disaster Hazard Mitigation Plan Update; and

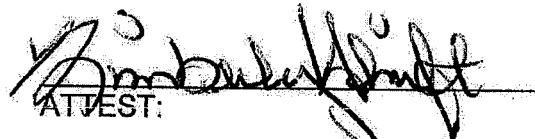
WHEREAS, the McCook County Pre-Disaster Hazard Mitigation Plan Update will be utilized as a guide for planning related to FEMA Hazard Mitigation and other purposes as deemed appropriate by the Town of Spencer.

NOW THEREFORE BE IT RESOLVED, that the Spencer Town Board hereby adopts, supports and will facilitate the McCook County Pre-Disaster Hazard Mitigation Plan Update implementation.

Adopted this 14 day of August, 2019.

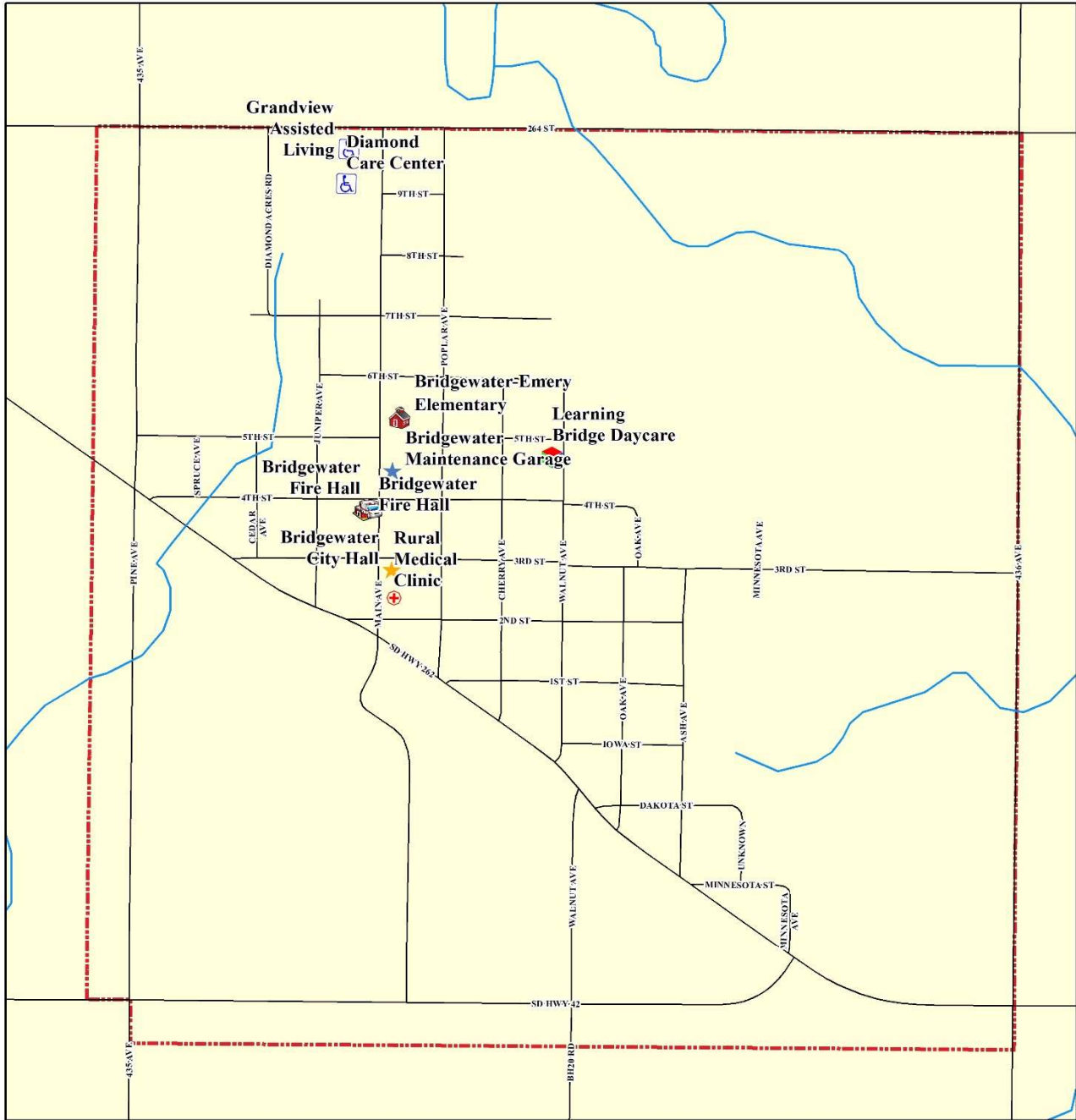


Mayor



ATTEST:

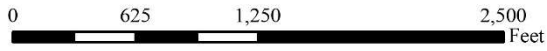
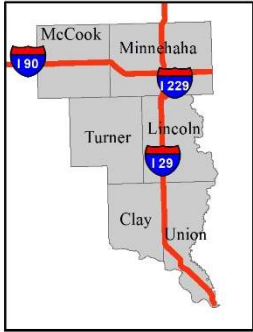
APPENDIX A: CRITICAL FACILITIES



Legend

	Ambulance		Daycare
	City Building		Fire Station
	City Hall		Nursing Home/Assisted Living
	Clinic		School

Community Critical Facilities City of Bridgewater



Map updated by
SECOG on 3/4/2019



Legend

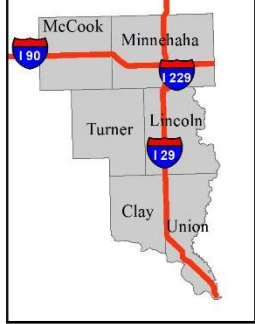
City Hall	School
Courthouse	Nursing Home/Assisted Living
Government Building	Water Tower
Clinic	Water Treatment
Ambulance	Lift Station
Daycare	Telecommunication
Fire Station	

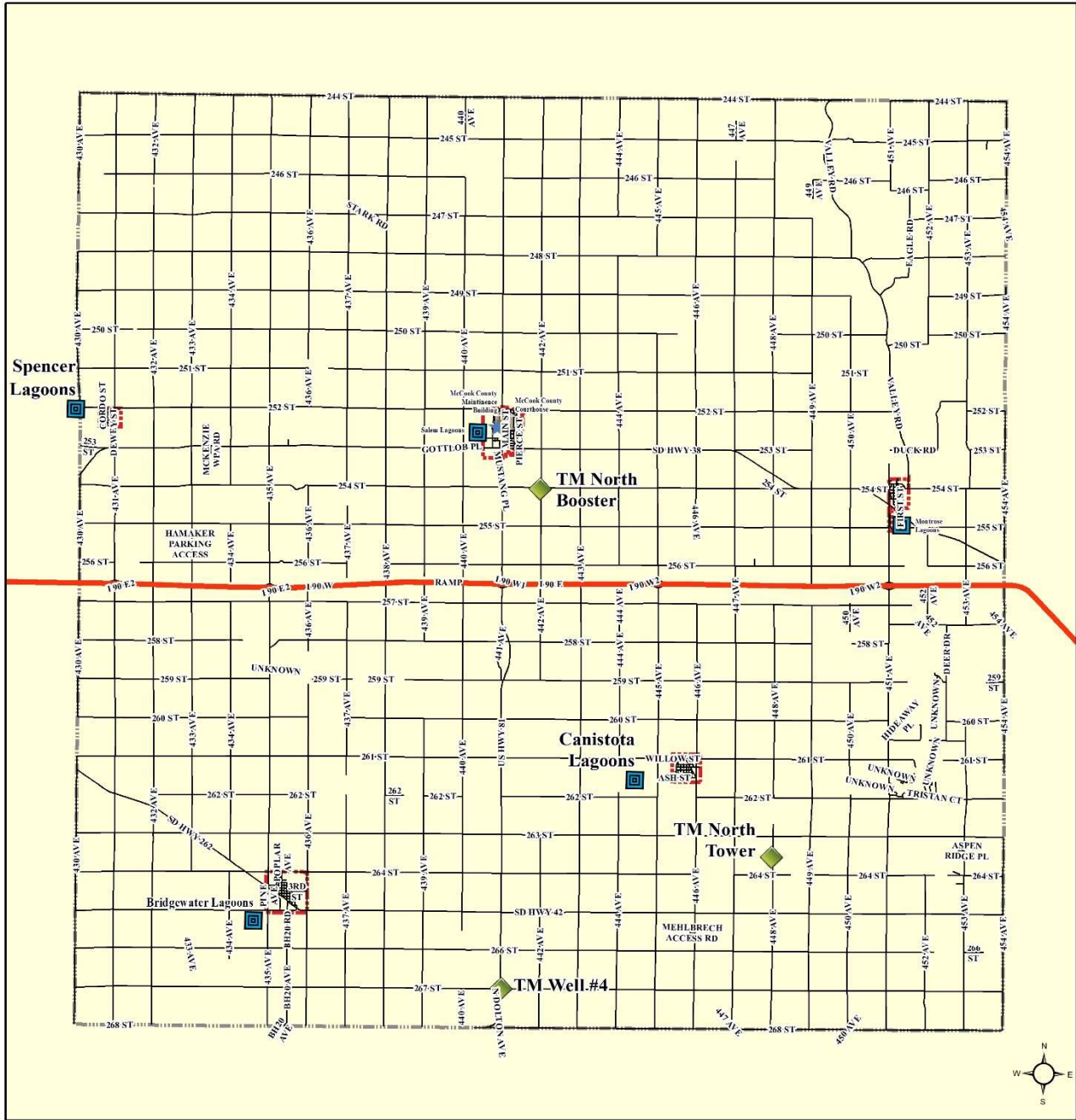
**Community Critical Facilities
City of Canistota**

