Western Sandhills Community Wildfire Protection Plan

FOR THE COUNTIES OF ARTHUR, DEUEL, GARDEN, GRANT, HOOKER, MCPHERSON, AND PARTS OF CHEYENNE AND MORRILL

Photo courtesy of Doug Whisenhunt

OCTOBER, 2019

NEBRASKA FOREST SERVICE
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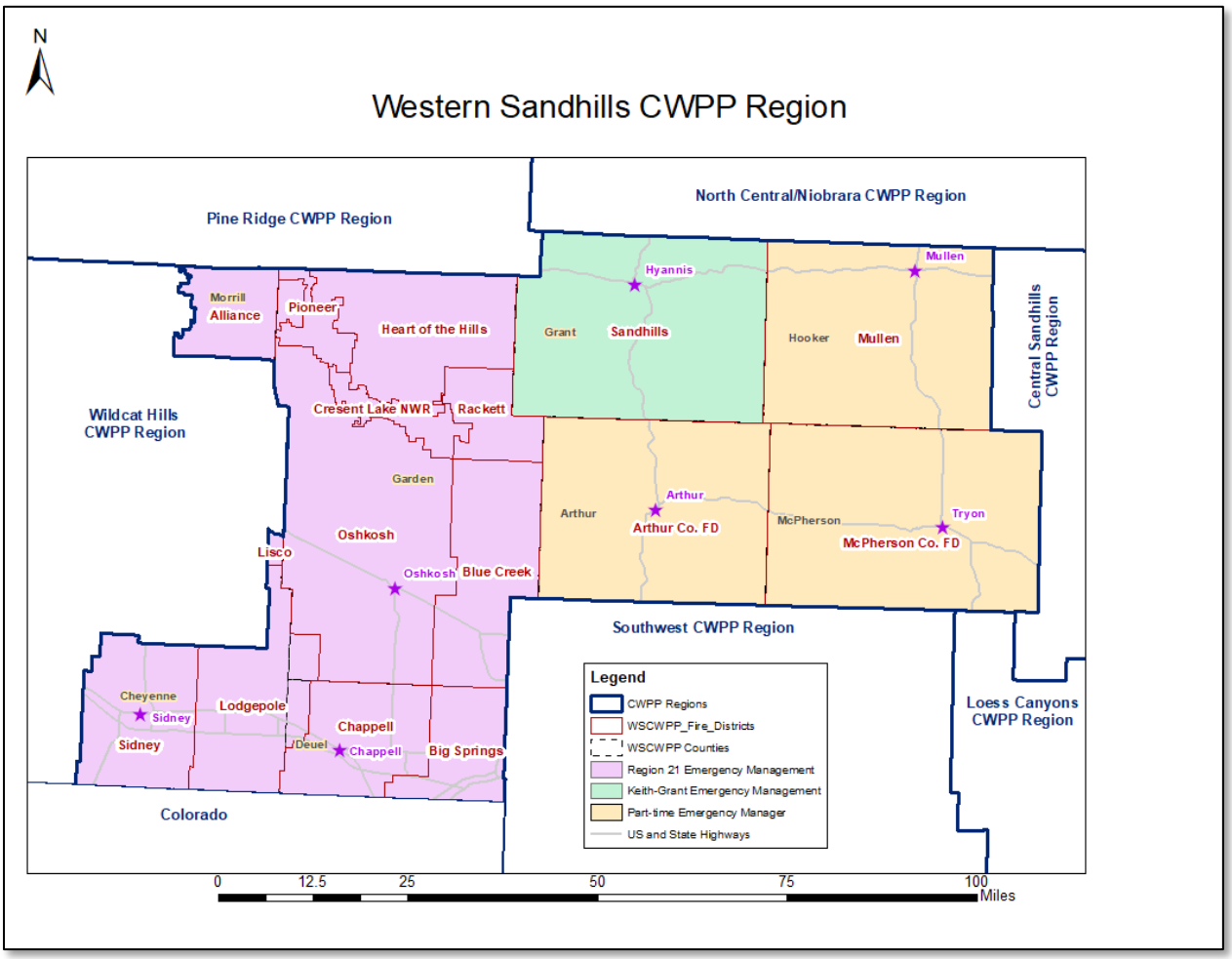
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Western Sandhills CWPP Region
Pine Ridge CWPP Region
North Central/Niobrara CWPP Region
Central Sandhills CWPP Region
Wildcat Hills CWPP Region
Southwest CWPP Region
Loess Canyons CWPP Region
Colorado
Morrill
Alliance
Pioneer
Heart of the Hills
Hyannis
Grant
Sandhills
Mullen
Hooker
Mullen
Cresent Lake NWR
Rackett
Garden
Arthur
Arthur
Arthur Co. FD
McPherson
Tryon
McPherson Co. FD
Lisco
Oshkosh
Oshkosh
Blue Creek
Cheyenne
Sidney
Sidney
Lodgepole
Chappell
Deuel
Chappell
Big Springs
Legend
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WSCWPP_Fire_Districts
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Region 21 Emergency Management
Keith-Grant Emergency Management
Part-time Emergency Manager
US and State Highways
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FACILITATED BY THE

Nebraska Forest Service

IN COLLABORATION AND COOPERATION WITH

ARTHUR, CHEYENNE, DEUEL, GARDEN, GRANT,
HOOKER,MCPHERSON, AND MORRILL COUNTIES

LOCAL VOLUNTEER FIRE DISTRICTS

REGION 21 AND KEITH/GRANT EMERGENCY MANAGEMENT AREAS
COUNTY EMERGENCY MANAGEMENT DIRECTORS

WESTERN SANDHILLS CWPP STEERING COMMITTEE

LOCAL MUNICIPAL OFFICIALS

LOCAL, STATE, AND FEDERAL NATURAL RESOURCES AGENCIES

AREA LANDOWNERS

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Photo courtesy of Doug Whisenhunt

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Name Dixann Krajewski Date: 8-26-19

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Name Thomas L. White Date: October 8, 2019

Hooker County Board of Commissioners

Signature: _____ Title: Chair

Name Boyan Crisp Date: 9-11-19

McPherson County Board of Commissioners

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Name Brett Nason Date: Sept. 11, 2019

Morrill County Board of Commissioners

Signature: _____ **Title:** Chairman

Name Jeff Metz **Date:** 9/10/19

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Western Sandhills Community Wildfire Protection Plan Acronyms

Acronym	Meaning
BLM	Bureau of Land Management
BUL	Biologically Unique Landscape
CWPP	Community Wildfire Protection Plan
FAP	Forest Action Plan
FEPP; FFP	Federal Excess Property Program; Firefighter Property
GIS	Geographic Information System
GPS	Global Positioning System
ID	Identification
LEOP	Local Emergency Operations Plan
MA; MAD	Mutual Aid, Mutual Aid District
MOU	Memorandum of Understanding
NE	Nebraska
NEMA	Nebraska Emergency Management Agency
NFS	Nebraska Forest Service
NGO	Non-Government Organization
NGPC	Nebraska Game and Parks Commission
NNLP	Nebraska Natural Legacy Project
NPPD	Nebraska Public Power District
NRCS	Natural Resources Conservation Service
NRD	Natural Resources District
NWS	National Weather Service
RA	Risk Assessment
RH	Relative Humidity
RR	Risk Reduction
SEAT	Single Engine Air Tanker
SHP	State Historical Park
SRA	State Recreation Area
SRIA	Structural Risk & Ignitability Analysis
USFS	US Forest Service
USFWS	US Fish and Wildlife Service
VFD; RFD; FD	Volunteer Fire Department; Rural Fire District/Dept.; Fire District/Dept.
WMA	Wildlife Management Area
WSCWPP	Western Sandhills Community Wildfire Protection Plan
WUI	Wildland Urban Interface

Western Sandhills Community Wildfire Protection Plan

Introduction

The purpose of this Community Wildfire Protection Plan (CWPP) is to provide a tool for effectively managing fire and hazardous vegetative fuels and to bolster collaboration and communication between the various agencies and organizations who manage fire in the western Sandhills region of Nebraska. Having a CWPP in place allows the Nebraska Forest Service (NFS) to apply for federal grant dollars to cost-share forest fuels reduction treatments in at-risk areas within the boundaries of the CWPP. It also may increase opportunities for counties, municipalities, and rural fire districts to seek grant funding for activities related to fire protection.

Legislative Background

To be eligible for federal funding assistance, the federal government requires states to prepare action plans that lay out a strategy for forest and wildlife conservation. The Nebraska Game and Parks Commission (NGPC) first published the Nebraska Natural Legacy Project (NNLP) in 2005 as the state's first Wildlife Action Plan (updated in 2011). It identified 40 biologically unique landscapes (BULs) to help prioritize where conservation work can best be directed. The Western Sandhills CWPP region lies partially within the Sandhills and Shortgrass Prairie Ecoregions identified in the NNLP. Parts of the Dismal River Headwaters, Middle Loup, North Platte River Wetlands, and Sandhills Alkaline Lakes Biologically Unique Landscapes are found within the CWPP boundary. (See Appendix B).

In accordance with the 2008 Farm Bill's requirement for states to conduct a comprehensive analysis of their forests, in 2011 the NFS published the Statewide Forest Resource Assessment and Strategy, known as the Forest Action Plan (FAP). The FAP was updated in 2015. Priority forest areas were identified throughout the state using the National Land Cover Dataset. This dataset represents 15 land cover and land use types including open water, development, crops, shrubs, grasslands, wetlands, and forests. Part of the Western Platte River Priority Landscape is located within the CWPP boundary. (See Appendix C).

The Healthy Forest Restoration Act (US Congress, 2003) requires that a CWPP be developed collaboratively, that it identify and prioritize areas for fuels reduction and methods to reduce fuels on those areas, and that it include recommendations about strategies to reduce structural ignitability. This CWPP addresses Healthy Forest Restoration Act requirements and other needs identified by stakeholders.

Plan Integration

The components of the State Emergency Operations Plan are patterned after the National Response Plan. The Nebraska Emergency Management Agency (NEMA) prepared a basic plan that details Nebraska's operational functions approach to the response and recovery phase of emergency management. It defines the roles and responsibilities of the responding and supporting agencies, and organizations; and defines broad policies, plans and procedures.[1]

Each county has its own Local Emergency Operations Plan (LEOP). The content of these plans is defined by statute, which stipulates that each county's local LEOP consist of specific components, including operations, organization and responsibilities, functional annexes supporting activities critical to emergency response and recovery, technical information on response procedures, protective measures unique to a hazard, and methods for use in emergency operations. It is the responsibility of each local Emergency Management Agency to maintain the LEOP according to the guidance from the State.[1] Wildfire is not discussed in detail in most LEOPs. Each local LEOP contains an "Annex F" that covers fire services. This includes a listing of county fire departments and mutual aid partners, as well as equipment lists. Fire department information is listed in Appendix G. Mutual aid associations are listed in Appendix F.

Nebraska also has a state Hazard Mitigation Plan, which establishes the policies, plans, guidelines, and procedures for the Hazard Mitigation Program in Nebraska. NEMA coordinated with the Nebraska's Natural Resource Districts (NRDs) and counties to promote the creation and updates of multi-jurisdictional plans

throughout the state.[2] Arthur and McPherson Counties are included in the Twin Platte NRD's plan. Grant and Hooker Counties are included in the Upper Loup NRD's plan. Garden and Morrill Counties are included in the North Platte NRD's plan. Deuel and Cheyenne Counties are included in the South Platte NRD's plan. Appendix E contains links to these plans.

This CWPP strives to coordinate with existing state and local plans and provides specific detail on wildfire hazards, areas at risk from wildfire, emergency operations and capacity, and critical infrastructure. It includes an action plan addressing wildfire-specific issues and includes a risk assessment procedure, risk reduction measures, preparedness recommendations, training and education information, fuels mitigation strategies, and a monitoring and evaluation plan.

Goals and Objectives

State Action Plan Goals and Objectives

This CWPP and the results of its implementation relate directly to all of the FAP goals and objectives:

1 – Actively and sustainably manage forests
2 – Restore fire-adapted lands and reduce risk of wildfire impacts in forests and adjacent communities
3 – Identify, manage and reduce threats to forest and ecosystem health
4 – Protect and enhance water quality and quantity
5 – Improve air quality and conserve energy
6 – Assist communities in planning for and reducing wildfire risks
7 – Maintain and enhance the economic benefits and values of trees and forests
8 – Protect, conserve and enhance fish and wildlife habitat
9 – Connect people to trees and forests and engage them in environmental stewardship activities
10 – Manage and restore trees and forests to mitigate and adapt to global climate change

Sustainable forest management reduces wildfire impacts in the region's riparian forests and adjacent communities, and reduces threats to ecosystem health. Healthy forests and grasslands, in turn, protect air and water resources and fish and wildlife habitat, and these ecosystems are better able to cope with a changing climate. Communities that plan for and reduce wildfire risks and engage in environmental stewardship activities may also reap both the direct and indirect economic benefits of healthy forests in fire-adapted landscapes.

Implementation of this CWPP relates directly to the NNLP goals of conserving natural communities, keeping common species common, and protecting at-risk species. Sustainably managed, fire-adapted forests include a diversity of habitats for both at-risk and common species. Restoring unnaturally dense forests to a more natural mosaic vegetative pattern benefits both wildlife and human communities.

CWPP Goals and Objectives

The steering committee other stakeholders identified the following goals and objectives for this CWPP:

1. Identify hazards and areas at risk
    a. Identify factors associated with wildfire risk
    b. Evaluate areas to determine risk
2. Reduce wildfire risk to identified areas
    a. Partner with landowners, land managers, fire personnel, and natural resources agencies and organizations to incorporate their concerns and objectives in fire management programs
    b. Identify, prioritize, and treat hazardous fuels
    c. Suppress unplanned ignitions to protect private property and natural and cultural resources from unacceptable impacts attributable to fire
    d. Support emergency response through training and acquisition of equipment

3. Promote wildfire prevention and education
    a. Increase public awareness of wildfire and damage from uncharacteristic wildfires
    b. Educate the public in *Firewise®* landscaping and construction techniques
    c. Reduce fire hazards through construction of defensible fuel spaces that protect communities and resources
    d. Encourage communities to develop strategies to reduce wildfire risk; provide communities with tools to address human-caused fires
    e. Encourage integration of fire prevention into schools; address accidental ignitions caused by children
4. Restore fire-adapted ecosystems
    a. Provide training to enable rapid assessments of burned lands and the implementation of stabilization techniques
    b. Encourage land managers to control non-native invasive plant species and to actively manage prolific and aggressive native species such as eastern redcedar
5. Enhance communications among fire departments, agencies, and organizations involved with fire management
    a. Train fire departments in the use of the V-TAC and UHF mutual aid radio channels
    b. Educate fire departments and 911 dispatchers about notifying assisting mutual aid departments which V-TAC or UHF channel will be used when arriving at an event
6. Establish a monitoring and evaluation process
    a. Annually evaluate the CWPP implementation effectiveness and recommend changes as needed
    b. Conduct monitoring of selected collaboratively developed projects and activities to assess progress and effectiveness