0 350 700 1,400
Feet

SECOG
Geographic Information Services

Map updated by
SECOG on 3/5/2019

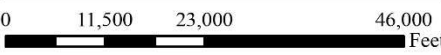




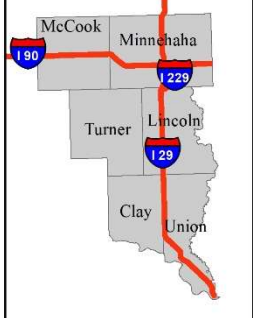
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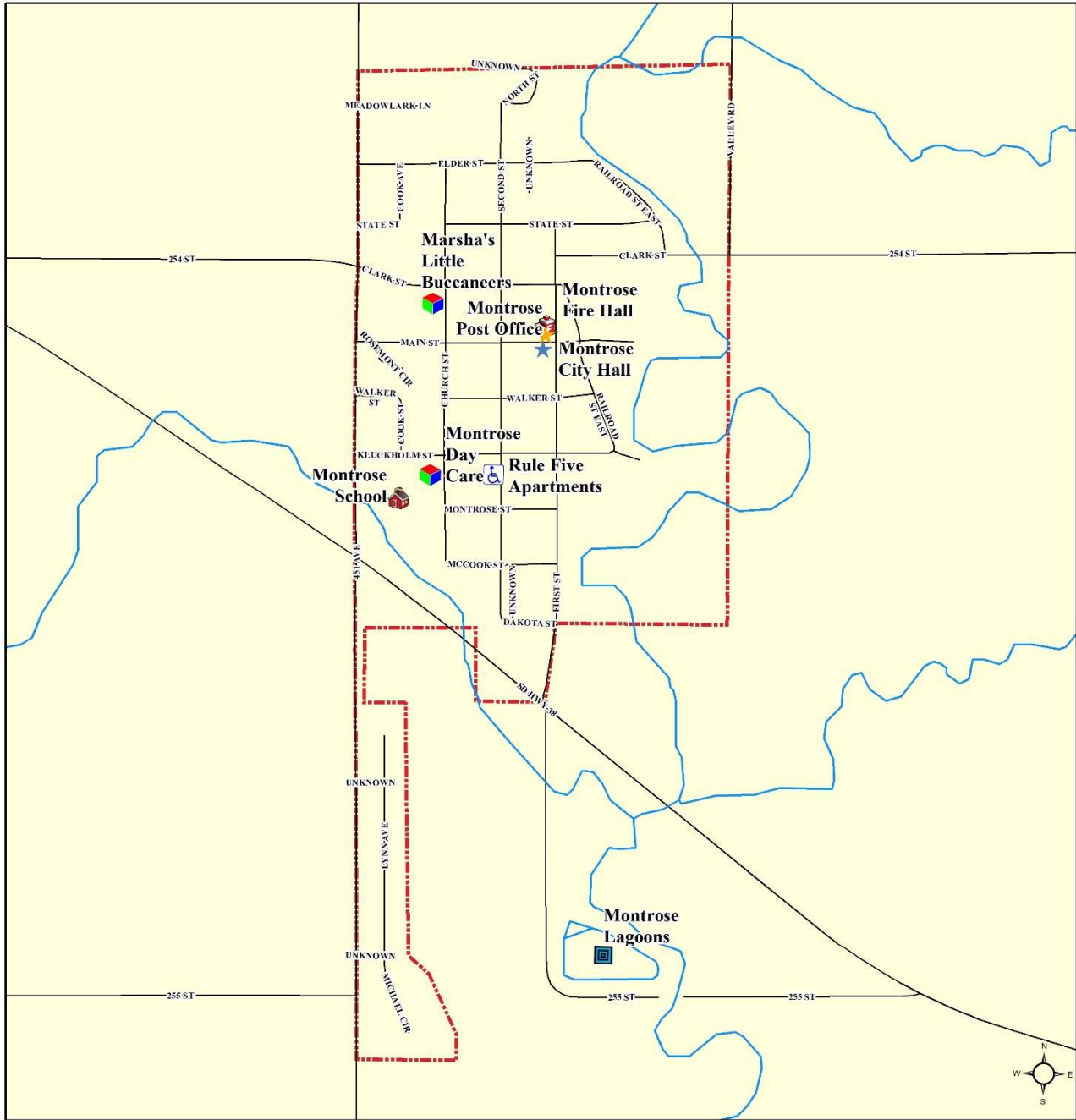
City Hall	School
Courthouse	Nursing Home/Assisted Living
Government Building	Water Tower
Clinic	Water Treatment
Ambulance	Lift Station
Daycare	Telecommunication
Fire Station	

Community Critical Facilities McCook County



Map updated by
SECOG on 3/5/2019





Legend

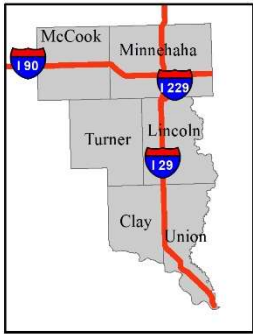
City Hall	School
Courthouse	Nursing Home/Assisted Living
Government Building	Water Tower
Clinic	Water Treatment
Ambulance	Lift Station
Daycare	Telecommunication
Fire Station	

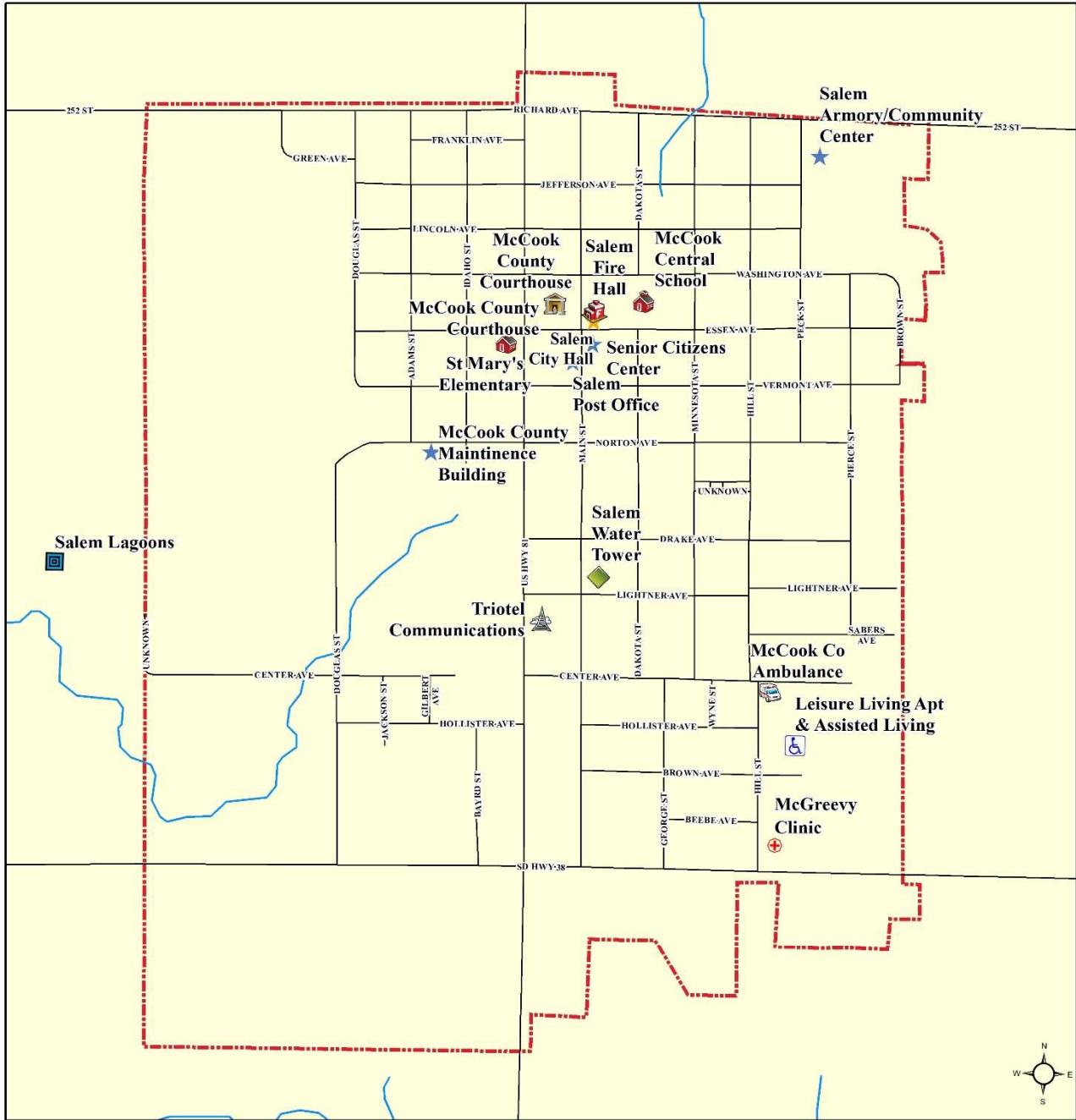
**Community Critical Facilities
City of Montrose**

0 600 1,200 2,400
Feet

SECOG
Geographic Information Services

Map updated by
SECOG on 3/5/2019





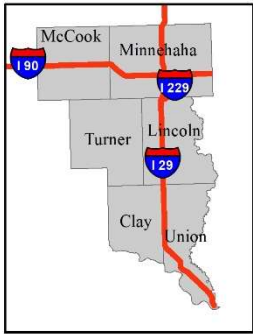
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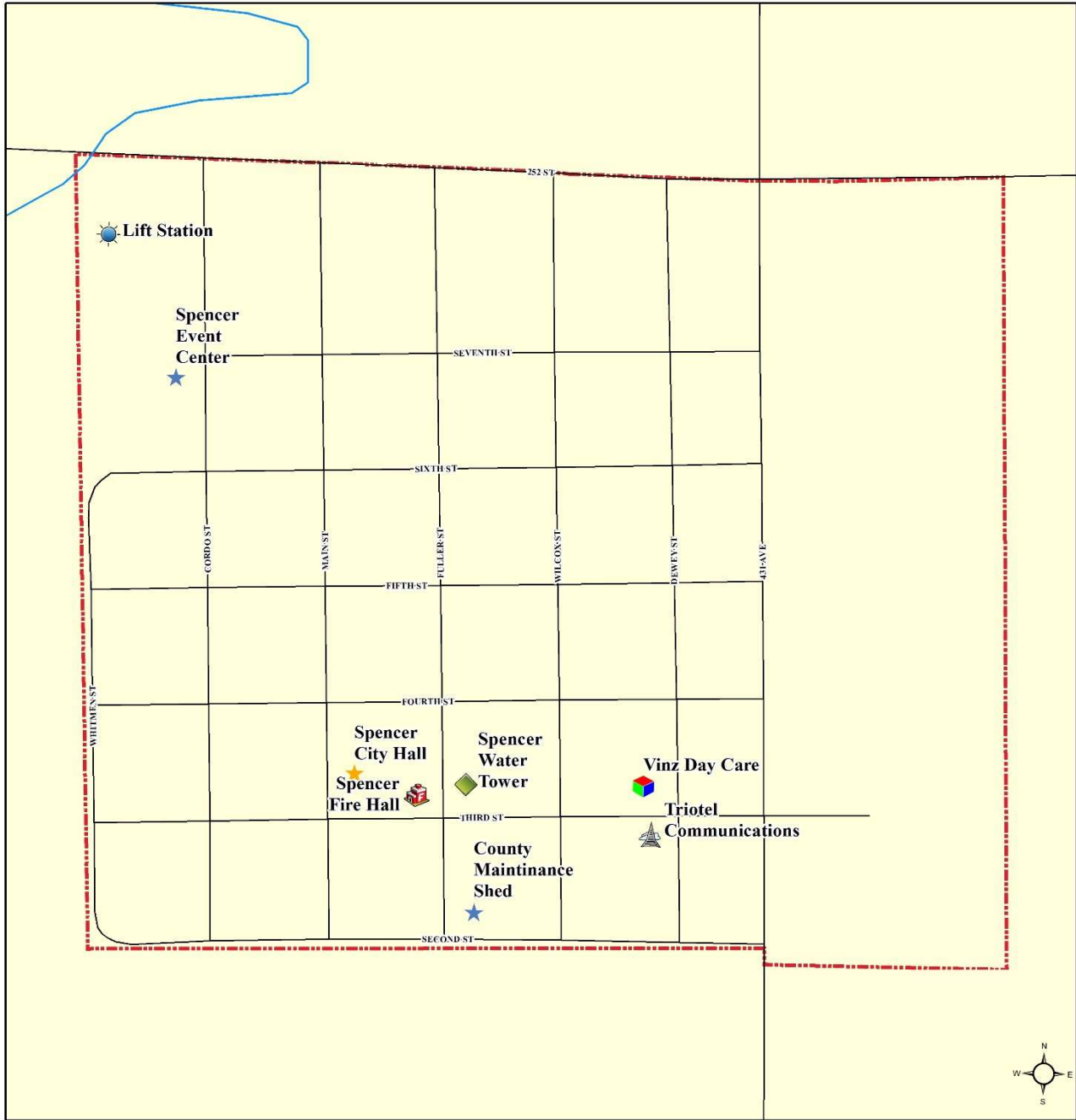
City Hall	School
Courthouse	Nursing Home/Assisted Living
Government Building	Water Tower
Clinic	Water Treatment
Ambulance	Lift Station
Daycare	Telecommunication
Fire Station	