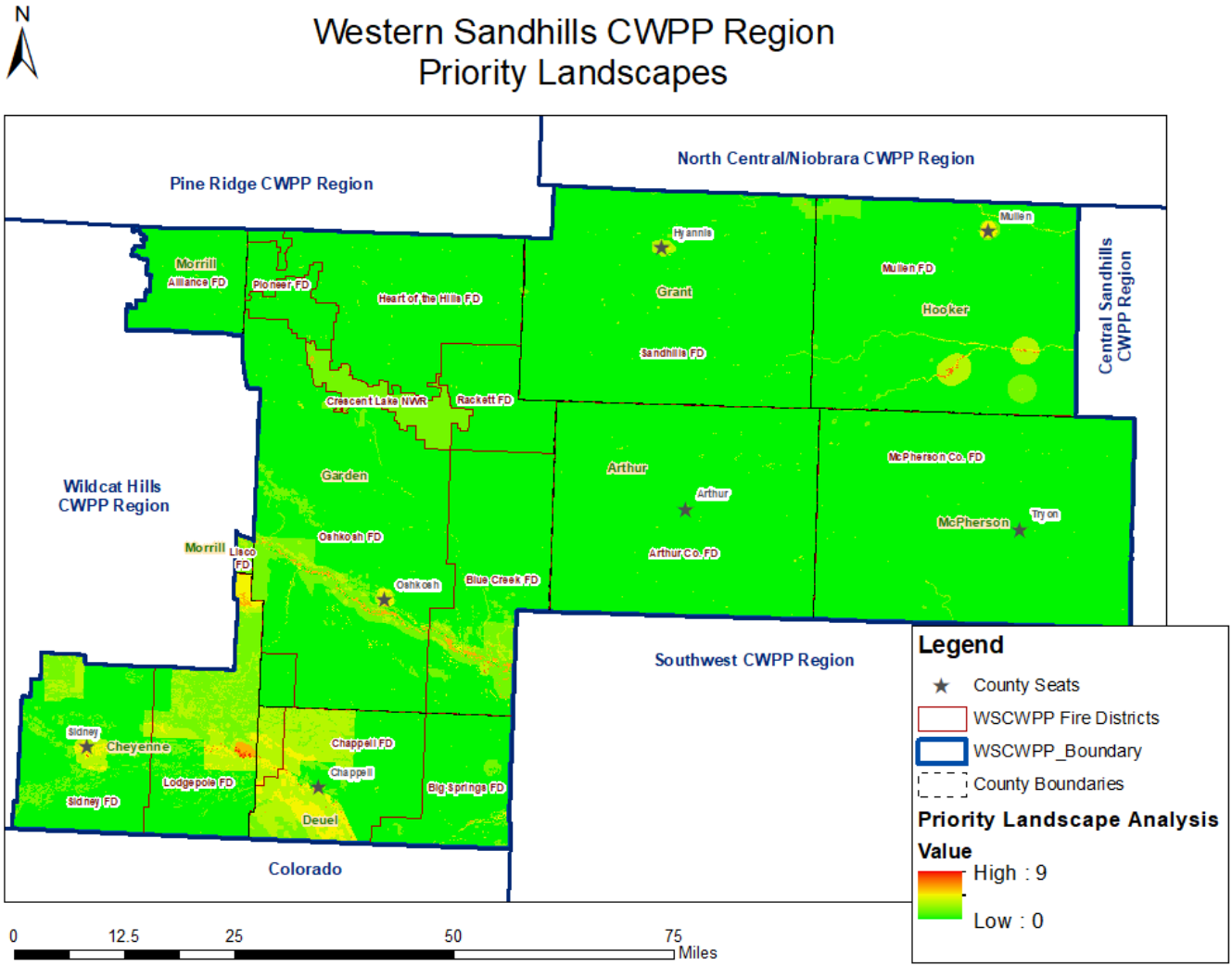
Priority Landscapes

At the state level, the FAP identified Priority Landscapes to help focus effort and funding on landscape-scale projects (Map 1). The area within the CWPP boundary contains a range of landscapes, from farmland and riparian woodlands to Sandhills mixed grass and short grass prairies. Within each county, local stakeholders have identified "Areas of Concern" – specific areas that are most at risk for wildfire within the larger landscapes. A map of these Areas of Concern appears in Appendix A.

Some of the CWPP counties have experienced large, catastrophic wildfires. Between 2000 and 2018, CWPP area volunteer fire departments reported 31 fires greater than 499 acres in size that burned over 112,000 acres. Because not all fire departments report every year, the actual numbers are likely much higher. In March, 2015, a lightning-caused wildfire in the CWPP region started east of Arthur, spread along the Arthur/McPherson County line and into Keith County, burning 30,000 acres.[3] In July and August, 2012, lightning caused 18,000 and 19,000 acre fires in the Garden County and Rackett Fire Districts, respectively.[4]

These incidents demonstrate that intense fire behavior can start in remote areas, move aggressively over large expanses, and threaten population centers. For this reason the CWPP planning team has designated the entire CWPP region as Wildland Urban Interface (WUI). Treatment to reduce fuels will help lessen the risk of wildfire within the WUI. Once the CWPP is in place, the NFS can utilize federal grant funding to cost-share fuels reduction treatments throughout the CWPP region.

Unnaturally dense and unhealthy woodlands and encroachment of eastern redcedar into grasslands continue to create extreme wildfire risk. Drought cycles are predicted to occur with increasing frequency. Communities can protect structures by reducing their ignitability, reducing the surrounding woody fuels, and improving access for emergency equipment.



Map 1: The principal Priority Landscapes in this CWPP region are found in Deuel, Cheyenne, Garden, and Hooker Counties, but other parts of the CWPP region also contain areas in which hazard reduction activities can be targeted. Specific Areas of Concern maps are in Appendix A.

Process

The first step in the CWPP planning process was to establish a core working group of stakeholders to form a steering committee and planning team. Information about the purpose of the CWPP and an invitation to participate in the process was given to each of the eight county boards within the Region. Counties appointed individuals to the steering committee to help guide the process.

An outreach notice was sent to stakeholders and other potentially interested parties, including fire districts and emergency management personnel within the CWPP region, municipal governments, natural resources districts, federal and state agencies, state legislators, and non-government organizations. The steering committee was put together from responses to this outreach. Containing a mix of county board appointments and volunteers, it includes representatives from local fire departments, local and state emergency management, NRDs, the NFS,

NEMA, the Natural Resources Conservation Service (NRCS), NGPC, the US Fish and Wildlife Service (USFWS), and the Bureau of Land Management (BLM).

The steering committee defined the region's WUI. For planning purposes, each county within the CWPP boundary is considered a WUI community. County officials, fire department personnel, and steering committee members designated areas of concern within each county that are particularly at-risk from wildfire. The committee established goals and objectives and provided the locally-focused framework for the CWPP.

The NFS sent a questionnaire to all of the fire departments in the CWPP region asking for current contact information, list of equipment, and pertinent issues, concerns, and priorities. Six of the 14 fire departments returned the survey. Responses to this survey appear in Appendix G, along with information obtained from Annex F of each county's LEOP for all fire departments located entirely or partially within the CWPP boundary. The fire department survey and distribution list appear in Appendix H.

A media release describing the planning process was sent to local newspapers and radio stations providing contact information and encouraging public input. Information was posted on social media pages and a flyer was posted in county and municipal offices and in popular gathering places to extend the outreach. The stakeholder list, outreach letters, and media releases appear in Appendix I.

Feedback from the initial outreach was incorporated into a draft document, along with background information, risk assessment, and an action plan. After review by the steering committee, the draft was released for a 30-day public review period. Comments on the draft CWPP were incorporated into the final document which was then sent to the county boards for signature. Copies of the final document were sent to each county for distribution to local officials. The plan is also available online at https://nfs.unl.edu/documents/CWPP/Western.pdf.

Overview

This section contains background information common to all counties within the CWPP region. Information specific to only certain areas is included in the county sections.

Landforms, Climate and Weather

The Western Sandhills CWPP region lies within the Sandhills and Shortgrass Prairie Ecoregions. This semiarid region sits atop the Ogallala Aquifer.

Nebraska has a continental climate with cold winters and hot summers. The National Climatic Data Center reported 2012-2013 as central and western Nebraska's warmest, driest years on record, with some areas receiving less than half of normal rainfall. In recent decades droughts have become more severe, with peaks about every six years. Extreme drought and wildfire years occurred in 1988, 1994, 2000, 2006 and 2012. In 2018, Nebraska did not follow that pattern, and was wetter and cooler than normal, with some areas producing a high amount of fine fuels that created heavier-than-normal fuel loads during the following months. Although Nebraska did not report large wildfires in 2018, many parts of the western United States did experience record heat and wildfires during the 2018 fire season.

Weather data was obtained from the University of Nebraska High Plains Regional Climate Center[5] and Iowa State University.[6] Weather factors, including temperature, precipitation, humidity, and wind, define fire season, as well as fire direction and speed. Table 1 provides selected weather information for CWPP area counties.

There are two fire seasons in this area. The early fire season occurs from snowmelt and the last spring frost (when the previous year's cured vegetation dries) until early May, then eases as vegetation greens up. The late season begins in mid to late summer as fine fuels, such as grasses and forbs, begin to dry. In most years the late season extends to mid-November, coinciding with agriculture crop harvests, leaf drop, and curing of prairie

grasses. Wet springs can delay the onset of the early season, but they produce more fine fuels in ditches and across rangelands that, in late summer and fall, become tinder for sparks that can start wildfires. In drier years fine fuels can start curing by mid- to late July, but there is less growth, and consequently fewer fine fuels to catch sparks from trains, farm equipment, or motorists.

	April			July			October		
County	Max. Temp.	Precip.	Min. RH	Max. Temp.	Precip.	Min. RH	Max. Temp.	Precip.	Min. RH
Arthur	60.55	2.08	27	87.8	3.28	37	63.26	1.31	29.5
Cheyenne	60.23	1.75	26	88.34	2.58	29.5	63.44	1.18	26
Deuel	61.76	2.03	26	88.72	2.72	32	64.67	1.24	29.7
Garden	60.7	1.88	26.5	87.79	2.63	38.3	63.66	1.27	27.7
Grant	59.26	2.16	27	86.7	3.25	37	62.42	1.36	29.5
Hooker	59.56	2.47	28	86.8	3.33	39.7	62.97	1.46	32.7
McPherson	60.4	2.3	28	87.39	3.18	39.7	63.58	1.47	32.7
Morrill	60.13	1.8	26.5	88.17	2.28	38.3	63.11	1.17	27.7

Table 1: Average maximum temperatures (degrees F), precipitation (inches) and median minimum relative humidity (percent) 1982-2018 for April, July, and October for Western Sandhills CWPP counties. RH data interpolated from selected weather stations.[5]

Wind is a prime factor in fire spread, even where fuels are light and/or discontinuous as it is in much of the plan area. Many areas are more than half agriculture and grass fuels. Wind rosettes for April, July, and October from four stations in or near the plan area – Alliance, Ogallala, Sidney, and Thedford – are in Appendix D.

Vegetation and Natural Communities

Native vegetation in the Western Sandhills CWPP Region is primarily Sandhills prairie with a mosaic of mixed-grass prairie and short-grass prairie in the southern part of the region and mixed deciduous forests in the drainages.[7] Eastern redcedar occurs along the Dismal River and in some areas has encroached into the prairies and deciduous woodlands. Sandhills lakes with wetland vegetation are widespread in Grant, Arthur, the north part of Garden and the northeast corner of Morrell Counties. Agricultural fields occupy much of the area along and south of the North Platte River and along the South Platte River. See Appendix A, Map 2.

Land Use

There are about 3,807,360 acres in the Western Sandhills CWPP region, which includes all of Arthur, Deuel, Garden, Grant, Hooker, and McPherson Counties, the Lisco Fire District and the northeast corner of Morrill County, and the southeast part of Cheyenne County. Public lands include 45,849 acres in the Crescent Lake National Wildlife Refuge (USFWS), 3,389 acres in eight Wildlife Management Areas (WMAs) and two State Historical Parks (SHPs) managed by the NGPC; and 708 acres in 13 scattered parcels managed by the BLM. There are also approximately 130,351 acres in Nebraska School Lands.[8] The balance of the land in the region is privately owned. The Nature Conservancy holds 2,145 acres in two conservation properties. Agriculture (livestock and crops) is the predominant use on private and school lands.

Residential, commercial, and small manufacturing land uses dominate the region's 10 incorporated cities and villages and their immediate surroundings. Land use is primarily agricultural in the region's 14 unincorporated communities. Rural residential land use exists in conjunction with agricultural operations. According to US census data, there are just over 6,168 permanent residents within the six counties entirely within the CWPP region. There are an estimated 8,684 residents within the CWPP boundary in Cheyenne County and an estimated 50 residents within the CWPP boundary in Morrill County.

All counties in the CWPP region have county zoning plans in place. There are currently no restrictions in any of the counties for new building construction in fire-prone areas.

The primary recreational activities in the region are hunting and fishing. Crescent Lake NWR is open to hunting, fishing, and birdwatching and sees 7,500 visitors annually.[9] Ash Hollow SHP has over 22,000 visitors annually.[10] Although no visitor numbers are available for state WMAs within the region, NGPC staff reports significant use by anglers and hunters at Clear Creek and some use at Fry Lake. Hundreds of hunters visit private lands throughout the region annually.

Infrastructure

Webster defines infrastructure as: "the system of public works of a country, state, or region; also: the resources (such as personnel, buildings, or equipment) required for an activity." In the Western Sandhills CWPP region, infrastructure includes county, state, and federal roads and bridges, communications systems, the power grid, water systems, hospitals, schools, parks and fairgrounds, public administration buildings, fire halls, public officials, law enforcement officers, and fire personnel. These people, systems, and structures are critical to regional functionality. One of the goals of community planning is to protect the basic physical and organizational structure of communities. This infrastructure, in turn, protects citizens.

Regional infrastructure expedites access to a fire by emergency responders, allows them to communicate with one another and the public, facilitates evacuations and support functions, and assists recovery efforts after the event. It is important for both local and out-of-area responders to know what facilities and resources are available and where they are located.

Emergency evacuations depend on infrastructure. Immediate evacuation destinations are likely to be in areas away from the fire that have water, power, and room for gathering. Often fairgrounds or parks make good short-term destinations, as they have large parking areas, restrooms, and electricity. In a wildfire evacuation scenario, local officials will designate immediate evacuation destinations. During prolonged evacuation periods or when homes or access routes have been destroyed, longer range planning is needed. The Department of Homeland Security's website https://www.ready.gov/evacuating-yourself-and-your-family offers some ideas.

Irrigation Districts

On the North Platte River, the Lisco, North River, Lyons, Oshkosh, Midland-Overland, Paisley, Union, Hooper, Blue Creek, and Graf irrigation districts lie all or partly within the Western Sandhills CWPP Region in Garden County. They include the Lisco, North River, Spohn, Lyons, Oshkosh, Paisley, Union, Blue Creek, Hooper, and Graf Canals (see Appendix A, Map 6).

On the South Platte River, the Western Irrigation District and its Western Canal lie partly within Deuel County. Portions of the Colorado-based Highline Canal, Peterson Ditch, and State Line Ditch reach into southern Deuel County (see Appendix A, Map 7).

Prescribed Fire and Prescribed Burn Associations

In recent years, use of prescribed fire has increased as a method of keeping eastern redcedar encroachment in check, particularly in grasslands. Practitioners include individual landowners, groups of landowners in organized prescribed burn associations, non-profit organizations, and public agencies. There are no active prescribed burn associations in the Western Sandhills CWPP region.

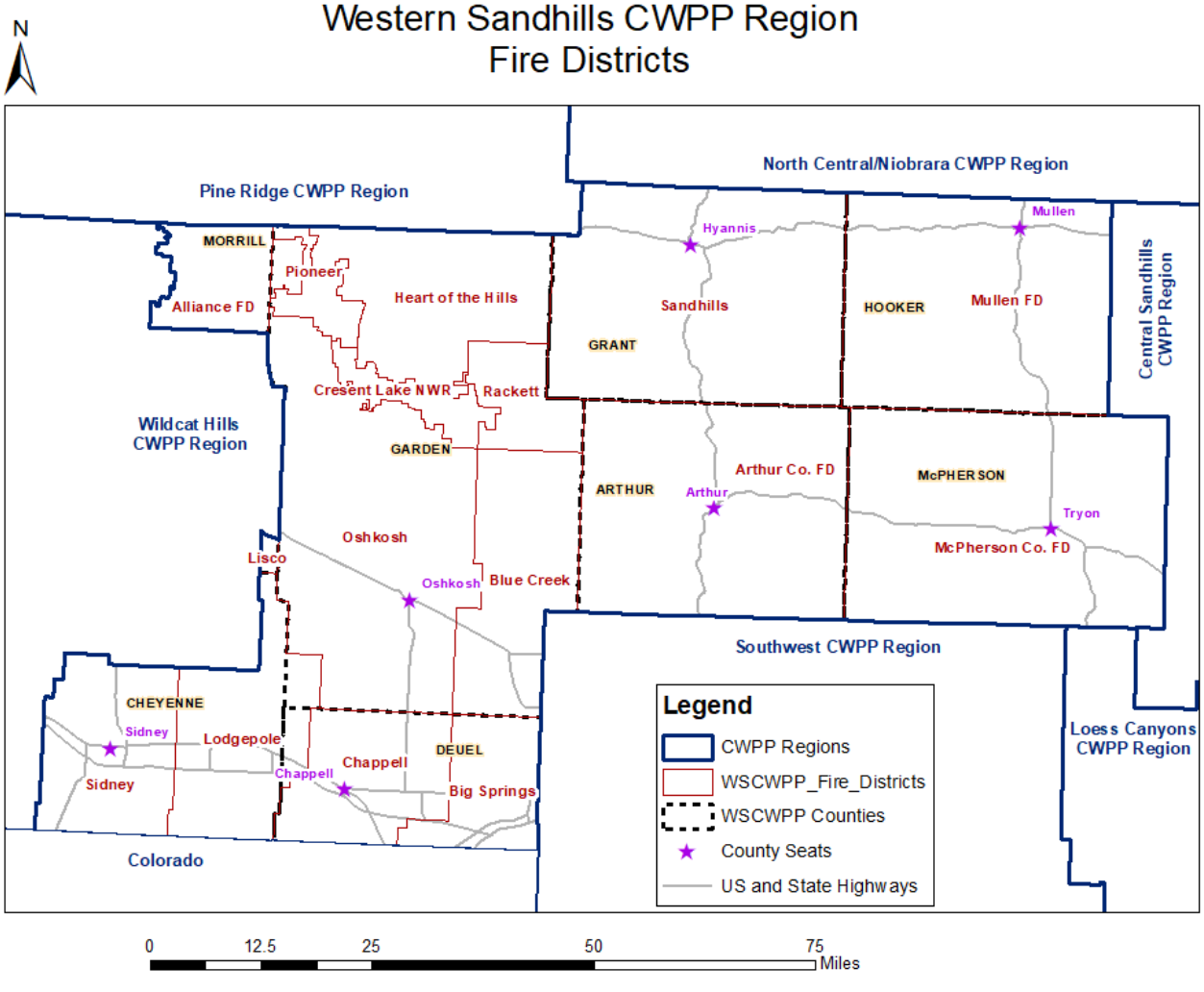
Wildland Urban Interface

The WUI is defined as areas where homes and other structures are built near or on lands prone to wildfire. According to the "Ready, Set, Go!" program, managed by the International Association of Fire Chiefs, the WUI is not necessarily a place, but a set of conditions that can exist in nearly every community. It can be a major

subdivision or it can be four homes on an open range. National Fire Protection Association literature states that conditions include, but are not limited to, the amount, type, and distribution of vegetation; the flammability of the structures in the area and their proximity to fire-prone vegetation and to other combustible structures; weather patterns and general climate conditions; topography; hydrology; average lot size; and roads. The WUI exists in every state in the country, and in every county/community within the CWPP boundary. Site-specific WUI issues are listed in each county section of this CWPP.

Fire Districts

There are 14 rural fire districts all or partially within the CWPP boundary. These are shown on Map 2 below. Crescent Lake NWR maintains two Type 7 engines and a UTV with a 60-gallon water tank at the refuge.



Map 2: Fire Districts all or partly within the Western Sandhills CWPP Region.

Wildfire Hazard: History and Impacts

Historic Role of Fire

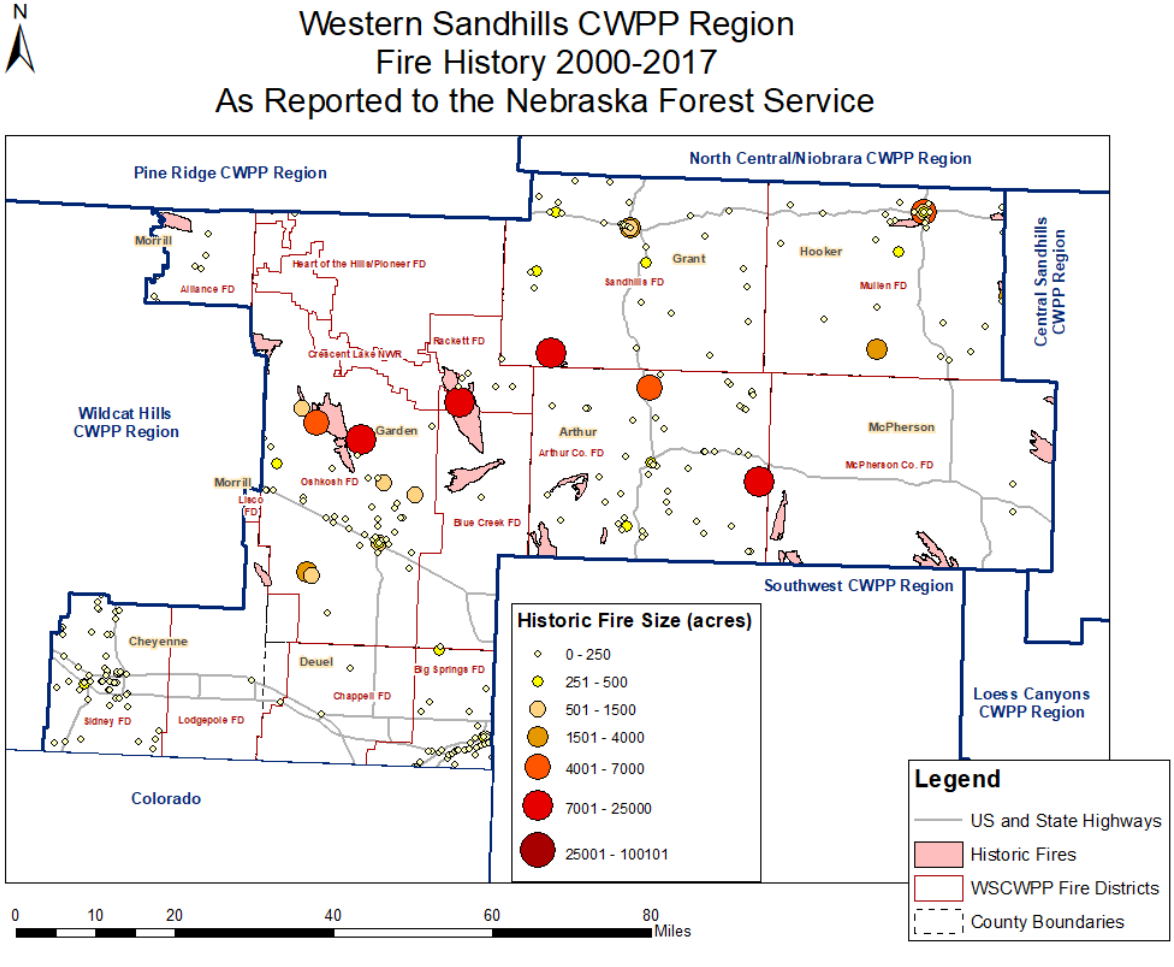
Prior to European settlement, large fires (started by lightning or indigenous people) were common, and these fires kept the prairies free of most woody vegetation. Table 2 shows the prairies in the Western Sandhills may have experienced a mean replacement fire interval of 11 to 15 years prior to Euro-American influence. However, since settlement, people have become increasingly adept at suppressing wildfire. Without fire, over time, forests became densely overcrowded and woody vegetation encroached on prairies.

		Fire Regime Characteristics			
Vegetation Community	**Fire Severity**	**% of Fires**	**Mean Interval (years)**	**Min. Interval (years)**	**Maximum Interval (years)**
Nebraska Sandhills Prairie	Replacement	58	11	2	20
	Mixed	32	20	n/a	n/a
	Surface or Low	10	67	n/a	n/a
Mixed Grass Prairie	Replacement	67	15	8	25
	Mixed	33	30	15	35
Short Grass Prairie	Replacement	87	12	2	35
	Mixed	13	80	n/a	n/a

Table 2: Fire intervals for the Nebraska Sandhills Prairie, Mixed Grass Prairie, and Short Grass Prairie types are shown above.[11]

Local Fire History

Nebraska is no stranger to extremely large fires. In 1865 the US Army and ranchers intentionally set a 300 mile wide prairie fire during a dispute with Native Americans. The fire blackened the entire section of Nebraska south of the Platte River and West of Fort Kearney. It was visible from Colorado and Kansas, and eventually burned all the way to Texas. More recently, in 1999 about 79,000 acres of Sandhills prairie burned along a 40-mile front from north of Mullen to Thedford, killing one firefighter.[12] According to the NFS fire database, in 2006 about 9,600 acres burned near Halsey. An 11,000 acre fire near Thedford in 2011 seriously injured two Valentine firefighters. In 2012 nearly half a million acres burned in the nearby Niobrara and Pine Ridge CWPP areas.



Map 3: Some of the larger fires reported in the CWPP area since 2000 are shown in the map above.

Wildfires exceeding 4,000 acres in size have occurred in nearly all of the CWPP counties. The largest fires, all caused by lightning, reported to the NFS were 30,000 acres in Arthur, McPherson, and Keith Counties in March, 2015; 19,000 acres in the Rackett Fire District in August, 2012, and 18,000 acres in Garden County in July, 2012. Map 3 shows the locations of some of the larger fires reported in the CWPP area since 2000.

In 2012, many local fire departments in the Western Sandhills CWPP area provided support for other large fires in Nebraska, including the Pine Ridge and the Niobrara Valley wildfire complexes that burned nearly half a million acres. As observed that year, and evidenced in historical research, rivers are not always a barrier to fire spread.[13]

Some fire districts voluntarily report their annual fire response data to the NFS. Table 3 shows the fire data reported by fire departments from 2000 to 2017.[14] Because the fire districts vary in their level of reporting, there is no accurate, comprehensive fire history available for the CWPP area.

Fires Reported 2000-2017							
Department	**# Fires Human**	**# Acres Human**	**# Fires Lightning**	**# Acres Lightning**	**Total # Fires**	**Total # Acres**	**Mutual Aid Responses**
Alliance	256	4,291	42	1297	298	5,588	32
Arthur	21	6,352	38	23,775	59	30,127	18
Big Springs	109	1,548	8	112	117	1,660	24
Blue Creek/Lewellen	13	42	2	80	15	122	1
Chappell	31	238	2	6	33	244	3
Heart-of-the-Hills/Pioneer	19	1,645	32	1,504	51	3,149	26
Lisco/Garden Co.	9	745	9	387	18	1,132	16
Lodgepole	11	188	0	0	11	188	0
Mullen	23	8,434	51	10,578	74	19,012	29
Oshkosh/Garden Co.	30	4,058	19	25,850	49	29,908	51
Rackett	5	129	6	19,500	11	19,629	8
Sandhills	48	17,151	23	1,135	71	18,286	29
Sidney	82	748	12	32	94	780	2
Total	**657**	**45,569**	**244**	**84,256**	**901**	**129,825**	**239**

Table 3: Fires reported by Western Sandhills CWPP fire departments between 2000 and 2017. Departments reported a total of 82,113 volunteer hours for this period. Only departments that reported are listed. Some departments did not report every year. Actual numbers are higher.

Fire Hazard

In the years since European settlement, exclusion of low-intensity ground fires, limited forest management, and prolific regeneration of eastern redcedar have increased the fire danger in prairies and woodlands. This, combined with severe drought, created conditions conducive to catastrophic wildfires in 2006 and 2012.

A statewide map of local mitigation planning areas is included in Appendix A. The North Platte, South Platte, Twin Platte, and Upper Loup NRDs are the designated local mitigation planning areas for the Western Sandhills CWPP area. Each of these planning units has its own Multi-Jurisdictional Hazard Mitigation Plan that includes a discussion of wildfire hazard. Appendix E contains links to these plans. This CWPP builds on these plans to address specific wildfire concerns.

Individual locations of particular concern are identified in each community-specific section of this CWPP. Planning team members and local fire departments identified specific areas of concern for the CWPP area. These locations include the edges of municipalities and wooded areas along rivers and creeks where there are homes

and other structures. Many of these areas have limited access and/or water availability. The team identified area-wide high-risk ignition sources such as dense undergrowth and, depending on time of year, dry weather conditions when fires can start from lightning and hot farm machinery. They also underscored the importance of addressing fuel load reduction in community mitigation plans. See Appendix A, Map 4.

Economic Impacts

Excessive fuel loading can affect local economies in many ways. It reduces available forage, and therefore the pasture carrying capacity, for livestock and wildlife. If woody fuels are removed by uncontrolled, high intensity wildfire, other resources are affected. Intense fires may induce hydrophobic soils, which significantly increase runoff and erosion in steep terrain. Loss of grazing capacity and decreased water quality can be long-lasting problems for landowners whose livelihoods depend on livestock and hunting income.

A proactive approach to reducing hazardous fuels can provide jobs and generate valuable wood products such as lumber, posts, and biomass. Mechanically thinning forests reduces the hazard and risk of intense wildfire, can improve grazing capacity and wildlife habitat, and can increase the amount of precipitation that reaches streams, lakes, and the water table. Adherence to the *Forestry Best Management Practices for Nebraska* (https://nfs.unl.edu/documents/ruralforestry/NebraskaBMP.pdf) by those conducting mechanical thinning operations can reduce the potential for soil erosion from equipment use.

Emergency Operations

Responsibilities and Mutual Aid Agreements

Volunteer fire departments are the first line of defense against wildfires on private and state lands within each community. During large wildfires, they rely on mutual aid agreements with neighboring jurisdictions. The Arthur, Big Springs, Blue Creek/Lewellen, Chappell, Lisco, and Oshkosh fire departments are all members of the Southwest Mutual Aid District. Arthur, McPherson, Mullen, and Sandhills fire departments are in the Sandhills Mutual Aid Association. Alliance, Heart-of-the-Hills/Pioneer, Lisco, Oshkosh, and Rackett are in the Central Panhandle Mutual Aid Association. Mullen is in the Cherry Co. Mutual Aid Association. Alliance is in the Pine Ridge Mutual Aid Association. McPherson Co. VFD is in the Mid-Plains Mutual Aid Association. See Appendix F.

Each county has an Emergency Management protocol. Deuel, Cheyenne, Garden, and Morrill Counties are under Region 21 Emergency Management. Grant County is part of the Keith/Grant Emergency Management jurisdiction. Arthur, Hooker, and McPherson Counties have their own part-time emergency managers and are not affiliated with regional emergency management areas.

In addition to notification by Sheriff's Department personnel and/or dispatch, Emergency Management areas have notification from "Code Red" that allows them to develop groups that can be called in an emergency situation for notification of evacuations, hazardous material incidents, and any emergency notification, including wildfire. This allows notification of a large geographical area or a group of people.

A state ID card system for emergency response personnel and equipment was introduced prior to the wildfires of 2012. This identification and credentialing system allows first responders (agencies, personnel, and equipment) to more efficiently respond to incidents. It streamlines the incident check-in process and tracks time spent on an incident for both personnel and equipment. The ID cards use bar codes that identify equipment, people and their qualifications, and can track volunteers.

The Mobile Express program is used to track an incident. The Rapid Tag program helps track volunteers. A volunteer's driver's license is swiped and the data used to print an identification card which is then used by Mobile Express to track the volunteer. The program can also be used to generate a printed "Battle Book" that lists equipment (with picture, description, and ID card) and personnel so that first responders can check into an incident via radio without having to physically check in. Training for this system is ongoing statewide.

Staging Areas and Safety Zones

The forested drainages in the CWPP region are separated by wide expanses of grasslands and farm ground. There are abundant staging area locations in the uplands away from the drainages. Grazed pastures, green alfalfa fields, and fallow farmland can provide staging areas away from forested areas. Specific staging area information is listed in each county section for those who provided it. Fairgrounds and city parks are generally good locations, depending on the particular location of a wildfire. Safety zone locations will depend upon the wildfire location and characteristics.

Roads/Bridges

In addition to the federal and state highways, the region is served by a network of county-maintained roads. Ranch trails provide additional access for emergency vehicles. Restricted bridges and roads which could limit truck/lowboy passage have not been mapped. Developing such a map has been identified as a need that should be addressed (see *Action Plan* section).

Communications

Gaps in cellular service are widespread across parts of the western Sandhills. Some radio compatibility issues were addressed after the 2012 wildfire season. Location-specific information about communications is listed in each county section of this CWPP for those entities that responded to requests for information.

Capabilities and Capacity

A listing of apparatus and staffing for each fire district is included in Appendix G. Some districts have agreements with outside agencies or county roads departments for assistance with heavy equipment.

Through the Federal Excess Property Program (FEPP), a cooperative effort with the U.S. Forest Service, the NFS acquires and reconditions fire vehicles which are no longer needed by the federal government. These vehicles are loaned to rural fire districts, which are responsible for maintenance. When no longer needed, the vehicles are returned to the NFS and are either re-assigned or sold, with the proceeds being returned to the US Treasury. In 2018 there were 821 pieces of FEPP equipment in use by 285 rural fire districts across Nebraska. In the counties covered by the Western Sandhills CWPP, there are 24 pieces of FEPP equipment, valued at $3,384,500 and housed at 11 fire stations and substations.

This program allows fire districts to obtain essential fire-fighting equipment at an affordable price. The NFS Fire Shop can also provide cooperating fire districts resources to reduce vehicle maintenance costs. This includes securing parts for vehicles and providing complimentary maintenance checks. Mechanics can also provide routine vehicle maintenance at the NFS Fire Shop or fire districts may use a trusted local mechanic. Two NFS mobile repair units are available to respond to the maintenance needs of cooperating fire districts. These units can provide routine repairs, as well as on-site support for cooperating districts in the event of catastrophic fires.