Community Critical Facilities City of Salem

0 550 1,100 2,200 Feet

Map updated by
SECOG on 3/5/2019





Legend

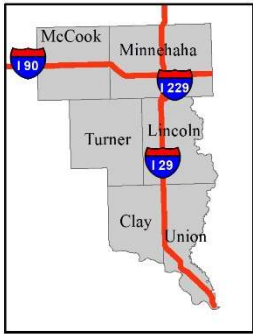
City Hall	School
Courthouse	Nursing Home/Assisted Living
Government Building	Water Tower
Clinic	Water Treatment
Ambulance	Lift Station
Daycare	Telecommunication
Fire Station	

**Community Critical Facilities
City of Spencer**

0 265 530 1,060
Feet

SECOG
Geographic Information Services

Map updated by
SECOG on 3/5/2019



APPENDIX B: SIGNIFICANT HAZARD EVENTS IN MC COOK COUNTY
JANUARY 1, 2013 – December 31, 2018

Severe Summer Storms (Including lightning, hail, strong winds)

LOCATION	DATE	TYPE	MAGNITUDE	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Canistota	6/16/14	Hail	1.5 inch	-	-	-	-
Rural McCook County	6/17/14	Hail	1.5 inch	-	-	-	-
Spencer	8/9/15	Hail	1.75 inch	-	-	-	-
Bridgewater	8/9/15	Thunderstorm/Wind	60 mph	-	-	-	-
Canistota	8/9/15	Hail	1.5 inch	-	-	-	-
Salem	5/25/16	Lightning		-	-	\$45k	
Rural McCook County	6/17/16	Hail	1.0 inch	-	-	-	-
Canistota	6/17/16	Thunderstorm/Wind	60 mph	-	-	-	-
Spencer	8/18/16	Hail	1.5 inch	-	-	-	-
Spencer	8/18/16	Thunderstorm/Wind	60 mph	-	-	-	-
Salem	7/22/17	Thunderstorm/Wind	64 mph	-	-	-	-
Salem	9/19/17	Thunderstorm/Wind	70 mph	-	-	-	-
Rural McCook County	9/22/17	Hail	1.0 inch	-	-	-	-
Rural McCook County	9/23/17	Hail	1.0 inch	-	-	-	-
Rural McCook County	6/23/18	Hail	1.25 inch	-	-	-	-
Rural McCook County	8/4/18	Hail	1.0 inch	-	-	-	-
Montrose	8/5/18	Thunderstorm/Wind	60 mph	-	-	-	-
Rural McCook County	8/28/18	Hail	1.0 inch	-	-	-	-

National Centers for Environmental Information
 Storm Events Database
www.ncdc.noaa.gov

Severe Winter Storms (Including blizzard, high winds, cold)

LOCATION	DATE	TYPE	MAGNITUDE	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Rural McCook County	2/10/13	Blizzard	-	-	-	-	-
Rural McCook County	2/21/13	Winter Weather	-	-	-	-	-
Rural McCook County	4/9/13	Winter Storm	-	-	-	\$10.000M	-
Rural McCook County	11/5/13	Winter Weather	-	-	-	-	-
Rural McCook County	12/3/13	Winter Storm	-	-	-	-	-
Rural McCook County	1/16/14	High Wind	58 mph	-	-	-	-
Rural McCook County	1/16/14	Blizzard	-	-	-	-	-
Rural McCook County	1/26/14	High Wind	58 mph	-	-	-	-
Rural McCook County	11/15/14	Winter Weather	-	-	-	-	-
Rural McCook County	12/15/14	Winter Weather	-	-	-	-	-
Rural McCook County	12/26/14	Winter Weather	-	-	-	-	-
Rural McCook County	1/05/15	Winter Storm	-	-	-	-	-
Rural McCook County	1/8/15	Winter Weather	-	-	-	-	-
Rural McCook County	1/31/15	Winter Storm	-	-	-	-	-
Rural McCook County	2/1/15	Winter Storm	-	-	-	-	-
Rural McCook County	3/3/15	Winter Weather	-	-	-	-	-

Rural McCook County	11/20/15	Winter Weather	-	-	-	-	-
Rural McCook County	11/30/15	Winter Storm	-	-	-	-	-
Rural McCook County	12/01/15	Winter Storm	-	-	-	-	-
Rural McCook County	12/25/15	Winter Storm	-	-	-	-	-
Rural McCook County	12/28/15	Winter Weather	-	-	-	-	-
Rural McCook County	1/16/16	Extreme Cold – Wind Chill	-	-	-	-	-
Rural McCook County	2/2/16	Blizzard	-	-	-	-	-
Rural McCook County	2/19/16	High Wind	42 mph	-	-	-	-
Rural McCook County	2/29/16	Winter Weather	-	-	-	-	-
Rural McCook County	3/1/16	Winter Weather	-	-	-	-	-
Rural McCook County	3/23/16	Winter Storm	-	-	-	-	-
Rural McCook County	3/26/16	Winter Weather	-	-	-	-	-
Rural McCook County	11/18/16	Winter Storm	-	-	-	-	-
Rural McCook County	12/10/16	Winter Weather	-	-	-	-	-
Rural McCook County	12/16/16	Winter Storm	-	-	-	-	-
Rural McCook County	12/17/16	Cold/Wind Chill	-	-	-	-	-
Rural McCook County	12/24/16	Winter Weather	-	-	-	-	-
Rural McCook County	12/25/16	High Wind	40 mph	-	-	-	-

Rural McCook County	1/24/17	Winter Storm	-	-	-	-	-
Rural McCook County	2/23/17	Winter Storm	-	-	-	-	-
Rural McCook County	3/12/17	Winter Weather	-	-	-	-	-
Rural McCook County	12/21/17	Winter Weather	-	-	-	-	-
Rural McCook County	12/25/17	Cold/Wind Chill	-	-	-	-	-
Rural McCook County	12/29/17	Winter Weather	-	-	-	-	-
Rural McCook County	12/31/17	Cold/Wind Chill	-	-	-	-	-
Rural McCook County	1/1/18	Cold/Wind Chill	-	-	-	-	-
Rural McCook County	1/10/18	Winter Weather	-	-	-	-	-
Rural McCook County	1/11/18	Cold/Wind Chill	-	-	-	-	-
Rural McCook County	1/15/18	Cold/Wind Chill	-	-	-	-	-
Rural McCook County	1/21/18	Winter Weather	-	-	-	-	-
Rural McCook County	2/5/18	Winter Weather	-	-	-	-	-
Rural McCook County	2/8/18	Winter Weather	-	-	-	-	-
Rural McCook County	2/19/18	Winter Weather	-	-	-	-	-
Rural McCook County	2/22/18	Winter Storm	-	-	-	-	-
Rural McCook County	2/24/18	Winter Weather	-	-	-	-	-
Rural McCook County	3/5/18	Blizzard	-	-	-	-	-

Rural McCook County	3/10/18	Winter Weather	-	-	-	-	-
Rural McCook County	3/16/18	Winter Weather	-	-	-	-	-
Rural McCook County	4/2/18	Winter Weather	-	-	-	-	-
Rural McCook County	4/8/18	Winter Weather	-	-	-	-	-
Rural McCook County	4/13/18	Blizzard	-	-	-	-	-
Rural McCook County	4/18/18	Winter Storm	-	-	-	-	-
Rural McCook County	10/14/18	Winter Weather	-	-	-	-	-
Rural McCook County	11/28/18	Winter Weather	-	-	-	-	-

National Centers for Environmental Information
Storm Events Database
www.ncdc.noaa.gov

Tornadoes (Including funnel clouds)

LOCATION	DATE	TYPE	MAGNITUDE	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Bridgewater	9/9/14	Funnel Cloud	N/A	-	-	-	-
Rural McCook County	5/10/15	Funnel Cloud	N/A	-	-	-	-

National Centers for Environmental Information
Storm Events Database
www.ncdc.noaa.gov

Flood

LOCATION	DATE	TYPE	MAGNITUDE	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Rural McCook County	6/6/14	Flood	-	-	-	\$100K	-

National Centers for Environmental Information
Storm Events Database
www.ncdc.noaa.gov

APPENDIX C: FLOOD INSURANCE RATE MAPS

DRAFT FLOOD RISK ASSESSMENT MAPS

BRIDGEWATER, SOUTH DAKOTA: DRAFT FLOOD RISK ASSESSMENT



CANISTOTA, SOUTH DAKOTA: DRAFT FLOOD RISK ASSESSMENT



MAP SYMBOLS

- County Boundary
- Township Boundary
- State Boundary
- Local Road
- Major Road
- Flood Risk Decrease
- Flood Risk Increase
- No Flood Risk Change

SECTION
 This map was prepared by FEMA for the National Flood Insurance Program. It is not intended to be used for any other purpose. It is not a warranty, guarantee, or endorsement of any product or service. It is not a contract. It is not a license. It is not a permit. It is not a certificate. It is not a receipt. It is not a record. It is not a document. It is not a thing. It is not a person. It is not a place. It is not a time. It is not a space. It is not a color. It is not a sound. It is not a smell. It is not a taste. It is not a touch. It is not a feeling. It is not a thought. It is not a dream. It is not a vision. It is not a reality. It is not a possibility. It is not a probability. It is not a certainty. It is not a possibility. It is not a probability. It is not a certainty.

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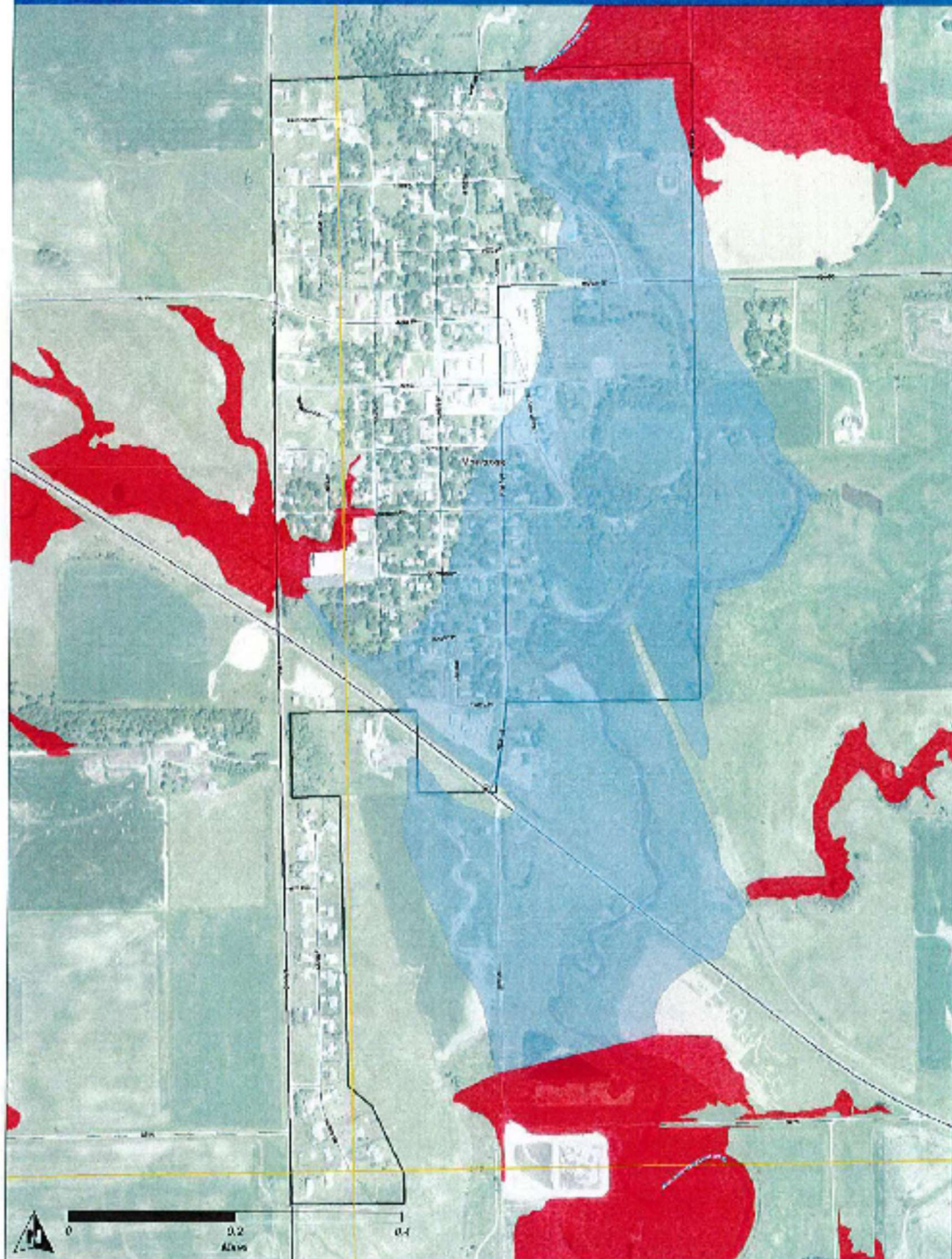


NATIONAL FLOOD INSURANCE PROGRAM

U.S. DEPARTMENT OF HOMELAND SECURITY
 Federal Emergency Management Agency
 400 South Capitol Avenue
 St. Paul, MN 55105
 651-285-1300
 www.fema.gov

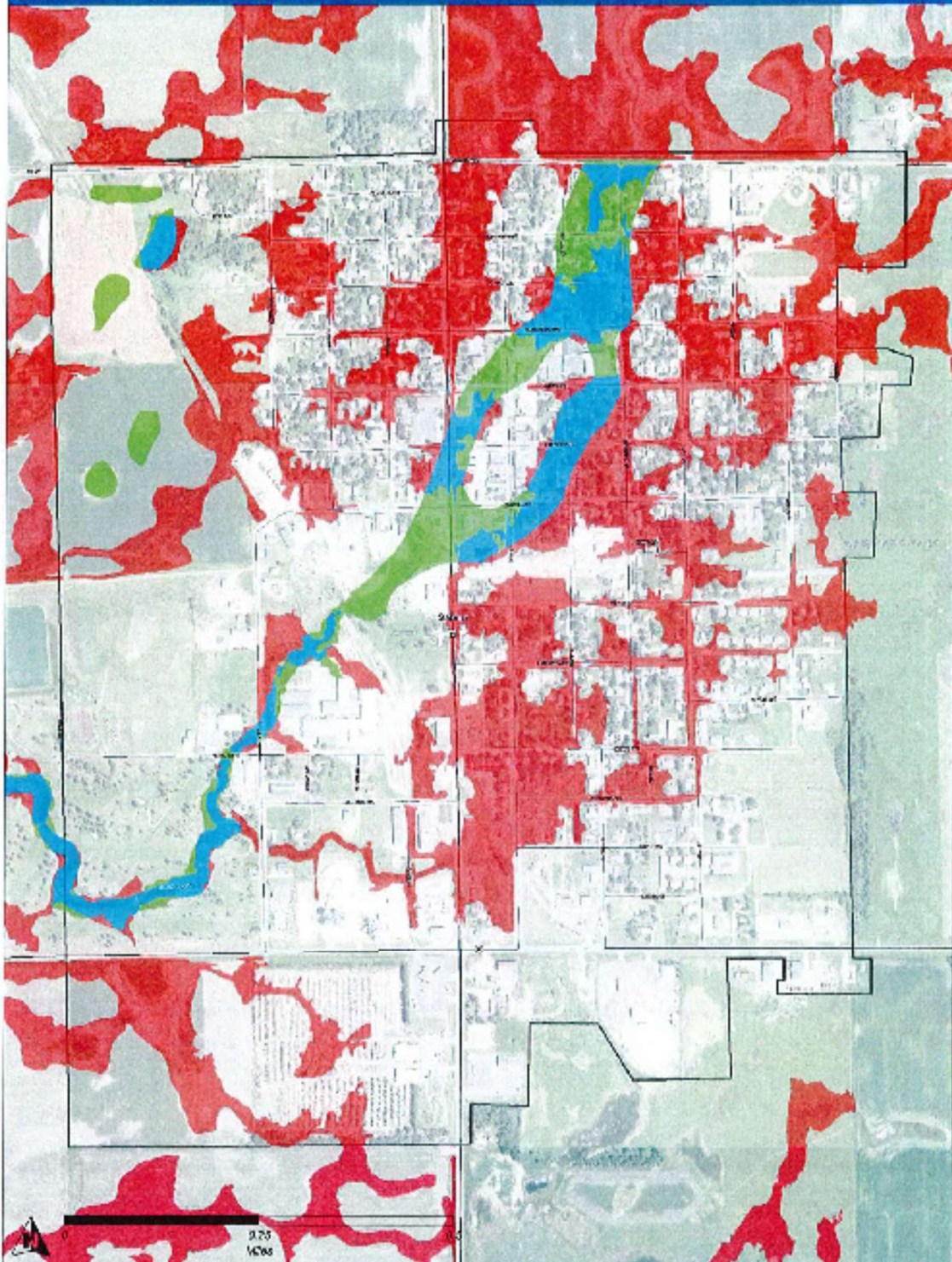


MONTROSE, SOUTH DAKOTA: DRAFT FLOOD RISK ASSESSMENT



MAP SYMBOLS County Boundary Municipal Boundary State Boundary Local Road Major Road		Flood Risk Increase Flood Risk Increase No Flood Risk Change Effective Flood Hazard Mitigation Effective Zero/SE Flood	<p>NOTES</p> <p>This map was prepared for the purpose of providing information to the public and is not intended to be used for any other purpose. The information on this map is based on the best available data and is subject to change without notice. The information on this map is not a guarantee of accuracy and is not intended to be used for any other purpose. The information on this map is not a guarantee of accuracy and is not intended to be used for any other purpose.</p>	<p>NATIONAL FLOOD INSURANCE PROGRAM</p> <p>Draft Flood Risk Assessment</p> <p>Montrose, South Dakota</p>
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SALEM, SOUTH DAKOTA: DRAFT FLOOD RISK ASSESSMENT



MAP SYMBOLS Country Boundary Municipal Boundary State Boundary Local Road Major Road Highway		Flood Risk Decrease Flood Risk Increase No Flood Risk Change Unlabeled FEMA Flood Prone	NOTES: This map is prepared for informational purposes only. It is not intended for use as a legal document. The information on this map is based on the best available data at the time of preparation. FEMA is not responsible for any errors or omissions.	NATIONAL FLOOD INSURANCE PROGRAM Draft Flood Risk Assessment Salem, South Dakota
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SPENCER, SOUTH DAKOTA: DRAFT FLOOD RISK ASSESSMENT



MAP SYMBOLOLOGY

- County Boundary
- Municipal Boundary
- School Boundary
- Local Road
- Major Road

- Flood Risk Decrease
- Flood Risk Increase
- No Flood Risk Change
- Eliminated FIRM Flood Potential

NOTES

- 1. This Flood Risk Assessment is based on the most recent available FEMA Flood Insurance Study (FIS) and Flood Insurance Rate Study (FIRI) data.
- 2. Flood Risk Increase areas are shown in red.
- 3. Flood Risk Decrease areas are shown in green.