The Wildfire Control Act of 2013 enabled the establishment of Single Engine Air Tanker (SEAT) bases in Nebraska. Nebraska has a long history of utilizing aerial applicators for fire suppression, and the addition of permanent bases further enhances fire aviation and initial attack capabilities. SEAT bases are staffed by NFS personnel during the fire season, working with a SEAT on contract to Nebraska through its partners at NEMA. Permanent SEAT bases are located at Valentine, Chadron, Alliance, and Scottsbluff. In addition, a mobile SEAT base to support operations at airports without a permanent base is completed and a second mobile base is planned. The SEAT provides critical observation and access for remote areas. Tanker support is critical for locations away from towns and perennial water supplies such as lakes and rivers.

Training

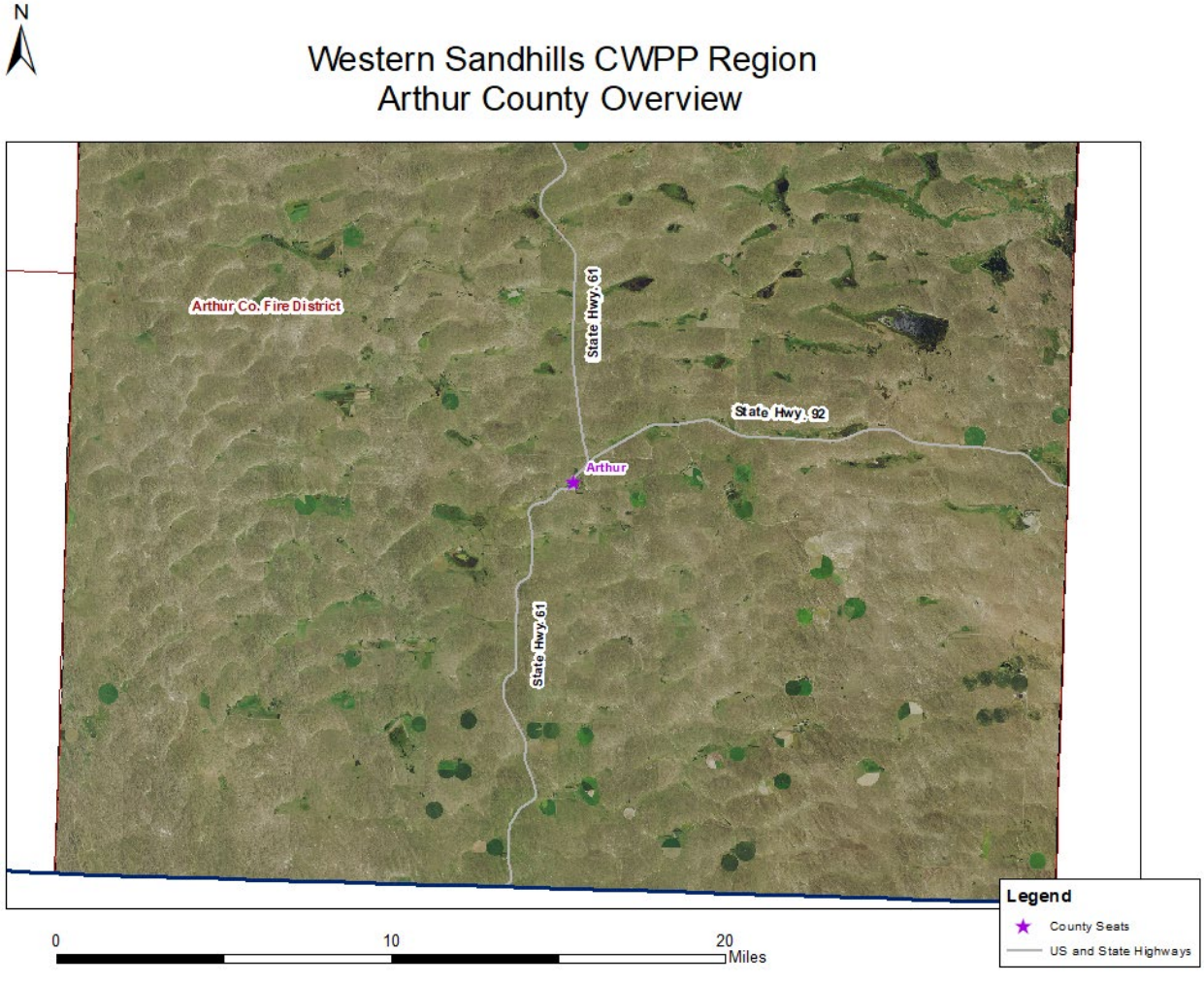
The NFS and NEMA provide wildland fire training through classes in numerous communities across the state as well as mutual aid schools and State Fire School attended by thousands of people each year. In addition, the NFS sponsors the Nebraska Wildland Fire Academy, held annually in April at Fort Robinson SP. Launched as an interagency effort by the NFS and the USFS, the Academy provides opportunities for Nebraska volunteer firefighters to attend nationally-recognized wildland fire and incident management training at little or no cost, on a schedule that doesn't require them to be away from home more than what is already required by their volunteer efforts. It utilizes the expertise of local, state, and federal

firefighters to ensure the fire training needs of Nebraska and the surrounding region are met. It also enables local volunteers to enter the national red card system and develop certifications that are recognized across the nation. Classes cover a variety of topics ranging from beginning to advanced firefighting techniques and Firewise® landscaping and construction to leadership and educating others about fire prevention. The classes offer flexibility and can be fine-tuned to meet the needs of local fire departments. NFS delivered and sponsored course hours grew from just 73 in 2007 to 91,421 in 2018. Wildland fire instructors are based in Ainsworth, Chadron, and Lincoln.

The Nebraska State Fire Marshal Training Division works in conjunction with the NFS in providing training to fire departments. For many years they have provided training to thousands of firefighters instructing S130/S190/S131/S290 NWCG classes.

Community-Specific Considerations

ARTHUR COUNTY
718 sq. miles
2017 population: 457



Community Profile

Arthur County lies in the south central part of the CWPP region. It is bounded on the east by McPherson County, on the north by Grant County, on the west by Garden County, and on the south by Keith County in the Southwest CWPP region. The only incorporated municipality is the county seat of Arthur (pop. 116), located near the center of the county. Bucktail is listed as an unincorporated community on Highway 92 near the McPherson County line.

No federal highways cross the county. State Highway 61 crosses the center of the county from north to south. State Highway 92 enters the central part of the county from McPherson County, joining State Highway 61 at Arthur. The Arthur County Fire District is the only one in the county. Public lands include approximately 20,030 acres in school lands within the county.

The entire county lies within the Sandhills prairie vegetation zone. Agriculture crop fields and hayland are scattered mostly in the southeast quarter of the county.

The areas most at-risk from wildfire are the lands surrounding the village of Arthur and several ranch headquarters scattered across the county. These were identified in the statewide Priority Lands analysis; a map of them is included in Appendix A. All of Arthur County lies within the boundaries of the WUI as defined in the introduction to this CWPP.

Infrastructure and Protection Capabilities

Water Sources

There are no municipal water systems in Arthur County. There are no named streams in the county. Shallow Sandhills lakes are found throughout the northeast quadrant of the county. Windmills can provide water when they are operational. Ponds and stock tanks are located on ranches throughout the county. During drought conditions some of the ponds may not be reliable sources of water.

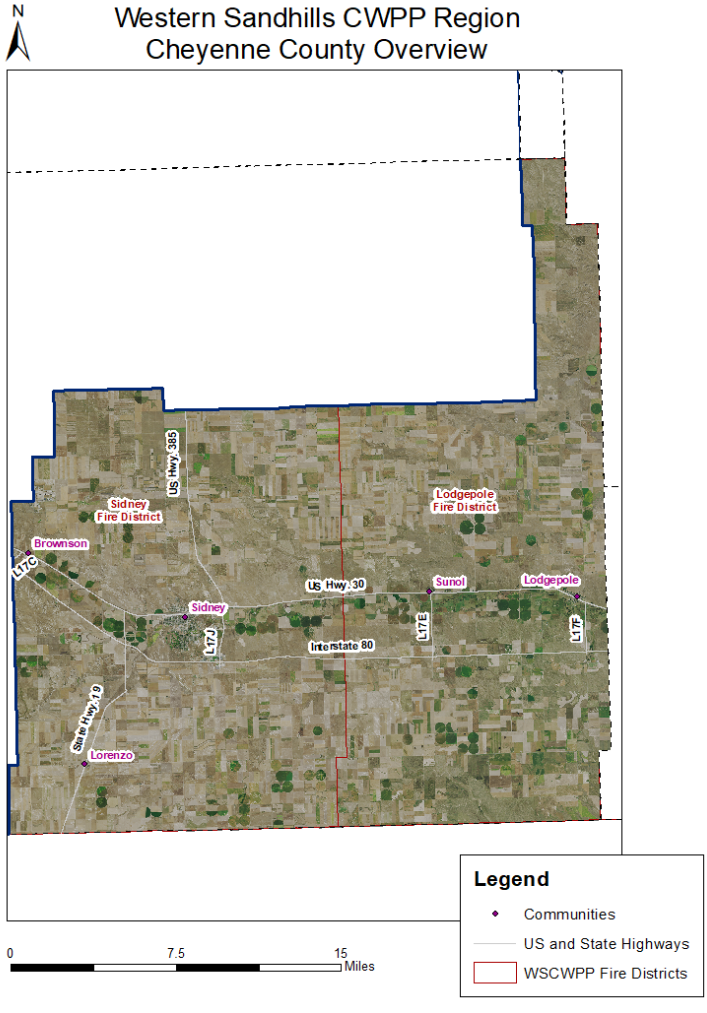
Utilities/Phone Service

The Panhandle Rural Electric Membership Association of Alliance provides electric service to all but the extreme west end of the county, which is supplied by Wheat Belt Public Power District of Sidney. Both cellular and landline telephone services are available in the county. There are gaps in cellular coverage in some areas.

Roads and Bridges

No specific information on roads or bridges was provided by Arthur County officials.

CHEYENNE COUNTY
542 sq. miles within CWPP boundary
2017 population: 8,684 within CWPP boundary



Community Profile

The east and southeast parts of Cheyenne County form the southwest corner of the CWPP area. It is bounded on the west by the rest of Cheyenne County, on the north by Morrill County, on the east by Garden and Deuel Counties, and on the South by Colorado. Incorporated communities include the county seat of Sidney (pop. 6,620) and Lodgepole (pop. 301). Unincorporated communities include Lorenzo (2010 pop. 58), Sunol (2010 pop. 73), and Brownson.

Interstate 80 crosses the southern part of the county from west to east. US Highway 30 runs from west to east just north of and paralleling Interstate 80. The two routes are connected by State Links 17 C, J, E, and F. US Highway 385 enters the county from the north, joining US 30 just east of Sidney. Nebraska Highway 19 runs from the Colorado state line north through Lorenzo, joining US 30 just west of Sidney. Volunteer fire departments all or partly in this part of Cheyenne County include Sidney and Lodgepole.

Besides municipal lands, public lands in the part of Cheyenne County in the CWPP include approximately 14,493 acres in school lands.

Vegetation zones include a mosaic of shortgrass and mixed-grass prairies; woody wetlands along Lodgepole Creek; and agriculture crop fields and hayland along the Lodgepole Creek drainage and scattered throughout the area.

Locations of special concern include population centers adjacent to grasslands and areas where eastern redcedar has encroached into grasslands, creating high fire hazard. The areas most at-risk from wildfire are located around Sidney and Lodgepole, and other areas along Lodgepole Creek. There is also an area of rough terrain in the extreme northeast corner of the county. These were identified in the statewide Priority Lands analysis; a map of them is included in Appendix A. All of Cheyenne County's population centers, dispersed ranches, and wooded areas along the rivers and streams lie within the boundaries of the WUI as defined in the introduction to this CWPP.

Protection Capabilities and Infrastructure

Water Sources

Sidney has a municipal water system. Ranches and smaller population centers are on private wells. Lodgepole Creek east of Sidney is generally a reliable water source. Windmills can provide water when they are operational. There are small ponds and stock tanks on ranches and farms throughout the county. During drought conditions many ponds may not be reliable water sources. Some smaller streams have only intermittent flows and are not reliable. There are no irrigation canals in the CWPP portion of Cheyenne County.

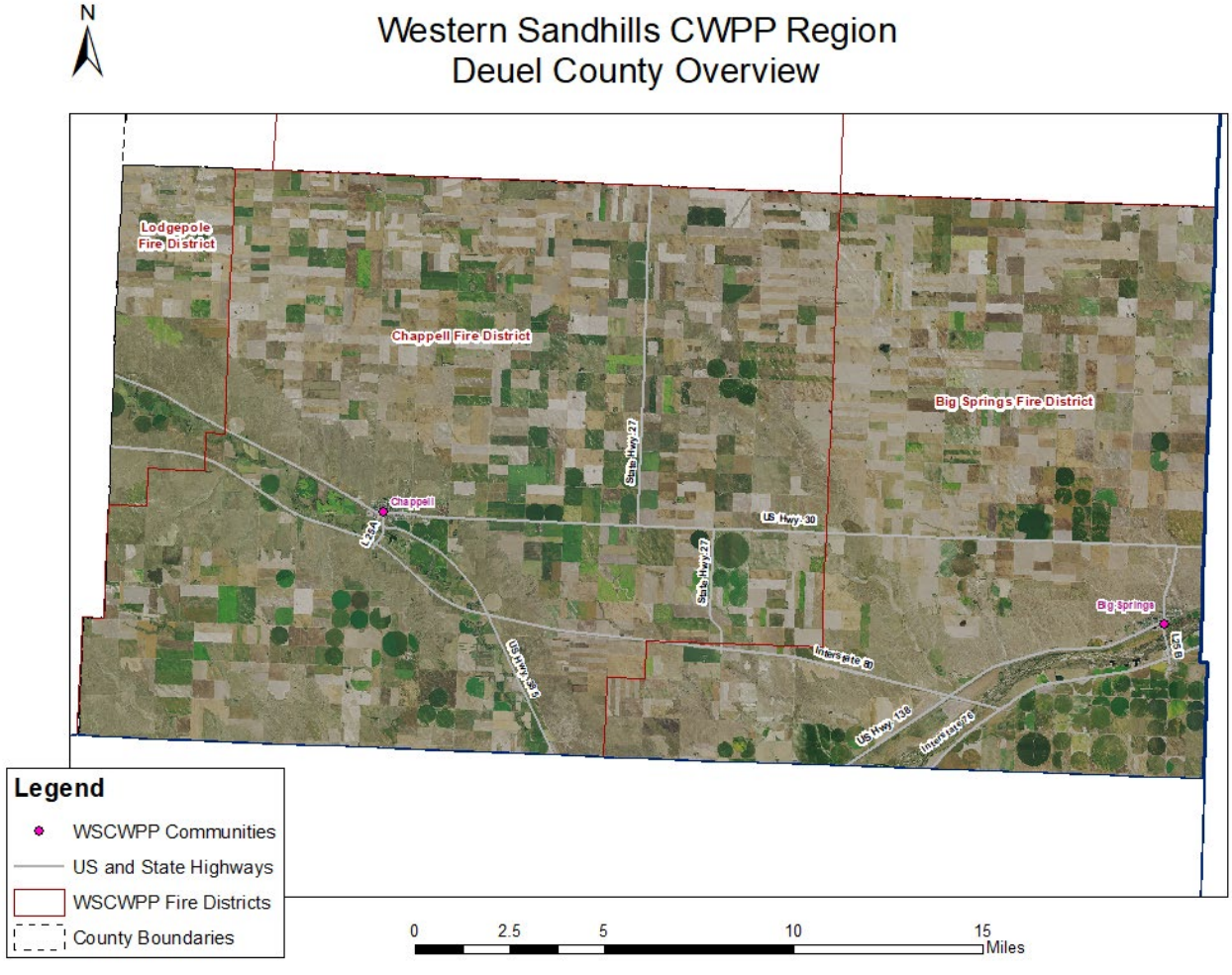
Utilities/Phone Service

Rural electric service is provided by Wheat Belt Public Power District headquartered in Sidney. Sidney has municipal power. Both cellular and landline telephone services are available in the county. There are gaps in cellular coverage in some areas.

Roads and Bridges

No specific information on roads or bridges was provided by Cheyenne County officials.

DEUEL COUNTY
441 sq. miles
2017 population: 1,883



Community Profile

Deuel County lies on the south boundary of the CWPP region. It is bounded on the west by Cheyenne County, on the north by Garden County, on the east by Keith County, and on the south by Colorado. Incorporated communities include the county seat of Chappell (pop. 900) and Big Springs (pop. 390). There are no unincorporated communities in the county.

Interstate 80 crosses the south central part of the county from west to east. US Highway 30 crosses the center of the county from west to east. US Highway 385 enters the central part of the county from Colorado and runs northwest, joining US Highway 30 at Chappell. US Highway 138 enters the southeast part of the county from Colorado and runs northeast through Big Springs, where it turns north and joins US 30. Interstate 76 parallels US Highway 138, entering from Colorado and joining Interstate 80 south of the South Platte River. The Big Springs, Chappell, and Lodgepole Fire Districts lie all or partly within Deuel County.

Besides municipal lands, public lands in Deuel County include approximately 203 acres in three state WMAs and approximately 12,220 acres in school lands.

Vegetation zones include a mosaic of mixed-grass and short-grass prairie with riparian deciduous forest and woody wetlands along the South Platte River and parts of Lodgepole Creek. Agriculture crop fields are scattered across the county.

Locations of special concern include population centers adjacent to grasslands and areas where eastern redcedar has encroached into grasslands, creating high fire hazard. The areas most at-risk from wildfire are located along the South Platte River and Lodgepole Creek, particularly in the vicinities of Chappell and Big Springs. These were identified in the statewide Priority Lands analysis; a map of them is included in Appendix A. All of Deuel County's population centers, dispersed ranches, and wooded areas along the rivers and streams lie within the boundaries of the WUI as defined in the introduction to this CWPP.

Protection Capabilities and Infrastructure

Water Sources

Chappell and Big Springs have municipal water systems. Ranches and homes are on private wells. Ponds and stock tanks are located on ranches throughout the county. The South Platte River and Lodgepole Creek are generally reliable water sources. During drought conditions some ponds are not reliable water sources. Some smaller streams have only intermittent flows and are not reliable. Windmills can provide water when they are operational. There are several irrigation canals in the south part of Deuel County, including parts of the Western Canal, Highline Canal, State Line Ditch, and Peterson Ditch.

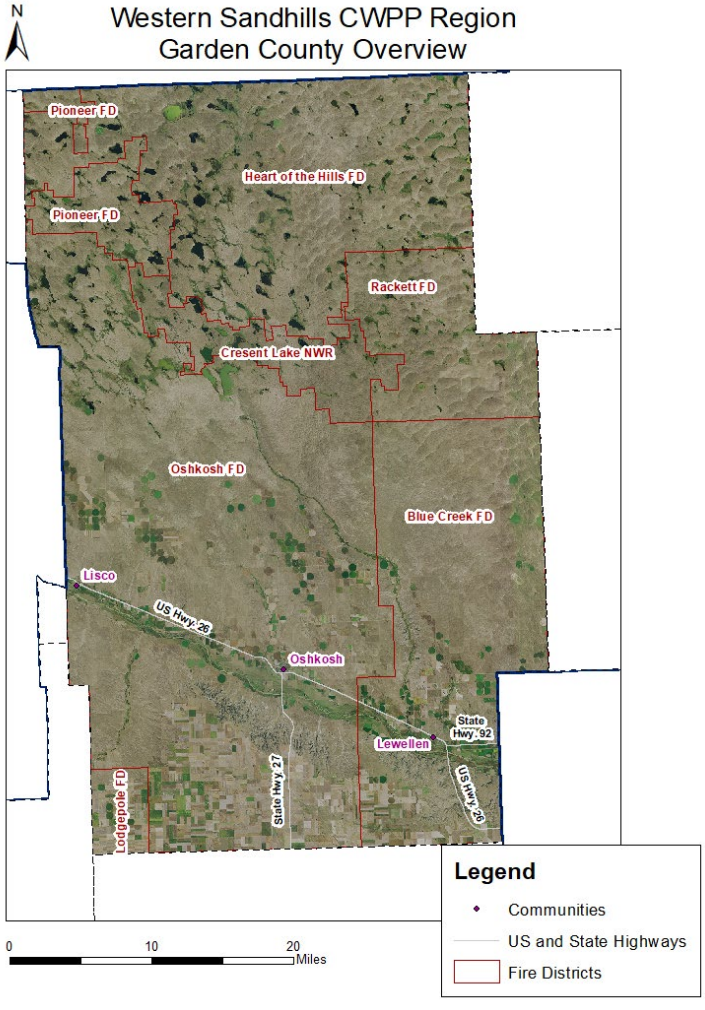
Utilities/Phone Service

Rural electric service is provided by Wheat Belt Public Power District of Sidney and by the Nebraska Public Power District in the Chappell area. Both cellular and landline telephone services are available in the county. There are gaps in cellular coverage in some areas.

Roads and Bridges

No specific information on roads or bridges was provided by Deuel County officials.

GARDEN COUNTY
1,731 sq. miles
2017 population: 1,906



Community Profile

Garden County lies on the west side of the CWPP area. It is bounded on the north by Sheridan County, on the east by Grant and Arthur Counties, on the south by Deuel County, and on the east by Cheyenne, Morrill, and Box Butte Counties. Incorporated municipalities include the county seat of Oshkosh (pop. 814) and Lewellen (pop. 211). Lisco is an unincorporated community on the west edge of the county.

US Highway 26 follows the North Platte River across the south part of the county. State Highway 92 enters the southeast part of the county from Keith County, joining US 26 near Lewellen. State Highway 27 enters the central part of the county from the south and joins US Hwy. 26 at Oshkosh. Volunteer fire departments all or partly within Garden County include Blue Creek, Lewellen, Lodgepole, Oshkosh, Rackett, and Heart-of-the-Hills/Pioneer.

Besides municipal lands, public lands include Crescent Lake National Wildlife Refuge (45,849 acres), Crescent Lake and part of Clear Creek state WMAs (total approx. 1,606 acres), Ash Hollow and Bluewater Battlefield State Historical Parks (total approx. 1,004 acres),and 36,257 acres in school lands.

Vegetation zones include Sandhills prairie covering most of the county, salt marshes and flats in the north part of the county, a mosaic of mixed-grass and shortgrass prairie south of the North Platte River, and riparian deciduous woodlands along the North Platte River and major creeks. Agricultural fields are located primarily in the south and central parts of the county. In some areas, particularly south of the North Platte River, eastern redcedar has encroached into prairies and woodlands to become a distinct and highly flammable vegetation type.

Locations of special concern include population centers adjacent to grasslands and areas where eastern redcedar has encroached into grasslands and woodlands, creating high fire hazard, such as the area south of the North Platte River. A map of these areas is included in Appendix A. The Oshkosh/Lisco fire chief identified all of the ranches in the hills as being of particular concern due to their being surrounded by grasslands. He said the primary issues are difficult access, rough terrain, heavy fuels (at times), and lack of water within an effective distance. All of Garden County's population centers, dispersed ranches, and wooded areas along waterways lie within the boundaries of the WUI as defined in the introduction to this CWPP.

Protection Capabilities and Infrastructure

Water Sources

Oshkosh has a municipal water system. Smaller communities, ranches, and farms are on private wells. The North Platte River and its major tributaries are generally reliable water sources. There are numerous shallow Sandhills lakes in the northern third of the county. Ponds and stock tanks are located on ranches and farms in the central and southern parts of the county. During drought conditions some of the ponds may not be reliable water sources. Some smaller streams have only intermittent flows and are not reliable. Windmills can provide water when they are operational. Irrigation canals in the county include the Graf, Hooper, Lisco, Lyons, North River, Oshkosh, Paisley, Spohn, and Union Canals, all of which lie on the north side of the North Platte River.

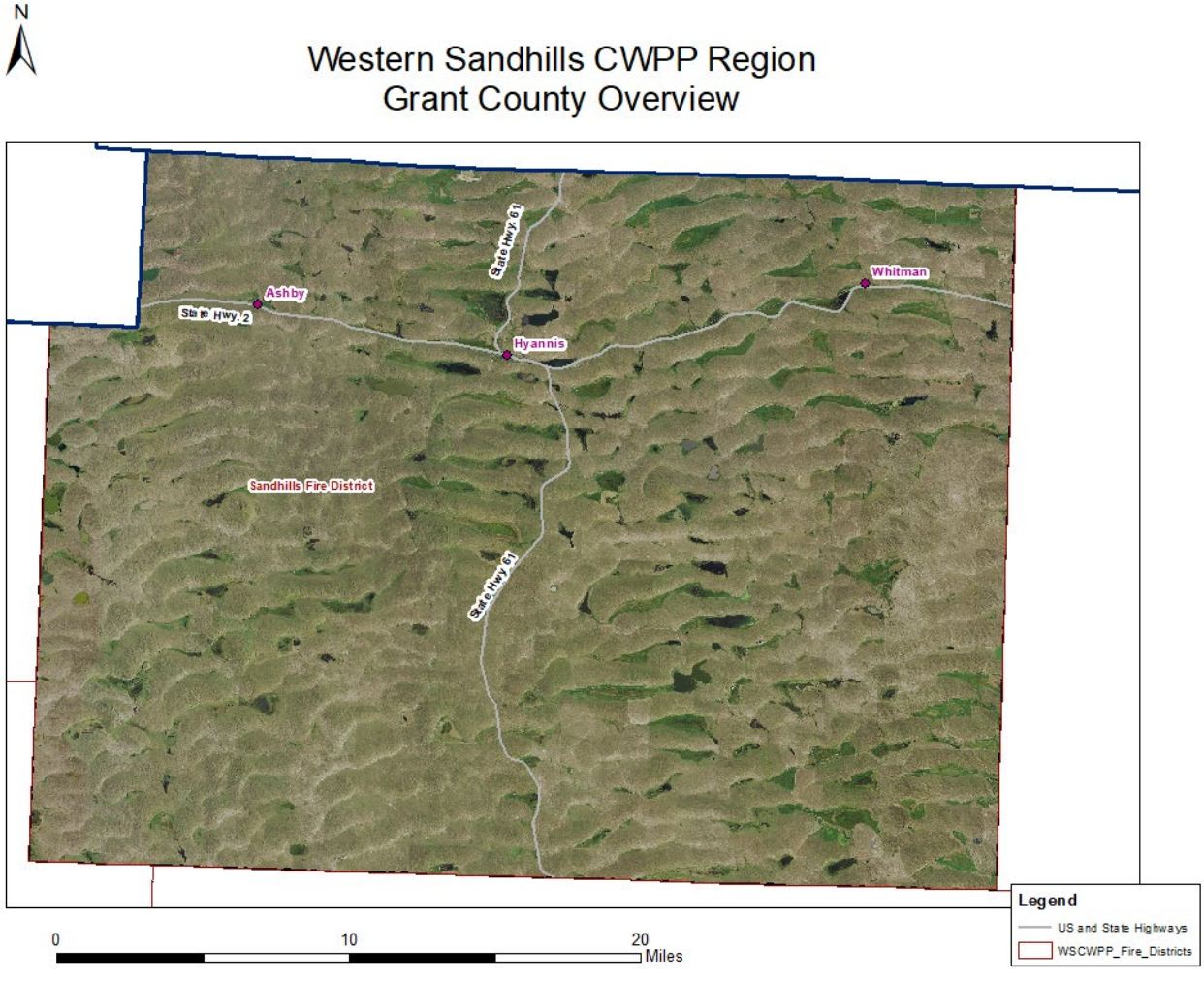
Utilities/Phone Service

Rural electric service in Garden County is provided by the Wheat Belt Public Power District of Sidney and the Panhandle Rural Electric Membership Association, headquartered in Alliance. Both cellular and landline telephone services are available in the county. There are gaps in cellular coverage in some areas.

Roads and Bridges

The Garden County Fire Chief stated that there are no bridges in the county that will not support the weight of fire equipment.

GRANT COUNTY
783 sq. miles
2017 population: 649



Community Profile

Grant County is located in the center of the north tier of CWPP counties. It is bounded on the east by Hooker County, on the south by Arthur County, on the west by Garden and Sheridan Counties, and on the north by Cherry County. The only incorporated community is the county seat of Hyannis (pop. 192). Ashby and Whitman are unincorporated communities.

There are no federal highways in the county. State Highway 61 bisects the county from north to south. State Highway 2 crosses the north part of the county from west to east, running through all three communities. The entire county is in the Sandhills Fire District.

Public lands in Grant County include 658 acres in three state WMAs, two BLM parcels (approx. 39 acres total), and 11,390 acres of state school lands. The entire county is in the Sandhills prairie vegetation zone.

According to the FAP, the area immediately surrounding Hyannis is the most at-risk from wildfire. A map of high-risk areas is included in Appendix A. The Grant County fire chief identified reliable water supply as the primary concern for the district. All of Grant County's population centers and dispersed farms and ranches lie within the boundaries of the WUI as defined in the introduction to this CWPP.

Protection Capabilities and Infrastructure

Water Sources

Hyannis has a municipal water system. Smaller population centers and ranches are on private wells. Part of the South Branch of the Middle Loup River follows the east part of the north county line. There are numerous shallow Sandhills lakes, as well as ponds and stock tanks located throughout the county. Windmills can provide water when they are operational. There are no irrigation canals in the county.

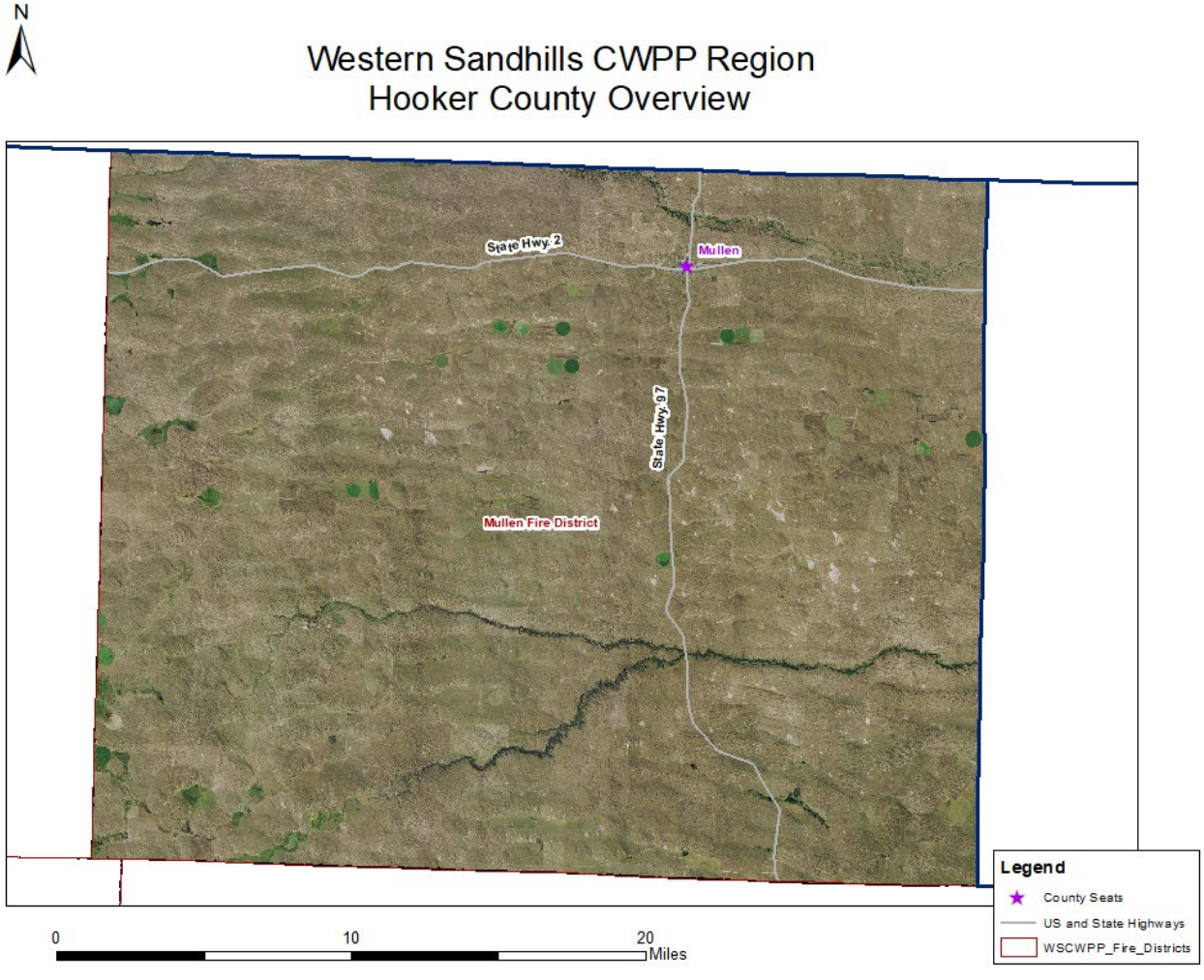
Utilities/Phone Service

Rural electric service in Grant County is provided by the Panhandle Rural Electric Membership Association. Both cellular and landline telephone services are available in the county. There are gaps in cellular coverage in some areas.