This Flood Risk Assessment was prepared by FEMA in cooperation with the South Dakota Department of Transportation. It is not intended to be used for any other purpose. FEMA is not responsible for any errors or omissions in this assessment. The information contained herein is for informational purposes only and does not constitute an offer of insurance or any other financial product. For more information, please contact your insurance agent or FEMA at 1-800-452-4637.



NATIONAL FLOOD INSURANCE PROGRAM

U.S. DEPARTMENT OF COMMERCE
SPENCER, SOUTH DAKOTA



APPENDIX D: Hazard Mitigation Projects

JURISDICTION	HAZARD	MITIGATION ACTION	PRIORITY	TIME FRAME	POTENTIAL FUNDING	POTENTIAL COST
Bridgewater	Flood	Develop a storm water drainage plan and implement improvements	High	Short	DENR/CDBG	N/A
	Multi-Hazard	Ask residents to keep storm drains free of debris	High	Short	Local	N/A
Canistota	Flood	Pass and enforce an ordinance that regulates dumping or pumping into the sanitary sewer system	High	Short	Local	N/A
	Flood	Obtain easements for planned and regulated public use of privately-owned land for temporary water retention and drainage	High	Short	Local	TBD
	Flood	Increase awareness of impact infrastructure improvements has on flood-prone areas	High	Long	Local	N/A
	Flood	Improve stormwater drainage system capacity	Medium	Long	DENR	\$1 million
	Flood	Conduct regular maintenance of drainage systems, control structures, and drainage ditches	High	Long	Local	TBD
	Flood	Preserve flood plains as open space	High	Long	Local	N/A
	Flood	Increase awareness of flood risk and safety	High	Long	Local	N/A
	Flood	Protect and restore natural flood mitigation features	Medium	Long	Local	TBD
	Flood – Summer Storm – Winter Storm	Ask residents to help keep storm drains clear of debris	High	Short	Local	N/A

	Flood	Encourage homeowners to install backflow valves to prevent reverse-flow flood damages	High	Short	Local	N/A
	Multi-Hazard	Educate property owners regarding options for mitigating their properties from hazards through outreach activities	Medium	Long	Local	N/A
	Winter Storm	Ensure the development and enforcement of building codes for roof snow loads	Medium	Long	Local	N/A
	Winter Storm	Adopt snow removal and emergency shelter plans	High	Short	Local	N/A
	Multi-Hazard	Conduct regular maintenance of equipment and emergency generator	High	Short	Local	TBD
	Winter Storm	Install snow fences to prevent snow buildup	Medium	Short	Local	TBD
	Multi-Hazard	Establish standards for all utilities regarding tree pruning around lines to prevent storm damage	High	Short	Local	N/A
	Winter Storm	Encourage living snow fences	Medium	Long	Local	N/A
	Multi-Hazard	Improve emergency shelter plans and supplies	High	Long	HMGP – Local	N/A
McCook Central School District	Multi-Hazard	Install generator to keep freezer/refrigeration units operating in the event of a power outage	Medium	Long	HMGP - Local	\$50,000
	Multi-Hazard	Construct a solid structure at football field to provide shelter during hail, lightning, rain, tornado	Medium	Long	HMGP - Local	\$90,000
McCook County	Multi-Hazard	Have equipment in areas to remove debris from major roads	Medium	Short	Local	N/A
	Multi-Hazard	Improve warning procedures	High	Short	Local	N/A

	Multi-Hazard	Identify storm shelter for mobile home park	High	Short	Local	N/A
	Multi-Hazard	Encourage generators for other critical facilities	High	Short	HMGP - Local	TBD
	Multi-Hazard	Identify total number of special needs population in the county	High	Short	Local	N/A
	Hazardous Materials	Supply hazmat gear; increase capabilities	High	Short	Local	TBD
	Hazardous Materials	Training for Public Information Officer	High	Short	Local	TBD
	Hazardous Materials	Increase training for first responders	High	Long	Local	TBD
Montrose	Flood	Rip-Rap riverbanks (particularly in lagoon area) and other erosion control measures.	High	Short	Local	TBD
	Flood	Enforce an ordinance that regulates dumping or pumping into the sanitary sewer system.	High	Short	Local	N/A
	Flood	Conduct regular maintenance of drainage systems, control structures, and drainage ditches.	High	Short	Local	N/A
	Multi-Hazard	Conduct regular maintenance of equipment and emergency generator.	High	Short	Local	N/A
	Flood	Raise or relocate the lift station so it is not susceptible to flooding	High	Medium	DENR	TBD
Salem	Flood	Conduct H & H Study and Storm Sewer Study to identify mitigation measures	High	Short	HMGP – DENR - Local	\$32,500
	Multi-Hazard	Construct storm shelter at mobile home parks	High	Short	Local	\$100,000
	Multi-Hazard	Enforce building codes – flood, high wind	Medium	Short	Local	N/A
	Flood	Enforce codes regarding infiltration	High	Long	Local	N/A
	Flood	Install and/or repair sewer infrastructure and manholes	Medium	Long	DENR - Local	TBD

	Flood	Keep the natural flow areas (streams, creeks and rivers) clean of debris	Low	Short	Local	N/A
	Multi-Hazard	Create a clean-up plan for post-storm damage	Medium	Short	Local	N/A
	Multi-Hazard	Install generator backup at critical facilities	High	Short	HMGP – Local	\$50,000
	Flood	Keep drainage ditches, culverts, storm sewers clean of debris	High	Short	Local	N/A
	Multi-Hazard	Review and enforce building codes to reduce construction in flood-prone areas and to increase storm resiliency	Low	Short	Local	N/A
	Winter Storm	Establish emergency snow removal routes to prioritize emergency routes	High	Short	Local	N/A
	Flood	Build diversion ditches to divert water around the town not through it	Medium	Long	HMGP – DENR – Local	TBD
	Flood	Make sure there are enough storm sewer catch basins	Medium	Long	HMGP – DENR - Local	TBD
Southeastern Electric Cooperative	Multi-Hazard	Replace overhead power lines with underground power lines	High	Short	HMGP - Local	TBD
Spencer	Multi-Hazard	Maintain record of vulnerable populations and conduct wellness checks	High	Short	Local	N/A
	Multi-Hazard	Ensure building codes require tie downs and anchors for manufactured homes	High	Long	Local	N/A
	Multi-Hazard	Host community forums to discuss home safety and conservation tips for extreme weather	Medium	Long	Local	N/A
	Flood	Inspect drainage areas to keep them open and vegetated	Medium	Long	Local	N/A
	Multi-Hazard	Identify places for correct disposal of each group of waste: trees,	High	Short	Local	N/A

		vehicles, hardscape, hazardous chemicals				
	Multi-Hazard	Inventory city trees and identify those that are dead or diseased or that pose a threat to structures or power lines	High	Short	Local	N/A