Roads and Bridges

The Grant County Fire Chief stated that there are no bridges in the county that will not support the weight of fire equipment.

HOOKER COUNTY
721 sq. miles
2017 population: 674



Community Profile

Hooker County lies in the northeast corner of the CWPP region. It is bounded on the south by McPherson County, on the west by Grant County, on the north by Cherry County, and on the east by Thomas County. The Village of Mullen (pop. 459) is the county seat and the only community in the county.

There are no federal highways in the county. State Highway 97 crosses the east side of the county from north to south. State Highway 2 crosses the north part of the county from west to east. The entire county is in the Mullen Fire District. Public lands include five scattered BLM parcels (approx. 335 acres total) and 13,485 acres in school lands.

The entire county lies in the Sandhills prairie vegetation zone. Eastern redcedar forest and savanna are found along the Middle Loup and Dismal Rivers, where there are also riparian deciduous woodlands. In some parts of the county eastern redcedar has encroached into grasslands and riparian woodlands to become a distinct and highly flammable vegetation type. A few irrigated agriculture crop fields are scattered across the county.

The Mullen Fire Department identified the Dismal River and Middle Loup River valleys as being of particular concern. These valleys are rugged, steep, and in some areas heavily timbered, with very little or no access. The

Sandhills Golf Club clubhouse and cabins sit on the north fork of the Dismal River with only golf cart paths for access. It is heavily timbered around the cabins and clubhouse. The Dismal River Golf Club is in a remote area with a large fuel load surrounding the premises and clubhouse. The major issues are multiple structures, difficult access, rough terrain, one way in and out, heavy fuels, and lack of water within an effective distance. The Village of Mullen has high home density and infrastructure at risk. These and other high-risk areas are mapped in Appendix A.

All of Hooker County's population centers, dispersed ranches, and wooded areas along the rivers and streams lie within the boundaries of the WUI as defined in the introduction to this CWPP.

Protection Capabilities and Infrastructure

Water Sources

Mullen has a municipal water system. Tankers responding to wildfire may fill up at the downspout at the fire hall. Ranches are on private wells. The Middle Loup and Dismal Rivers are generally reliable water sources. There are some shallow Sandhills lakes on the west side of the county. Ponds and stock tanks are located on ranches throughout the county. During drought conditions some ponds are not reliable water sources. Windmills can provide water when they are operational. There are no irrigation canals in the county.

Utilities/Phone Service

Rural electric service in Hooker County is provided by the Custer Public Power. Both cellular and landline telephone services are available in the county. There are gaps in cellular coverage in some areas.

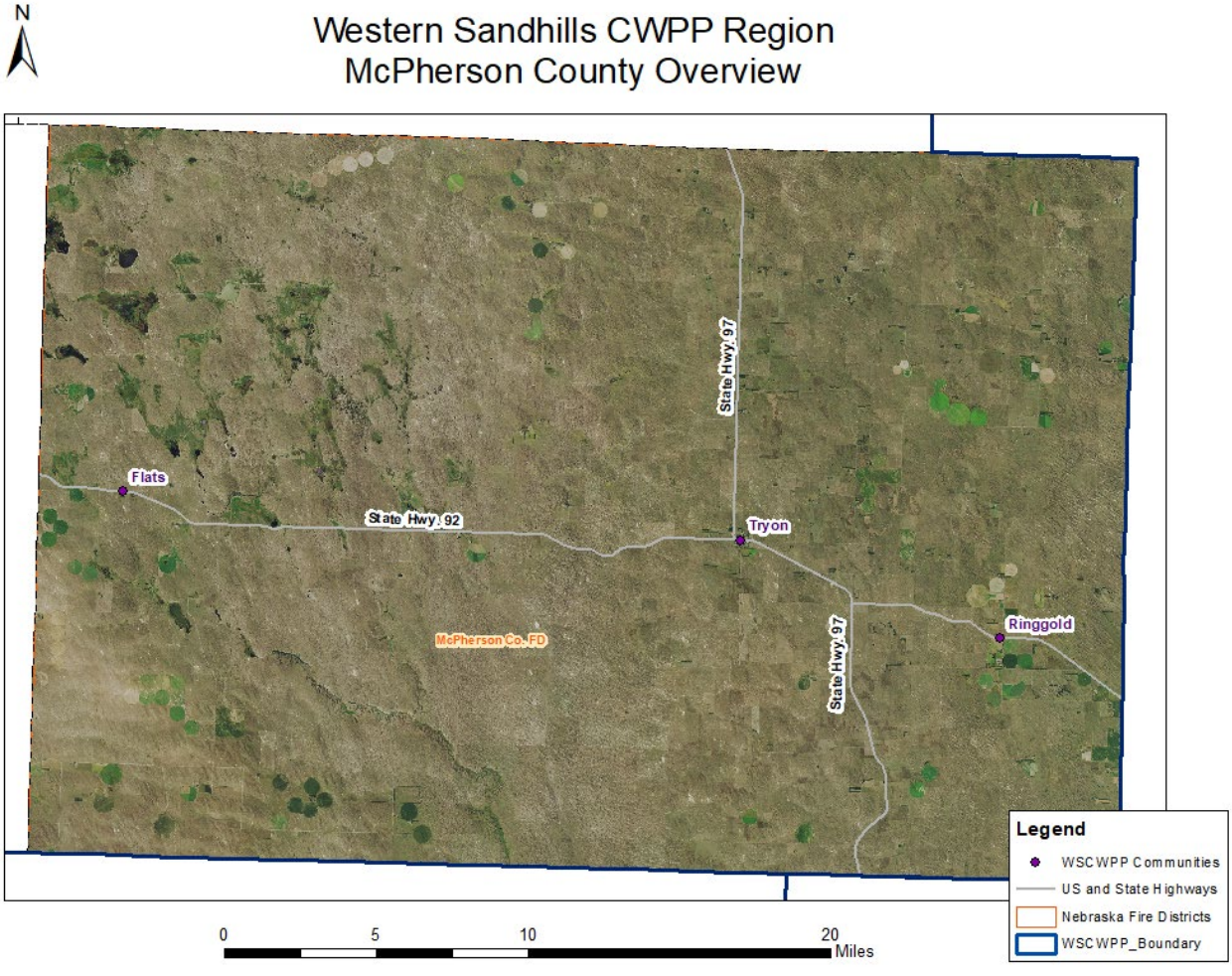
Roads and Bridges

The Mullen Fire Department reported that there ae some untested, private bridges with unknown weight limits, crucial to river crossings. Other culverts also have unknown weight limits.

Greatest Concerns

The Mullen Fire Department noted that their greatest concerns are structure protection from wildland fires and loss of grass for grazing causing economic impacts.

McPHERSON COUNTY
860 sq. miles
2017 population: 499



Community Profile

McPherson County lies in the southeast corner of the CWPP region. It is bounded on the west by Arthur County, on the north by Hooker and Thomas Counties, on the east by Logan County, and on the south by Keith and Lincoln Counties. There are no incorporated communities in the county. The three unincorporated communities include the county seat of Tryon (pop. 157), Flats, and Ringgold.

There are no federal highways in the county. State Highway 92 bisects the county from west to east. State Highway 97 enters the central part of the county from the north and joins State Highway 92 at Tryon. It leaves Highway 92 about halfway between Tryon and Ringgold, where it runs south into Lincoln County. The entire county is in the McPherson County Fire District.

Public lands include three scattered BLM parcels (approx. 123 acres total) and 20,943 acres in school lands.

The entire county lies in the Sandhills prairie vegetation zone. A few irrigated agricultural fields are scattered in the southwest and eastern parts of the county. The McPherson fire chief has identified the area surrounding Tryon as of particular concern due to multiple structures. He cited lack of manpower as the department's greatest concern. Another location at-risk from wildfire is an area along the upper reaches of the North Fork of

Birdwood Creek, where the terrain is rugged and cedar-encroached. A map of at-risk areas is included in Appendix A. All of McPherson County's population centers and dispersed ranches lie within the boundaries of the WUI as defined in the introduction to this CWPP.

Protection Capabilities and Infrastructure

Water Sources

There are no municipal water systems in the county. Population centers and ranches are on private wells. The North Fork of Birdwood Creek is generally a reliable water source. There are some shallow Sandhills lakes in the northwest part of the county. Ponds and stock tanks are located on ranches throughout the county. During drought conditions some ponds may not be reliable sources of water. Windmills can provide water when they are operational. There are no irrigation canals in McPherson County.

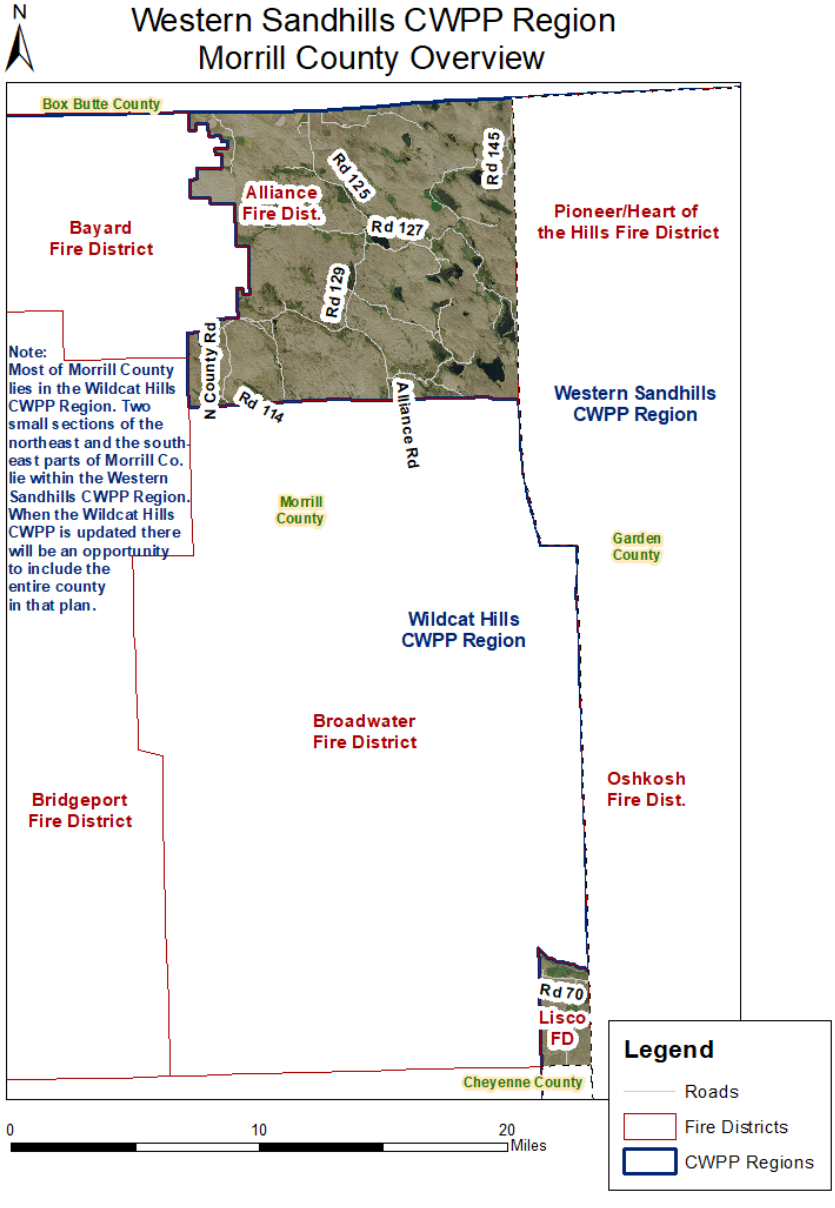
Utilities/Phone Service

Rural electric service in most of McPherson County is provided by the Custer Public Power District. Part of the west end of the county is served by the Panhandle Rural Electric Membership Association. Both cellular and landline telephone services are available in the county. There are gaps in cellular coverage in some areas.

Roads and Bridges

The McPherson County Fire Chief stated that there are no bridges in the county that will not support the weight of fire equipment.

MORRILL COUNTY
1,430 sq. miles (153 sq. miles within the CWPP boundary)
2017 population: 4,836 (Est. less than 50 within the CWPP boundary)



Community Profile

The northeast corner of Morrill County (which is in the Alliance Fire District) and the Lisco Fire District in the southeast corner of the county are on the west edge of the Western Sandhills CWPP region. The remainder of Morrill County is in the Wildcat Hills CWPP region. When the Wildcat Hills CWPP is updated in 2020, its boundary will be reviewed and may be adjusted to include all of Morrill County. Including this area now in the Western Sandhills CWPP region will ensure that these lands are included in a CWPP, thus qualifying area landowners to participate in the NFS fuels reduction cost share program.

The northeast corner of Morrill County is bounded on the north by Box Butte County, on the east by Garden County, and on the south and west by the rest of Morrill County. The Lisco Fire District is bounded on the east by Garden County, on the south by Cheyenne County, and on the west and north by Morrill County. The Lisco Fire

District shares a fire chief with the Oshkosh/Garden County Fire Department. Because of this, it may be desirable to retain the Lisco Fire District in the Western Sandhills CWPP.

There are no incorporated or unincorporated communities in this part of Morrill County. There are no federal or state highways in this part of Morrill County. Public lands in this part of Morrill County include two BLM parcels (133 acres total) and approximately 1,534 acres of school lands.

The northeast corner of Morrill County is in the Sandhills prairie and salt marshes and flats vegetation zones. The Lisco Fire District is in the Sandhills borders mixed-grass prairie vegetation zone with a strip of riparian deciduous forest along the North Platte River. A few irrigated agriculture crop fields are located south of the North Platte River.

The Alliance fire chief identified the following issues in this part of the district: difficult access, rough terrain, and lack of water within effective distance. He stated that distance and open areas are his greatest concerns for this part of the fire district. The Lisco/Oshkosh fire chief identified all of the ranches in the hills as being of particular concern due to their being surrounded by grasslands. He said the primary issues are difficult access, rough terrain, heavy fuels (at times), and lack of water within an effective distance. His greatest concern is getting enough mutual aid and tenders. A map of at-risk areas is included in Appendix A. All of Morrill County's population centers and dispersed ranches lie within the boundaries of the WUI as defined in the introduction to this CWPP.

Infrastructure and Protection Capabilities

Water Sources

There are no municipal water systems in these parts of Morrill County. Ranches are on private wells. There are numerous shallow Sandhills lakes in the northeast corner of Morrill County. The North Platte River is a reliable water source in the Lisco Fire District. Windmills can provide water when they are operational.

Utilities/Phone Service

Rural electric service in the part of Morrill County included in this CWPP is provided by Wheat Belt Public Power District of Sidney. Both cellular and landline telephone services are available in the county. There are gaps in cellular coverage in some areas.

Roads and Bridges

The Alliance Fire Chief stated that there may be some bridges in the northeast corner of Morrill County that will not support the weight of fire equipment. The Lisco/Oshkosh Fire Chief stated that there are no bridges in the Lisco District that will not support the weight of fire equipment.

Action Plan

This section of the CWPP addresses risk assessment, fire risk rating, treatment of structural ignitability, prioritization, risk reduction, and it recommends a plan of action for increasing emergency preparedness. The action plan includes wildfire risk reduction strategies, recommendations for increasing emergency preparedness, fuels mitigation practices, training, education, and maintenance. The final part of the action plan outlines a monitoring and evaluation process that can be used to track progress and periodically update the plan.

Establish and Implement a Risk Assessment Procedure

The North Platte NRD, South Platte NRD, Twin Platte NRD and the Upper Loup NRD Multi-Jurisdictional Hazard Mitigation Plans identify their planning areas as being at risk of wildfire. Some of these fires can be expected to exceed 100 acres in size. The plans include general wildfire risk assessments (but do not map specific at-risk areas) and some general mitigation alternatives. Most of the mitigation strategies identified by the planning teams have not been implemented. Some information in these plans is outdated, specifically assumptions that because of the limited forested lands in these counties, that fuels treatment programs do not apply. Wildfires are not restricted to forestland – prairie fires are wildfires. In addition, across much of Nebraska, including parts of the Western Sandhills CWPP region, eastern redcedar is expanding into grasslands, increasing wildfire hazard. Wildfire planning and Firewise® preparations are appropriate for all areas, regardless of fuel type.

Risk assessment is a systematic process for identifying and assessing the range of elements that could lead to undesirable outcomes for a specific situation. Quantitative risk assessment requires calculations of the two primary components of risk: the magnitude of the potential loss and the probability that the loss will occur. For the WUI, a risk assessment is a step that identifies any feature/element of the landscape and structures that could create potential harm to a homeowner or community.[15]

It is important to understand the meaning of risk and hazard in relation to wildfire. ***Risk*** is the chance or probability of occurrence of fire. ***Hazard*** is the exposure to risk; in a wildfire situation, those hazards can be related to either the natural or the human-made environment. Natural hazards include fuel type and amount of fuels, topography, and weather. Human-made hazards include the limited availability of water, limited access to structures, limited green space around structures, and the ignitability of structures. The capability of firefighting resources will be compromised by the severity of both natural and human-made hazards.[16]

An assessment includes a review of the area's fire history, fuels/vegetation rating, topographic hazard analysis, weather hazard potential, access, water availability, defensible space, and structural ignitability. The Overview section (see page 5) of this plan contains information about the area's fire history, climate, weather, fuels/vegetation, and topography. Individual county sections provide details on water sources and access issues. Local fire department equipment lists appear in Appendix G. Defensible space and structural ignitability are addressed in this section of the plan.

Fire Risk Rating and Ignitability

Homes in both forested and non-forested settings can be at risk from wildfires. Quantitative structure risk ratings can be handled under location-specific plans for incorporated communities. Most of the western Sandhills region is rural/agricultural with widely spaced home locations. The region has not experienced the degree of rural development seen in more populous areas. There is an opportunity to perform structural risk and ignitability analysis and treatment activities in rural residential and recreational home sites at the same time fuels mitigation work is being conducted in these areas.

Prioritization

Appendix A of this plan contains a map depicting "Areas of Concern." This map shows the parts of each county considered to be at the highest risk from wildfire. The locations were identified by local fire officials, other stakeholders, and priority areas designated in the statewide FAP. These include interface areas with

neighborhoods directly adjacent to open spaces, intermix areas where homes are interspersed with natural fuels, and occluded interface areas where neighborhoods are isolated or surrounded by areas of natural fuels. [17]

This document outlines WUI focus areas within each county. These can be further prioritized based on data gathered during risk assessment for individual neighborhoods. The woodlands along the Dismal, North Platte, and South Platte Rivers and their tributaries have high priority for hazardous woody fuels reduction. All of the population centers, unincorporated residential developments, and dispersed recreational developments have high priority for fuels treatment and Firewise® preparation. Further assessments may identify additional priority areas.

Wildfire Risk Reduction

The goal of risk reduction is to reduce the potential loss to life and property. Understanding that wildfire is inevitable can help communities prepare for wildfires. Fire-adapted communities are knowledgeable, engaged communities where actions of residents and agencies in relation to infrastructure, buildings, landscaping, and the surrounding ecosystem lessen the need for extensive protection actions. This enables the community to safely accept fire as part of the surrounding landscape. A successful fire-adapted community approach has the potential to save lives, homes and communities, and millions of dollars in suppression costs annually.

There is a range of actions communities can undertake to become more fire-adapted. In general, the more elements that a community has addressed, the more fire-adapted the community will become. Major elements of a fire-adapted community include vegetation management, ignition-resistant homes, increasing local responders' understanding of wildfire, cooperation between jurisdictional authorities, and fuels treatments on both private and public lands to reduce hazardous fuels and create fuels buffers.

Homeowners can undertake mitigation measures that can decrease the potential destructive effects a wildfire might have on their property. Some measures are designed to modify the vegetative environment surrounding a structure to decrease potential ignition sources. Others focus on modifying a structure (or changing its location) to make the structure more resistant to ignition. To reduce the risk for the long term, actions need to be maintained over time. [17]

Common Practices

- Actively managing vegetation near the home by reducing density, conducting landscaping maintenance, and replacing flammable vegetation with ignition-resistant components. Greater efforts are needed within close proximity of the structure and gradually decreasing efforts beyond that.
- Maintaining structures free of needles, leaves, and other organic debris from decks, roofs, and near the base of exterior walls.
- Increasing ignition resistance of structures by actions such as using ignition-resistant roofing and covering exterior openings of structures, such as attic vents, eaves, soffits, and crawl spaces, with non-flammable wire mesh screening.
- Removing flammable materials from beneath structures and decks.
- Locating firewood, fuel tanks, and LPG tanks at a safe distance from structures.

Refer to Appendix J for an expanded list of common practices and a listing of several programs, such as "Firewise®" and "Ready Set Go," available to help homeowners and communities reduce wildfire risks.

Locally-Identified Mitigation Practices

The North Platte NRD Hazard Mitigation Plan specifically recommends the following mitigation practices:

- Complete new or update existing CWPPs
- Coordinate with the National Drought Mitigation Center
- Expand water storage capacity/emergency water supplies/dry hydrants

- Fire prevention program: Planning & training
- Hazardous fuels reduction
- Rural water district and system upgrades
- Well and water system improvements
- Wildfire hazard identification and mitigation system
- Reduce risk through land use planning (landscaping ordinances)
- Participate in the Firewise® program
- Develop a wildland-urban interface code
- Defensible space
- Wildfire education
- Mutual aid

The South Platte NRD Hazard Mitigation Plan specifically recommends the following mitigation practices:
- Public education/awareness
- Acquire training & equipment for local fire departments

In addition to the items listed above, The Twin Platte NRD Hazard Mitigation Plan identified the following needs:
- New municipal wells
- Expand water storage capacity
- New fire trucks

The Upper Loup NRD Hazard Mitigation Plan specifically recommends the following mitigation practices:
- Map and assess vulnerability to wildfire
- Incorporate wildfire mitigation in comprehensive planning
- Require or encourage fire-resistant construction (the use of non-combustible materials)
- Create defensible space around structures and infrastructure
- Conduct maintenance to reduce risk (tree care and public landscape maintenance programs)
- Implement a fuels management program (where there are woody fuels)
- Participate in the Firewise® program
- Increase wildfire risk awareness (i.e., educational materials, programs, and informing the public about proper evacuation procedures)
- Educate property owners about wildfire mitigation techniques
- Wildland fire fighting training for fire departments

Although funding limitations affect any jurisdiction's ability to implement some of these practices, identifying them as critical needs helps prioritize them for funding assistance opportunities such as the NFS fire equipment program described earlier in this plan.

Recommendations for Increasing Emergency Preparedness

Communication

Regularly review local communications plans, revising as needed. Many jurisdictions in Nebraska have identified communications as a major issue when working under a mutual aid scenario. Various responders have different communications hardware, and often these are incompatible with one another. This is more than just a nuisance. Communication is vital to responder safety and to coordinating an effective response to wildfire. After some major communications mishaps during the large wildfires of 2012 many local and state emergency managers worked to resolve the issue by updating protocol and equipment. Having and using a comprehensive communications plan is integral to maintaining smooth operations.

Coordination
Coordination between responders is crucial in any emergency response situation. Local emergency managers need to be able to tie in their responses with neighboring and outside assisting jurisdictions. This framework is already in place and used by local emergency managers. One of the gaps common to many LEOPs is the lack of wildfire-specific information in those documents. In many, fire is lumped in with hazardous materials. The information contained in this CWPP is intended to augment existing information and support these LEOPs and the local Multi-Jurisdictional Hazard Plans.

Aerial Support
It is critical to maintain the Single Engine Air Tanker program authorized through the Wildfire Control Act of 2013. Without this quick-response capacity, the danger of a small fire in difficult terrain growing into a large wildfire escalates rapidly.

Maps and Data
Some county roads and bridges have weight and/or width limitations that may inhibit use by emergency vehicles. If bridges were removed or are in poor condition, detours are needed. Planners can work with counties and fire departments to identify and map all roads and bridges, specifically identifying those with weight or width limits. Distributing this to fire departments and other emergency responders would facilitate route planning. This information could also be used to help prioritize fuel treatment areas.

Incident Command staging areas have been identified as an issue in some parts of the Sandhills. Planners may be able to help with this by pre-identifying potential staging locations near areas of wildfire concern such as recreation areas and rural subdivisions. Staging areas must be far enough away from a fire to reduce congestion and confusion for incident managers, yet close enough to efficiently provide resources. When a resource is needed, it is deployed from the staging area, with a controlled entry into the hazard zone. Staging areas need to be of sufficient size to accommodate multiple fire crews, engines, tankers, support vehicles, and equipment storage. Sites should have good access, water and power availability, and be able to accommodate communications needs. The information gathered for potential staging areas in the most at-risk locations can be provided to emergency managers, fire chiefs, and others to help them decide where to establish the staging area for a particular incident.

Equipment – other than fire equipment – has proven useful in many wildfire situations. Counties may want to consider adding an inventory of non-fire department resources (such as county road graders) to a centralized document.

Municipal water hydrants could be mapped and made available to emergency responders. Other map data that would be useful, especially in a format that could be easily accessed by hand-held devices, include types and locations of pipelines and pumping stations; power substations; power lines, towers and antennas for air resources to avoid; flammable material storage areas; and overhead water refill access points. GPS locations of stock tanks and other water sources on public lands could be provided to mutual aid responders.

Increase Fire Response Reporting for Increased Equipment Availability
Since reporting is voluntary for fire districts, not all fire districts report their wildfire responses to the NFS. Because of this, there is limited information available about the locations and sizes of historic wildfires within the CWPP counties. Increased reporting would provide data to geographically focus grant assistance on those areas most prone to wildfire. The NFS has a database already in place that could easily be used to help with this. Planners and fire departments are urged to work together to gather and report wildfire data to assist fuels mitigation efforts and increase funding opportunities for fire equipment.

Comprehensive fire reporting helps volunteer fire districts demonstrate a need for fire equipment such as that provided by the FEPP, Fire Fighter Property/State Fire Assistance, and Volunteer Firefighter Assistance programs described earlier in this document. There is a risk that incomplete reporting could imply that there is no pressing need for this type of equipment. This could potentially put the status of the program in jeopardy. As an incentive for participation, fire departments that report their responses are eligible to apply for this equipment.

Community Preparedness

Prepared communities reduce hazards, protect homes, and increase firefighter safety. Work with homeowners in WUI areas to establish and expand Firewise® Communities, Fire-Adapted Communities, and "Ready, Set, Go!" programs across the region. In a wildfire situation, responders often must quickly decide which homes have the best chance of being saved so they can focus their efforts on them. Some Nebraska fire departments have developed "triage" documents to help firefighters quickly assess these homes and neighborhoods. Preparation by property owners prior to a wildfire can contribute to firefighter safety and help them protect structures. See Appendix J.

Work with counties and municipalities to evaluate one-way-in/one-way-out subdivisions for potential addition of alternate ingress/egress routes. Estimate costs and identify potential grants or other financial assistance to address these issues.

County zoning plans could be strengthened to include provisions to limit new construction in areas such as canyon rims that are at high risk from wildfire. Although government regulation is not popular with some local residents, counties might want to consider both the monetary costs to taxpayers and the danger to fire department personnel responding to wildfires in these areas. At the very least, setbacks from the canyon rims, adequate emergency access, and specific Firewise® practices should be considered for implementation in the areas at highest risk.

Training and Education

Firefighter Training

All volunteer fire departments are encouraged to participate fully in wildland training opportunities provided through the NFS and NEMA. Refer to the training overview earlier in this document. Although not all volunteer fire departments have mandatory fitness requirements, local departments can be encouraged to participate, both for safety and lowering insurance costs.

Educational Opportunities for Property Owners and the Public

The Firewise® and "Ready Set Go!" programs offer excellent guidelines for reducing the loss from wildfire for both in-town and rural structures. The NFS "Living with Fire" publications, for both prairie and woodland areas, are also valuable educational tools for property owners. Fire extinguisher inspections and operation training could be offered as part of Firewise® events that participating communities hold annually. Involving local communities in these voluntary programs would increase public awareness regarding structure risk mitigation. See Appendix J.

When issuing building permits, county and municipal offices can distribute literature that includes recommended (or required) setbacks from canyon rims, lists of fire-resistant building materials, and fire-savvy landscaping suggestions. Service groups such as Rotary and Lions, and youth groups such as FFA, also may present opportunities for getting out wildfire planning information.

Fuels Mitigation Strategies

There are several approaches to reducing wildfire hazard through fuels management. In addition to active participation by property owners in the structural protection programs described above, practices such as prescribed grazing, prescribed fire, and mechanical fuels reduction can work together to provide protection over large areas containing a diversity of terrain and vegetative cover.

Prescribed Grazing
Grazing keeps fine fuels such as grasses in check. But overgrazed pastures are problematic for range and livestock health, as well as for wildlife. Landowners can work with range and wildlife management professionals to develop grazing plans that will benefit livestock while protecting grasslands and wildlife and managing fine fuels to reduce wildfire hazard.

The University of Nebraska's Institute of Agriculture and Natural Resources and the Natural Resources Conservation Service have specialists available to help landowners develop grazing systems that will address these concerns.

Prescribed Fire
Several federal and state agencies, prescribed burn associations, and some individual landowners use prescribed fire as a land management tool on federal, state and private lands. On grasslands, prescribed fire can be extremely efficient for keeping eastern redcedar encroachment in check. In forested settings, prescribed fire is more effective and safer when used to maintain woodlands after dense areas have been mechanically thinned. When tree densities are reduced prior to burning, it is easier to keep the fire on the ground, where it cleans up downed woody fuels without killing live trees. Crown fires are difficult to control, and they kill healthy trees.

Mechanical Fuels Reduction in High-Risk Wooded Settings
High-risk forested settings within the CWPP boundary are found mostly in cedar-encroached riparian bottoms. Wooded residential and recreational areas add the hazards of seasonal congestion, sometimes-limited or difficult access, and structures adjacent to highly-flammable conifers. Mechanical thinning will decrease tree density to healthy levels and reduce eastern redcedar encroachment in deciduous forests.

Slash (unusable limbs and tree tops left after thinning) can be chipped, mulched, or piled. Slash piles can present a fire hazard. Disposing of them by either burning during appropriate winter conditions or chipping on-site are acceptable means to mitigate this threat. Chips can help reduce soil erosion in disturbed areas. The chips should be spread, not piled, to allow vegetation to become established in these areas. Piles of chips not only prevent or delay revegetation, they also can be sources of spontaneous combustion.

The cost of mechanical fuels reduction depends on access, terrain, and tree density. Utilization of wood products generated by these treatments has the potential to offset the costs of doing the work. However, presently there is little local commercial market for this material. Researchers are currently working with the NFS to develop markets for wood products.

The NFS administers several federal and state grants that provide cost share to landowners to defray the cost of fuels reduction. Information about these programs can be found online at https://nfs.unl.edu/fuels-assistance. Landowners in counties that have a CWPP in place are eligible for these cost share programs.

Fuels Reduction in High-Risk Non-Forested Settings
Fuels management works best when it is conducted on a landscape basis. In addition to reducing woody fuels in forested areas, it is also important to manage the grass component on both forested areas and grasslands. Well-planned grazing can significantly reduce fire risk. Fuels treatments are only as effective as their weakest link. Unmanaged "islands" within managed areas pose a significant risk to the managed lands. Cost-share programs can encourage landowners to manage their forested and non-forested lands.

Much of the fuels reduction activity outside forested areas will involve creating defensible space around rural homes and other structures. The same Firewise® guidelines that apply in forested settings also apply in non-forested settings.