APPENDIX E: Committee Meeting Documentation

Initial Invitation: July 5, 2018

McCook County PDM Invite List					All Meetings begin at 3:00 pm			
					16-Aug	20-Sep	25-Oct	29-Nov
County Commissioner	Dean Koch	PO Box 190	Salem, SD 57058					
County Commissioner	Ralph Dybdahl	PO Box 190	Salem, SD 57058					
County Commissioner	Steve Gordon	PO Box 190	Salem, SD 57058					
County Commissioner	Marc Dick	PO Box 190	Salem, SD 57058					
County Commissioner	Charles Liesinger	PO Box 190	Salem, SD 57058					
County Auditor	Geralyn Sherman	PO Box 190	Salem, SD 57058	mccoakaud@triotel.net		X	X	X
County Drainage Dept	Michael Kreuzfeldt	331 W. Norton	Salem, SD 57058	mchwy@triotel.net	X	X		X
Emergency Management	Brad Stiefvater	PO Box 309	Salem, SD 57058	mcems@triotel.net	X		X	X
Planning and Zoning	Tracy Hofer	PO Box 38	Salem, SD 57058	mccook.zoning@yahoo.com				
Sheriff	Mark Norris	130 W. Essex Avenue	Salem, SD 57058	mccookcoso@triotel.net				
Bridgewater Finance Officer	Joan Julson	PO Box 37	Bridgewater, SD 57319	bridgewater@unitelsd.com				
Maintenance	Todd Letcher	PO Box 37	Bridgewater, SD 57319	bh20cityguy@goldenwest.net				
Bridgewater Mayor	Mike Damm	PO Box 37	Bridgewater, SD 57319	mikedamm@b20@gmail.com		X	X	X
Council Member	Bob Anderson	PO Box 37	Bridgewater, SD 57319					
Council Member	Travis Holthaus	PO Box 37	Bridgewater, SD 57319					
Council Member	Jessica Leisinger	PO Box 37	Bridgewater, SD 57319					
Council Member	Dallas Ferguson	PO Box 37	Bridgewater, SD 57319	dallasfergesen@yahoo.com		X		
Council Member	Jesse Sutton	PO Box 37	Bridgewater, SD 57319					
Council Member	Lacey Weber	PO Box 37	Bridgewater, SD 57319					
Bridgewater-Emery School Dist	Jason Bailey	PO Box 350	Bridgewater, SD 57319	jason.bailey@k12.sd.us				
Bridgewater-Emery School Dist	Kim Aman	PO Box 350	Bridgewater, SD 57319	kim.aman@k12.sd.us				
Canistota Finance Officer	Kathy Townsend	PO Box 67	Canistota, SD 57012	canistotasd@unitelsd.com				
Maintenance	Darin Nugteren	PO Box 67	Canistota, SD 57012	canistotamaint@unitelsd.com		X	X	
Mayor	Justin Engbarth	PO Box 67	Canistota, SD 57012					
Council Member	Brad Miller	PO Box 67	Canistota, SD 57012					
Council Member	Rich Becker	PO Box 67	Canistota, SD 57012					
Council Member	Joel Weidenbach	PO Box 67	Canistota, SD 57012					
Council Member	Jessica Kerher	PO Box 67	Canistota, SD 57012					
Canistota School District	Larry Nebelsick	PO Box 8	Canistota, SD 57012					
Canistota School District	Lenny Schroeder	PO Box 8	Canistota, SD 57012					
TM Rural Water District	Jay Jorgensen	PO Box 445	Parker, SD 57053	jay.jorgensen@tmruralwater.com	X	X	X	
Southeastern Electric Cooperative	Jay Cleveland	PO Box 250	Salem, SD 57058	jay@southeastern.coop	X	X		X
Hanson Rural Water System	Don Schroeder	PO Box 324	Emery, SD 57332	hansonrw@triotel.net	X	X		
B-Y Water District	Terry Wootton	PO Box 248	Tabor, SD 57063					
Montrose Finance Officer	Sara Smith	PO Box 97	Montrose, SD 57048	montrose@goldenwest.net				
Maintenance	Daryl Sieverding	PO Box 97	Montrose, SD 57048	circled73@gmail.com				X
Mayor	Paul Klaudt	PO Box 97	Montrose, SD 57048					
Council Member	Robert Hoiten	PO Box 97	Montrose, SD 57048	roberthoiten1@gmail.com	X	X		
Council Member	Tony Heumiller	PO Box 97	Montrose, SD 57048					
Council Member	Susan Painter	PO Box 97	Montrose, SD 57048					
Council Member	Jake Tysdal	PO Box 97	Montrose, SD 57048					
Montrose School District	Lonny Johnson	309 S. Church	Montrose, SD 57048					
Salem Finance Officer	Lori Heumiller	PO Box 249	Salem, SD 57058	citysalem@salemsd.com	X	X	X	X
Mayor	Robin Rayman	PO Box 249	Salem, SD 57058					
Council Member	George Eichaker	PO Box 249	Salem, SD 57058					
Council Member	Mary Jo Heiberger	PO Box 249	Salem, SD 57058					
Council Member	Ben Johnson	PO Box 249	Salem, SD 57058					
Council Member	Ron Mayrose	PO Box 249	Salem, SD 57058					
Council Member	Doug Mokross	PO Box 249	Salem, SD 57058					
Council Member	Robin Westhoff	PO Box 249	Salem, SD 57058					
Fire Chief	Nathan Olinger	PO Box 249	Salem, SD 57058					
Park Superintendent	Dustin Weber	PO Box 249	Salem, SD 57058					
Water & Sewer Superintendent	William Selland	PO Box 249	Salem, SD 57058					
Street Superintendent	Brian Mentele	PO Box 249	Salem, SD 57058					
McCook Central School	Dr. Cheryl Thaler	PO Box 310	Salem, SD 57058	cheryl.thaler@k12.sd.us	X	X		X
St. Mary's Grade School	Rev. Fr. Martin Lawrence	PO Box 40	Salem, SD 57058					
Avera Medical Group		740 S. Hill	Salem, SD 57058					
Spencer Mayor	Donna Ruden	PO Box 9	Spencer, SD 57374					
Spencer Finance Officer		PO Box 9	Spencer, SD 57374	spencer@triotel.net				
Trustee	Beverly Heidelberger	PO Box 9	Spencer, SD 57374	bevheid2@hotmail.com	X	X	X	X
Trustee	Ron Reif	PO Box 9	Spencer, SD 57374					
EM - Lake County	Doug Huntrods	200 E. Center Street	Madison, SD 57042					
EM - Minnehaha County	Lynn DeYoung	608 Sigler Avenue	Sioux Falls, SD 57104					
EM - Miner County	Bob Calmus	PO Box 661	Howard, SD 57349					
EM - Hanson County	Kevin Kayser	PO Box 127	Alexandria, SD 57311					
EM- Hutchinson County		140 Euclid	Olivet, SD 57052					
EM - Turner County	Brad Georgeson	PO Box 461	Parker, SD 57053					
State Emergency Management	Jim Poppen	118 W. Capitol Ave	Pierre, SD 57501					
DGR Engineering	Gabe Laber	2909 E 57th St., Ste 10	Sioux Falls, SD 57108	gabriel.laber@dgr.com	X			
McCook County Ambulance	Brad Stiefvater Jr	400 S. Hill St	Salem, SD 57058	mcems2@triotel.net	X			
Initial Invite mailed 7/5/18								

Meeting One: August 16, 2018

AGENDA

August 16, 2018

3:00 pm McCook County Courthouse

- I. Welcome and Introductions – 5 minutes
- II. Team Member's Roles and Responsibilities – 5 minutes
- III. Review Participant Packet – 10 minutes
- IV. Activity: Refer to the list of hazards. Place the hazards in order of how they affect your community. Of the top three, how do they affect you and give examples – 20 minutes.
- V. Wrap-Up – 5 minutes

Next Meeting: September 20, 2018 – 3:00 pm – McCook County Courthouse

Homework: List your community's critical facilities with their street addresses

SIGN-IN

Adjourn 4:00 pm
(1 hour)

AUGUST 16, 2018 - 3:00 PM - MC COOK COUNTY COURTHOUSE

MC COOK COUNTY PRE-DISASTER MITIGATION MEETING ONE

NAME	REPRESENTING	EMAIL	PHONE	TRAVELED FROM...
Leslie Mastroianni	SECOB	leslie@seco.org	605-367-5301	Sioux Falls 74 miles RT
Brad Stiefels-JR	MCEN	mecn.s.d@triadtel.net	605-421-8394	Salem 6 miles RT
Brad Stiefelter SR	MCEN	mecn.s@triadtel.net	605-474-1302	Salem 1 mile RT
Cheryl Thaler	McCook Central State District	C.h.thaler@ksd.com	605-425-2264	Salem 1 mile RT
Robert Hoiten	Montrose City	robert.hoiten@montrose.com	605-771-9874	Montrose 34 miles RT
Dan Schaeckel	Hansen District	hansen.dan@triadtel.net	605-449-4422	Mitchell 38 miles RT
Ty Jorgensen	Water District	Ty.Jorgensen@waterdistrict.com	605-297-3334	Arker 76 miles RT
Beverly Heidelberg	Spencer City McCook Co	bevheid2@hotmail.com	605-244-2355	Spencer 23 miles RT
Mic Kreutzfeldt	Highway Southwestern Electric Company	mchuy@triadtel.net	605-425-2791	Salem 10 miles RT
Ty Cleveland	City of Spencer	ty@southwestern.org	605-980-0761	Salem 1 mile RT
Tom Hrenmiller		city@seco.com	605-465-2301	Salem 1 mile RT
Gabe Haber	DGR	gabriel.haber@dgr.com	605-339-4157	Sioux Falls 86 miles RT

12 participants in 1 session = 12 - Adjourn
K 8:30
255.60
397 miles

CRITICAL FACILITIES

The FEMA definition of Critical Facilities is: Facilities/Infrastructure that are critical to the health and welfare of the population and that are especially important following hazard events. Critical facilities include, but are not limited to, shelters, police and fire stations, and hospitals.

Critical facilities may also include:

- Structures or facilities that produce, use, or store highly volatile, flammable, explosive, toxic and/or water reactive materials.
- Hospitals, clinics, nursing homes, and housing likely to contain occupants who may not be sufficiently mobile to avoid death or injury during a hazard event.
- Police stations, fire station, vehicle and equipment storage facilities, and emergency operations centers that are needed for disaster response before, during and after hazard events.
- Public and private utilities and infrastructure that are vital to maintaining or restoring normal services to areas damaged by hazard events.
- City halls and community centers.
- Child care facilities and schools

Jurisdiction: _____

Facility

Use

Address

Facility	Use	Address

MINUTES OF THE PRE-DISASTER HAZARD MITIGATION PLANNING TEAM

The initial meeting of the McCook County Pre-Disaster Hazard Mitigation Planning Team convened at 3:00 pm August 16, 2018 in the community room of the McCook County Courthouse. Those in attendance included:

Leslie Mastroianni	SECOG
Brad Stiefvater	McCook County EMS
Brad Stiefvater Jr	McCook County EMS
Cheryl Thaler	McCook Central School District
Robert Hoiten	City of Montrose
Dan Schroeder	Hanson Rural Water
Jay Jorgensen	TM Rural Water District
Beverly Heidelberger	City of Spencer
Mic Kreutzfeldt	McCook County Highway Dept.
Jay Cleveland	Southeastern Electric Coop
Lori Heumiller	City of Salem
Gabe Laber	DGR Engineering

Brad Stiefvater, McCook County Emergency Services Director, gave a brief introduction to the Pre-Disaster Mitigation Plan status and the need to update the plan every five years. Participants were given a packet of materials for their reference throughout the planning process. The materials included definitions of terms commonly used in the update process, Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards, a list of hazards inherent to South Dakota, a Capability Assessment Worksheet, and a schedule of future planning team meetings.

Participants were asked to refer to the list of hazards identified in the State of South Dakota Plan and rank those hazards in the order of their effect on the participant's jurisdiction. Team members were asked to provide examples of how the top three disasters have impacted their jurisdiction.

Participating team members were asked to list their community's critical facilities along with the location and return those by the next meeting. The meeting adjourned at 4:00 pm.

Next Meeting: September 20, 2018 – 3:00 pm – McCook County Courthouse

Meeting Two: August 16, 2018

AGENDA

September 20, 2018

3:00 pm McCook County Courthouse

- VI. Welcome and Introductions – 5 minutes
- VII. Recap of hazard ranking – 5 minutes
- VIII. Identify Community Assets – 10 minutes
- IX. Activity: Probability and Vulnerability – 20 minutes
- X. Wrap-Up – 5 minutes

Next Meeting: October 25, 2018 – 3:00 pm – McCook County Courthouse

Homework: Complete Community Assets sheet, if necessary.

Also, if you haven't already, please provide the following ASAP:

- **Critical Facilities**
- **Community Questionnaire**
- **Capability Assessment Worksheet**

COMMUNITY ASSETS

People	
Economy	
Built Environment	
Natural Environment	

COMMUNITY ASSETS

PEOPLE

People are the most important community asset. The risk assessment can identify areas of greater population density as well as populations that may have unique vulnerabilities or be less able to respond and recover during a disaster.

- Visiting populations
- Access and functional needs populations
 - Children
 - The elderly
 - Physically or mentally disabled
 - Non-English speakers
 - Medically or chemically dependent
- Students
- Second homeowners
- Migrant farm workers
- Visitors for special events

ECONOMY

After a disaster, economic resiliency drives recovery. Economic assets can be described in terms of direct or indirect losses; for example, building or inventory damage is direct, but functional downtime and loss of employment wages are indirect losses.

- Manufacturing
- Agricultural
- Service sector
- Major employers
- Commercial centers

BUILT ENVIRONMENT

The built environment includes existing structures, infrastructure systems, critical facilities, and cultural resources. Areas of future growth and development are also important when considering the built environment.

- Vulnerable structures
- Infrastructure
 - Water and wastewater
 - Power utilities
 - Transportation (roads, railways, waterways)
 - Communication systems/centers
 - Energy pipelines and storage
- Critical Facilities
 - Hospitals and medical facilities
 - Police and fire stations
 - Emergency operations centers
 - Evacuation shelters
 - Schools
 - Airports, heliports
- Cultural Resources
- Future development

NATURAL ENVIRONMENT

Environmental assets and natural resources are important to community identity and quality of life and support the economy through agriculture, tourism and recreation and a variety of other ecosystem services, such as clean air and water.

- Wetlands and riparian areas
- Functional landscaping
- Parks and trails

SIGN-IN

SEPTEMBER 20, 2018 - 3:00 PM - MC COOK COUNTY COURTHOUSE

MC COOK COUNTY PRE-DISASTER MITIGATION MEETING TWO

NAME	REPRESENTING	EMAIL	PHONE	TRAVELED FROM...	
Beverly Herdelberger	Town of Spencer	beverheid@hotmail.com	605-246-3355	Spencer	33 m RT
Dan Schroeder	Hanson SW Rural Water	hanson hanson@donetrib.com	605-449-1420	Mitchell	88 m RT
Joy Jorgensen	TA District	Joy.Jorgensen@starnval.com	605-247-3334	Parker	76 m RT
Robert Herten	Mayor - City Council	robert.herten@gmail.com	605-771-9874	MANROSE	34 m RT
Jay Cleveland	Southwestern Electric Cooperative	jay@southwestern.coop	605-643-3614	Salem	1 m RT
Lon Heumiller	City of Salem	city.salem@salemsd.com	605-425-2501	Salem	1 m RT
Dallas Jorgensen	DeWester City Council	Dallas.jorgensen@starn.com	605-941-3697	Brookings	38 m RT
Michael Damm	MAYOR Bridgeview City of	mikedammmb@aol.com	(781) 812-6768	Bridgeview	38 m RT
Darin Nugteren	Canistota Auditor	canistota.maint@united.sd.com	605-530-1593	Canistota	34 m RT
Geraldyn Sherman	McCook County McCook	mschockaud@tristat.net	605-425-2791	Salem	1 m RT
Cheryl Thaler	Central School District	Cheryl.thaler@k12.sd.gov	605-425-2264	Salem	1 m RT
Mic. Kreutzfeldt	McCook Co. Highway Dept.	mchay@tristat.net	605-425-2731	Salem	1 m RT
Neslic Mastroianni	SECOB	neslic@secog.org	605-681-8184	SIOUX FALLS	30 m RT

422 miles

13 participants @ 1 hour = 13 hours
13 hours x 21.30 = 276.90

MINUTES OF THE PRE-DISASTER HAZARD MITIGATION PLANNING TEAM

The second meeting of the McCook County Pre-Disaster Hazard Mitigation Planning Team convened at 3:00 pm September 20, 2018 in the community room of the McCook County Courthouse. Those in attendance included:

Leslie Mastroianni	SECOG
Michael Damm	City of Bridgewater
Dallas Furgeson	City of Bridgewater
Cheryl Thaler	McCook Central School District
Robert Hoiten	City of Montrose
Dan Schroeder	Hanson Rural Water
Jay Jorgensen	TM Rural Water District
Beverly Heidelberger	City of Spencer
Mic Kreutzfeldt	McCook County Highway Dept.
Jay Cleveland	Southeastern Electric Coop
Lori Heumiller	City of Salem
Geralyn Sherman	McCook County Auditor
Darin Nugteren	City of Canistota

Brief introductions were made. Team members received a recap of the hazard ranking from the exercise done week one.

The group received a handout with a list of community assets, definitions and examples. The community assets are people, the economy, built environment and natural environment.

Using the identified hazards from week one and the community assets just defined, the planning team conducted a probability/vulnerability exercise. The discussion began by evaluating the probability of each hazard occurring during specified time periods. The group then assessed how vulnerable each of the community assets would be if each disaster were to occur.

Participants were reminded to turn in the completed Critical Facilities form, the Community Questionnaire and the Capability Assessment Worksheet as soon as possible.

The meeting adjourned at 4:00 pm.

Next Meeting: October 25, 2018 – 3:00 pm – McCook County Courthouse

PROBABILITY AND VULNERABILITY

Probability

The likelihood of a hazard occurring in the future

High Probability: Occurring every 1-10 years

Moderate Probability: Occurring every 10-25 years

Low Probability: Occurring at intervals greater than 25 years

Vulnerability

A measure of the extent to which a community, structure, or geographical area is likely to be damaged or disrupted, on account of its nature or location, by the impact of a particular disaster hazard

People: Possibility of death or injury

Economy: Physical losses and damages

Interruption of services

Built Environment: Physical losses and damages

Interruption of services

Natural Environment: Physical losses and damages

Meeting Three: October 25, 2019

AGENDA

October 25, 2018

3:00 pm McCook County Courthouse

- XI. Welcome and Introductions – 5 minutes
- XII. Recap of risk assessment – 10 minutes
- XIII. Activity: Problem Statements – 30 minutes
- XIV. Wrap-Up – 5 minutes

Next Meeting: November 29, 2018 – 3:00 pm – McCook County Courthouse

**Homework: Complete Problem Statement Worksheet and bring back with you
November 29.**

Also, if you haven't already, please provide the following ASAP:

- **Critical Facilities**
- **Community Questionnaire**
- **Capability Assessment Worksheet**

SIGN-IN

OCTOBER 25 - 3:00 PM - MC COOK COUNTY COURTHOUSE

MC COOK COUNTY PRE-DISASTER MITIGATION MEETING THREE

NAME	REPRESENTING	EMAIL	PHONE	TRAVELED FROM...
Beverly Heidelberg	Spencer	beyheid@btmail.com	605-246-2355	Spencer
Darin Nugteren	Canistota	canistotafarmaint@unitedsd.com	296-3852	Canistota
Leslie Mastroianni	SECOG	leslie@secog.org	681-8184	Sioux Falls
Jay Torgensen	TH Rural Water	Jay.Torgensen@thra.ruralwater.com	605-297-3334	Parker SD
Michael Damm	Bridgewater	mikedammh2o@gmail.com	(781)812-6766	Bridgewater
Lori Hewmiller	Salem	citysalem@selemnsd.com	605-425-3301	Salem
Brylyn Sherman	McCook Co	mscherm@trintel.net	605-425-2791	Salem
Brad Stiefvater	McCook Co	mstiefv@trintel.net	421-1509	Salem
Ustema Mastroianni	SECOG	leslie@secog.org	681-8184	Sioux Falls

23 m
34 m RT
26 m RT
74 m RT
37 m RT
1 m RT
1 m RT
1 m RT
24 m RT

8 participants @ 1 hour
8 hours
121.30
175.40

260 miles

MINUTES OF THE PRE-DISASTER HAZARD MITIGATION PLANNING TEAM

The third meeting of the McCook County Pre-Disaster Hazard Mitigation Planning Team convened at 3:00 pm October 25, 2018 in the community room of the McCook County Courthouse. Those in attendance included:

Leslie Mastroianni	SECOG
Michael Damm	City of Bridgewater
Brad Stiefvater	McCook County Emergency Management
Jay Jorgensen	TM Rural Water District
Beverly Heidelberger	City of Spencer
Lori Heumiller	City of Salem
Geralyn Sherman	McCook County Auditor
Darin Nugteren	City of Canistota

A recap of progress to date was distributed. A copy is attached. There will be a fourth meeting where the group will finish identifying mitigation actions for the plan update. There will be a fifth meeting, but it remains unscheduled. The group will review the draft at that meeting.

The group worked on an example problem statement and mitigation actions. Worksheets were distributed for the group members to complete with their boards/councils. Reminder: Keep track of your time outside the Planning Team Meetings. The completed forms should be brought back completed at the next meeting.

Participants were reminded to turn in the completed Critical Facilities form, the Community Questionnaire and the Capability Assessment Worksheet as soon as possible.

The meeting adjourned at 4:00 pm.

Next Meeting: November 29, 2018 – 3:00 pm – McCook County Courthouse

HAZARD MITIGATION PLANNING PROCESS

Progress to Date

Task 1:Determine the Planning Area and Resources

Task 2:Build the Planning Team

Task 3:Create and Outreach Strategy

Task 4: Review Community Capabilities

This is the handout that was in your participant packet you received at the first planning meeting. If you haven't already done so, please turn this in as soon as possible.

Task 5: Conduct a Risk Assessment

The Planning Team identified the hazards most relevant to southeastern South Dakota and McCook County, in particular. The hazards are (in order of relevance):

- Winter Storms
- Floods
- Windstorm
- Summer Storm
- Tornado
- Drought
- Hazardous Materials
- Wildfire
- Agricultural Pests and Diseases
- Geological Hazards

The Planning Team assessed the probability of a hazard occurring in McCook County and the vulnerability of the assets in the face of the hazard. Assets are considered people, the economy, the built environment and the natural environment. This process was done through a scenario analysis.

HAZARD AND VULNERABILITY ASSESSMENT TOOL NATURALLY OCCURRING EVENTS

EVENT	PROBABILITY	SEVERITY = (MAGNITUDE - MITIGATION)				RISK
		Impact on People	Impact on the Economy	Impact on the Built Environment	Impact on the Natural Environment	
	<i>Likelihood this will occur</i>					<i>Relative threat*</i>
SCORE	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Low or none 2 = Moderate 3 = High	0 - 100%
Winter Storm	3	2	2	3	1	67%
Floods	3	1	2	2	2	58%
Wind Storm	3	1	1	3	2	58%
Summer Storm	3	1	1	1	1	33%
Tornado	2	3	3	3	3	67%
Drought	3	1	3	2	3	75%
Hazardous Materials	2	1	1	1	1	22%
Wildfire	1	1	1	2	1	14%
Ag Pests and Diseases	2	2	2	1	2	39%
Geological Hazards	1	1	1	1	1	11%
AVERAGE SCORE	2.30	1.40	1.70	1.90	1.70	11%

**Threat increases with percentage.*

Highest Total Scores = Highest Risk

Meeting Four: October 25, 2019

AGENDA

November 29, 2018

3:00 pm McCook County Courthouse

- XV. Welcome and Introductions – 5 minutes
- XVI. Activity: Finalizing Mitigation Actions – 40 minutes
- XVII. Wrap-Up – 5 minutes

Next Meeting: TBD

Also, if you haven't already, please provide the following ASAP:

- **Critical Facilities**
- **Community Questionnaire**
- **Capability Assessment Worksheet**

SIGN-IN

NOVEMBER 29 - 3:00 PM - MC COOK COUNTY COURTHOUSE

MC COOK COUNTY PRE-DISASTER MITIGATION MEETING FOUR

NAME	REPRESENTING	EMAIL	PHONE	TRAVELED FROM...	
Leslie Mastroianni	SECOG	leslie@secoj.org	367-5390	Sioux Falls	86 m RT
Jim Feeney	SECOG	jim@secoj.org	381-8175	Sioux Falls	86 m RT
Daryl Steward	City of Monroe	circled73@gmail.com	370-1240	Monroe	84 m RT
Beverly Hordelberger	City of Spencer	bevheid3@hotmail.com	605-246-2335	Spencer	23 m RT
Michael Damm	City of Bridgewater MA-You	mikedammh2@gmail.com	(761) 812-6766	Bridgewater	36 m RT
Cheryl Thaler	Supt McCook cnt McCook	CherylThaler@ccz.net	605-425-2264	Delton	1 m
Brad Stiefvater	EM	mamad@triotel.net	424-1302	Salem	1 m
Jay Cleveland	Southwestern Electric	jay@southwestern.coop	425-2661	Salem	1 m
Berilyn Shisman	McCook Electric	mccookout@triotel.net	425-2791	Salem	1 m
Lori Hummer	City of Salem	cityofsalem@salem.sd.com	425-2301	Salem	1 m
Mic Kreutzfeldt	McCook Highway	mchuy@triotel.net	425-2731	Salem	1 m
11 participants @ 1 hour				273 miles	
				1 21.30	
				234.30	

MINUTES OF THE PRE-DISASTER HAZARD MITIGATION PLANNING TEAM

The fourth meeting of the McCook County Pre-Disaster Hazard Mitigation Planning Team convened at 3:00 pm November 29, 2018 in the community room of the McCook County Courthouse. Those in attendance included:

Leslie Mastroianni	SECOG
Jim Feeny	SECOG
Daryl Sieverding	City of Montrose
Beverly Heidelberger	City of Spencer
Michael Damm	City of Bridgewater
Cheryl Thaler	McCook Central School
Brad Stiefvater	McCook County Emergency Manager
Jay Cleveland	Southeastern Electric
Geralyn Sherman	McCook County Auditor
Lori Heumiller	City of Salem
Mic Kreutzfeldt	McCook County Highway Department

The Planning Team finished up identifying mitigation actions for their particular jurisdiction. Team members then began the process of evaluating the mitigation actions. Team members:

- Determined if the mitigation action would be completed in the short term (within 3 years) or the long term.
- Set a priority for each action – High, Medium, or Low.
- Indicated which hazard(s) the action would apply.

Team members were reminded to submit any outstanding forms or information. A copy of all forms will be sent out with the minutes.

There will be one more regular meeting of the Planning Team once a draft is ready to review.

The meeting adjourned at 4:00 pm.

Next Meeting: TBD

Community/Organization:									

Mitigation Action:									
Time Frame:	ST	LT	N	Ongoing project?	Y	Priority:	H	M	L
Multi-Hazard or Hazard Specific	If Hazard Specific, circle applicable hazards:								
WS	FL	WS	SS	TO	HM	WF	AP	GH	
DR									
Answer Yes or No									
~ Will this action protect lives and prevent injuries? _____									
~ Will this action eliminate or reduce damage to structures and infrastructure? _____									
~ Does the community or public support this action? _____									

Short Term (ST): Implemented within three years

Long Term (LT): Will be implemented at least three years or more into the future

Priority:

H – High

M – Medium

L – Low

WS – Winter Storm

FL – Flood

WS – Wind Storm

SS – Summer Storm

TO – Tornado

DR – Drought

HM – Hazardous Materials WF – Wildfire

AP – Ag Pests and Diseases

GH – Geological Hazards

Meeting Five: May 8, 2019

Press Release

FOR IMMEDIATE RELEASE

Release Date: Monday April 8, 2019

Contact: Leslie Mastroianni, South Eastern Council of Governments, 605-681-8184

**McCook County Multi-Hazard Pre-Disaster Mitigation Planning Meeting
to be held on May 8, 2019 at 3:00pm**

Over the course of the last several months, a planning committee consisting of representatives from McCook County and municipalities within the county have been meeting to facilitate the update of the joint Multi-Hazard Pre-Disaster Mitigation Plan. The updated Plan is required for McCook County and municipalities within the county to remain eligible for the Federal Emergency Management Agency's Hazard Mitigation Grant Program Funding.

McCook County will be holding a meeting to ask for public input, **Wednesday, May 8th at 3:00 PM** at the McCook County Courthouse, 130 W Essex Avenue, Salem, South Dakota 57058. At this meeting, the committee will be reviewing the current draft update of the 2019 McCook County Multi-Hazard Pre-Disaster Mitigation Plan update and asking for any final concerns or changes from the public.

Individuals with specific knowledge or interest regarding the topics being discussed are encouraged to attend to provide feedback on potential pre-disaster hazard mitigation projects. For more information, please contact Leslie Mastroianni at 605-681-8184, Brad Stiefvater, McCook County Emergency Manager at 605-425-2085 or visit www.secog.org.

Sent 4/8/19 to:

Salem Special

Bridgewater Tribune

Canistota Clipper

Montrose Herald

AGENDA

May 8, 2019

3:00 pm McCook County Courthouse

PUBLIC MEETING – DRAFT REVIEW

- I. Welcome and Introductions – 5 minutes
- II. Review Draft Pre-Disaster Hazard Mitigation Plan Update – 20 minutes
- III. Review Mitigation Actions – 20 minutes
- IV. Next Steps – 5 minutes
- V. Wrap-Up – 5 minutes

SIGN-IN

May 8, 2019 - 3:00 PM - MC COOK COUNTY COURTHOUSE

MC COOK COUNTY PRE-DISASTER MITIGATION PUBLIC MEETING

DRAFT REVIEW

NAME	REPRESENTING	EMAIL	PHONE	TRAVELED FROM...	
Leslie Mastoranni	SECOG	leslie.esocog.org	605-681-8184	Sioux Falls	8:40m
Beverly Heidelberger	Spencer	bevheid2@btwin1g.com	605-246-2355	Spencer SD	8:30m
Beryllyn Sherman	McCook County	mccoockauid@tristel.net	605-425-2791	Salem SD	1m
Sara Smith	Montrose	montrose@goldenwest.net	605-363-5065	Montrose	3:40m
Mic Kreutzfeldt	McCook Hwy	mchwy@tristel.net	605-425-2731	Salem SD	1m
Jean Julson	Bridgewater	bridgewater@whitebottom.com	605-722-2690	Bridgewater	3:30m
Gabe Heber	DGR	gabriel.heber@gr.com	605-339-4157	Sioux Falls	8:40m
Jay Cleveland	Southwestern Electric Group	jay@southwestern.coop	605-425-2661	Salem	1m
BS Stiefvander	McCopp & Co. E/M	mccosd@tristel.net	605-421-8592	Salem	1m

9 participants @ 1 hour 9:45
 x 21.30
 191.70
 271 miles

MINUTES OF THE PRE-DISASTER HAZARD MITIGATION PLANNING TEAM

The fifth and final meeting of the McCook County Pre-Disaster Hazard Mitigation Planning Team convened at 3:00 pm May 8, 2019 in the community room of the McCook County Courthouse. This meeting was also open to the public for review and comments. Those in attendance included:

Leslie Mastroianni	SECOG
Beverly Heidelberger	City of Spencer
Joan Julson	City of Bridgewater
Brad Stiefvater Jr.	McCook County Emergency Manager
Jay Cleveland	Southeastern Electric
Geralyn Sherman	McCook County Auditor
Sara Smith	City of Montrose
Mic Kreutzfeldt	McCook County Highway Department
Gabe Laber	DGR Engineering

The Planning Team and members of the public responding to the public notices reviewed the draft of the Pre-Disaster Mitigation Plan.

An overview of the plan development process was presented along with a summary of the risk assessment findings.

A handout of the proposed mitigation actions included in the draft was available for review. There was some discussion of the generators purchased for all the communities in the county about ten years ago. It is surmised that not of those generators are in working order. Montrose and Bridgewater added a couple of mitigation actions to the list.

Next steps in the process were discussed. Montrose and Salem have projects they would like to initiate in 2019. These are on hold until the PDM is approved by FEMA. SECOG will submit the draft to the State of South Dakota next week for review. Any additions or changes must be submitted by Wednesday, May 15.

The meeting adjourned at 4:00 pm.

APPENDIX G: References

Print References

Local Mitigation Planning Handbook. FEMA. March 2013.

Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards. FEMA. January 2013.

South Dakota Hazard Mitigation Plan. April 2014. South Dakota Office of Emergency Management/Dewberry. 2014.

Discovery Report McCook County, South Dakota. FEMA/South Dakota Emergency Management Office. December 2016.

Community Status Book Report – South Dakota. FEMA. February 26, 2018.

McCook County Master Transportation Plan. September 2017.

McCook County Comprehensive Plan 2000 - 2020. McCook County.

Bridgewater Comprehensive Plan 1997 – 2017. City of Bridgewater.

Canistota Comprehensive Plan 2035. City of Bridgewater.

Montrose Comprehensive Plan January 1996. City of Montrose.

Salem Comprehensive Plan April 1996. City of Salem.

Spencer Comprehensive Plan 2000 – 2020. Town of Spencer.

Electronic References

Repetitive Loss County Summary. <https://bsa.nfipstat.fema.gov/reports/1040.htm>.

NFIP Policy Statistics. <https://bsa.nfipstat.fema.gov/>.

FEMA Flood Map Service Center. <https://msc.fema.gov/portal>.

Disaster Federal Registry Notice. www.fema.gov.

National Weather Service. www.weather.gov.

National Centers for Environmental Information. www.ncdc.noaa.gov/stormevents.

National Climatic Data Center. www.ncdc.noaa.gov.

Federal Emergency Management Agency. www.fema.gov.

United States Drought Monitor. <http://drought.unl.edu/MonitoringTools/USDroughtMonitor.aspx>.

National Weather Service – Storm Ready. <https://www.weather.gov/stormready/>.

United States Census Bureau. <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>.

South Dakota Dashboard. <https://www.southdakotadashboard.org/>.

National Severe Storms Laboratories. <https://www.nssl.noaa.gov/>.

United States Geological Survey. <https://www.usgs.gov/>.

United States Environmental Protection Agency. <https://www.epa.gov/>.

National Oceanic and Atmospheric Administration. <http://www.noaa.gov/>.

South Dakota Department of Environment and Natural Resources. <https://denr.sd.gov/>.