Five-Year Action Plan for the Western Sandhills CWPP 2019-2024					
Objective	**Task(s)**	**Who**	**When**	**Benchmark(s)**	**Opportunities/Limits**
Risk Assessment (RA)	Identify/analyze elements	Local officials with NFS	Done	Checklist/Report	n/a
Structural Risk & Ignitability Analysis (SRIA)	Individual or neighborhood analysis for rural areas	Contractors, fire depts., others.	Ongoing	Checklist/Report	Opportunity to do this during fuel reduction projects or other site visits. Limits: funding and staff availability.
Prioritization	Assess/prioritize AOCs based on vulnerability	Local Officials & fire departments	2019-2021	* Maps * Checklist * Report	Opportunity to further prioritize based on RA & SRIA data
Risk Reduction (RR)	Identify practices	Local Officials with NFS	Done	Checklist/Report	n/a
	Vegetation Management	Homeowners & landowners, local officials (public property)	Ongoing	# Acres or Properties Treated	Agency cost share programs available
	Ignition-Resistant buildings	Homeowners, planning officials	Ongoing	# New buildings to code; # bldgs. retrofitted	Retrofits can be costly; opportunity for new construction
	Jurisdictional Cooperation	Local, state, federal officials	Ongoing	# of Mutual Aid Agreements, MOUs, etc.	Explore MOUs with non-traditional partners, NGOs, etc.
Increase Communications Effectiveness	Review Local Communications Plans	Local and state officials	Annually	Document changes/updates	n/a
Increase Data Availability	Map county roads/bridges with weight or width limits; other data	Local officials, contractors?	2019-2024	Completed maps by jurisdiction	May be able to piggy back data collection with other tasks
Increase Available VFD Equipment	Increase fire response reporting	Fire chiefs	Ongoing	# of Departments reporting	Opportunity for VFDs to acquire additional equipment
Increase Community Preparedness	Implement homeowner and community programs	Local officials, homeowner groups	Ongoing	# of programs established or expanded	NFS has staff available to help communities with this
	Evaluate subdivision in/out access	Local officials, VFDs, developers	2019-2021	Report/cost estimates	Explore grant funding to address costs
	Review County Zoning Plans for treatment of high fire risk areas	Local planning staffs	2019-2021	Recommendations to county officials	Consider canyon setbacks, access, building materials
Increase Response Effectiveness	Participate in firefighter training	VFDs	Ongoing	# of departments and firefighters receiving training	Many training options available through NFS & NEMA
Increase Public Awareness	News releases; Hold workshops, information sessions, etc.	Local officials, planners, VFDs	Ongoing	# of people reached	NFS has info & materials, can help with planning
	Provide literature to homeowners, developers, others	Local officials, planners, VFDs	Ongoing	# of people reached	NFS has brochures & handouts for general use

Maintenance

Reducing hazardous fuels is not a one-time event. Areas that have been treated by any method to reduce fuels must be maintained on a regular basis because the vegetation continues to grow. NFS fuels treatment agreements include a requirement that the work be maintained for a minimum of ten years after the project is completed. Treatment, particularly mechanical treatment, can be costly, so continued maintenance (keeping

regrowth in check) not only prolongs the period of hazard protection, it also protects the monetary investment made by landowners and the cost-share program.

Monitoring and Evaluation

The objective of fuels mitigation treatments in forested settings is to reduce the stand density to levels which will remain effective for 20 to 30 years. The NFS maintains a database that quantifies the time and level of treatment performed under NFS agreements on forested properties statewide. This helps resource managers to evaluate when and where resources for future fuel treatments should be directed.

The extreme fire behavior in Nebraska during 2012 tested many of the fuels reduction treatments that were previously implemented. Wildfires provided an opportunity to observe the effectiveness of various types and intensities of treatments. Lessons learned from the 2012 fire season strengthened resource managers' ability to plan suitable fuels mitigation treatments for Nebraska's landscapes.

Schedule

The maintenance for this plan will be directed by the county boards in the CWPP region and coordinated with local fire officials and resource managers. Counties or their representatives will review the plan on an annual basis to evaluate progress, re-evaluate priorities for action items, and recommend updates as needed.

Review of the strategy recommendations will be necessary as various projects or tasks are accomplished and the at-risk areas decline in hazard rating. Review will also be needed as infrastructure needs change or are met and should include representation of stakeholders who participated in the development of this plan.

A complete update of the plan every five years is recommended because infrastructure needs, population, and land use can change, fuels reduction projects are completed, emergency services in outlying areas may expand, data are updated, and areas of extreme wildfire hazard decline or increase.

Monitoring

Continued public involvement is needed to accomplish many of these recommendations. It is important that the process allows for continued collaboration with stakeholders on how best to meet their needs, while at the same time achieving the objectives of this plan. Agency stakeholders will monitor their efforts according to their internal protocol, documenting accomplishments and redesigning strategies as needed.

Evaluation

Annual assessment of the identified tasks is very important to determine whether or not progress is being made. Units of measure to be considered when updating the plan in the future for the purpose of reporting accomplishments are listed below:

1. Number of projects or activities accomplished which aid fire agency/emergency service response time
2. Number of transportation issues resolved that improve road systems for access, ingress/egress
3. Number of water sources added or upgraded to improve firefighting response
4. Number of pieces/types of equipment obtained
5. Number of firefighters and fire departments receiving training courses; training hours received
6. Number of properties/acres treated for fuels reduction and type(s) of treatment used
7. Number of new or retrofitted ignition-resistant structures
8. Number of events with prevention message delivery, number of prevention courses attended/conducted, number of news releases or prevention campaigns conducted, and number of prevention team meetings held
9. Number of partners/agencies/groups involved
10. Number of people contacted (meetings, courses, etc.) and number of educational items distributed (brochures, etc.)

Each participating agency/organization can assess their activities and projects using the units of measure listed above to determine progress. This plan does not function as a means of bypassing the individual processes and regulations of the participating agencies. Each project must adhere to any pertinent local, state and federal rules. The CWPP is a coordinating document for activities related to education and outreach, information development, fire protection, and fuels treatment.

Endnotes

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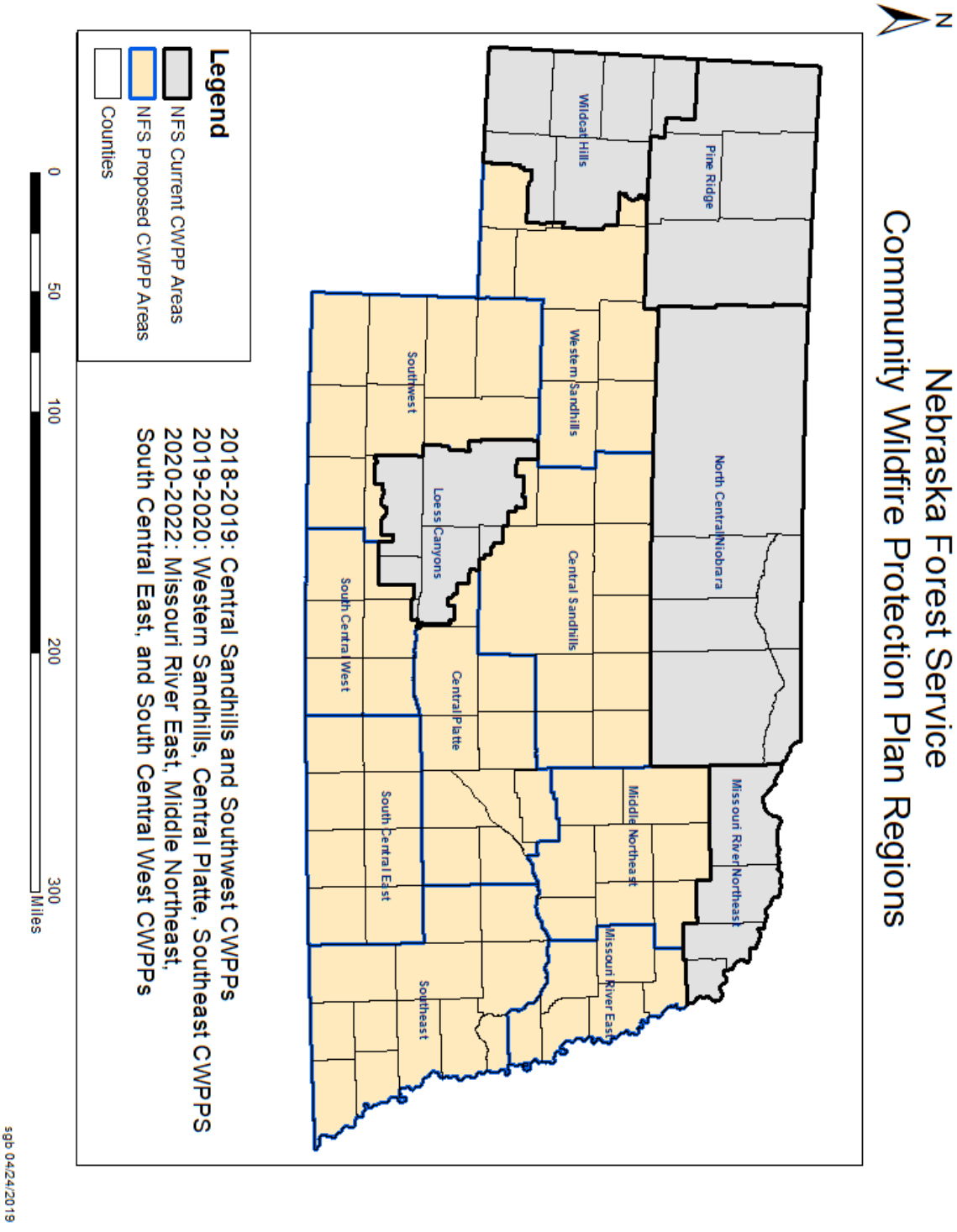
List of Appendices

Appendix A

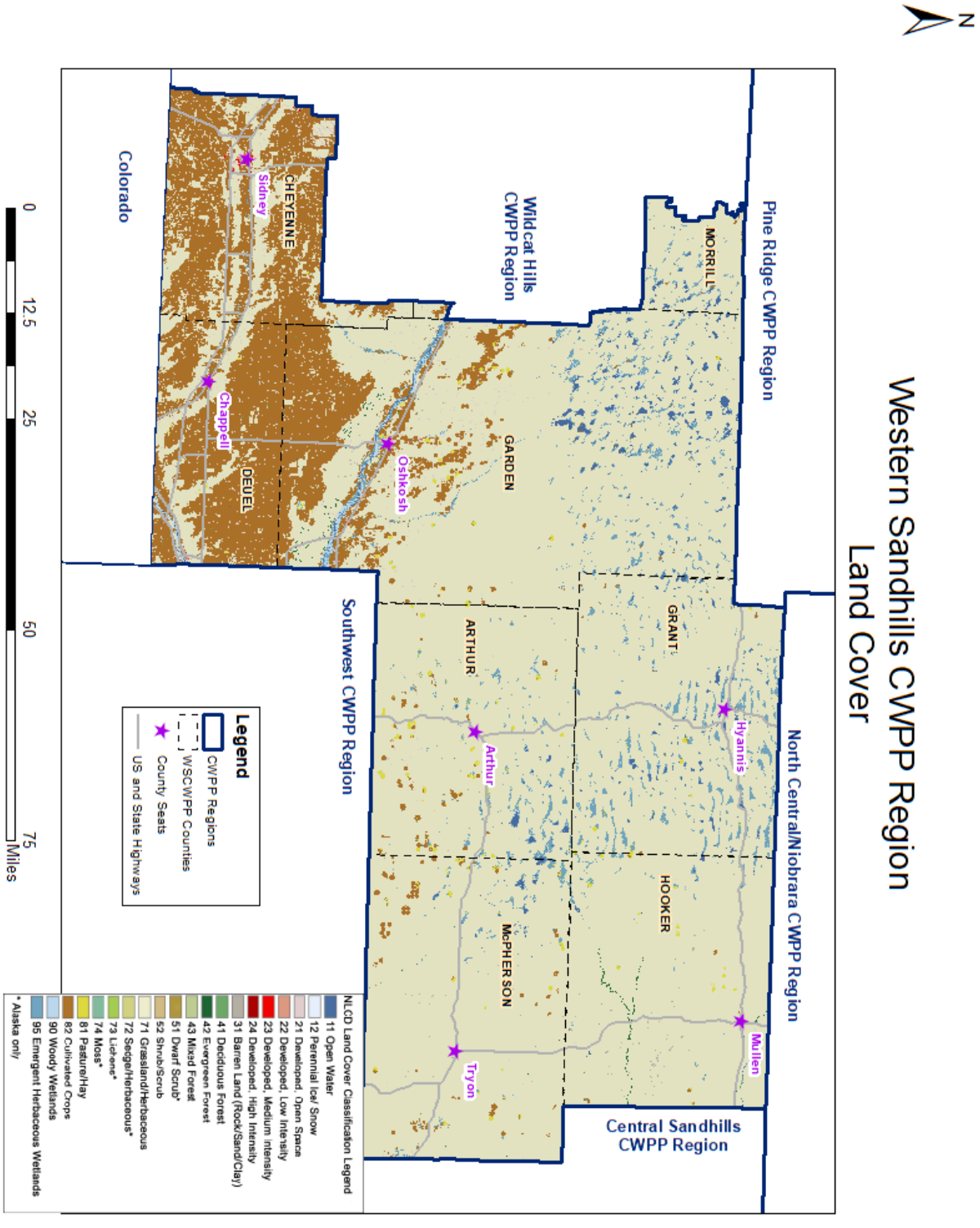
Maps

1. Nebraska CWPP Regions
2. Western Sandhills CWPP Land Cover
3. Nebraska Local Mitigation Planning Areas
4. Western Sandhills CWPP Local Emergency Management Areas
5. Western Sandhills CWPP Areas of Special Concern
6. Western Sandhills CWPP Irrigation Canals: North Platte River
7. Western Sandhills CWPP Irrigation Canals: South Platte River

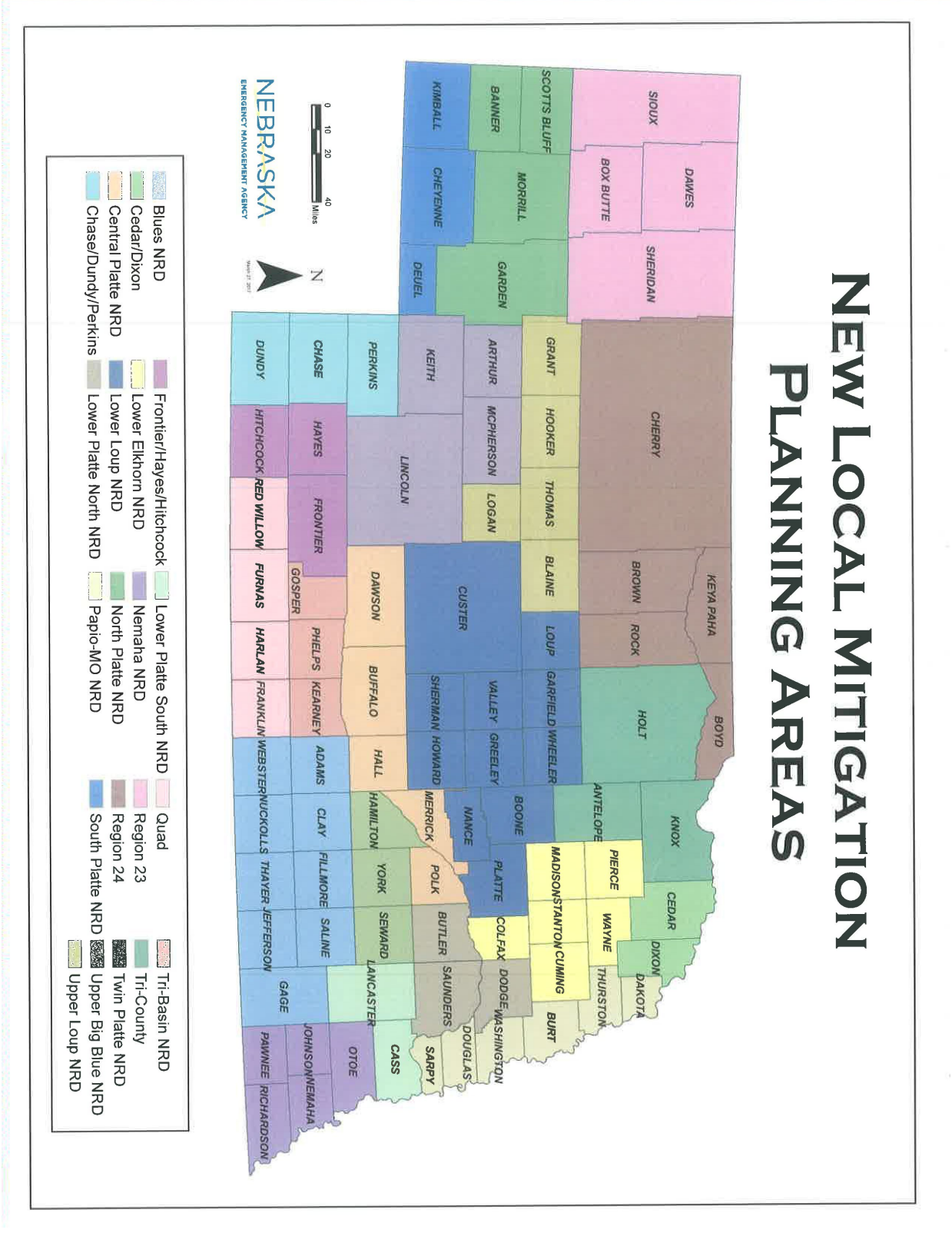
Map 1: Nebraska Community Wildfire Protection Plan Regions



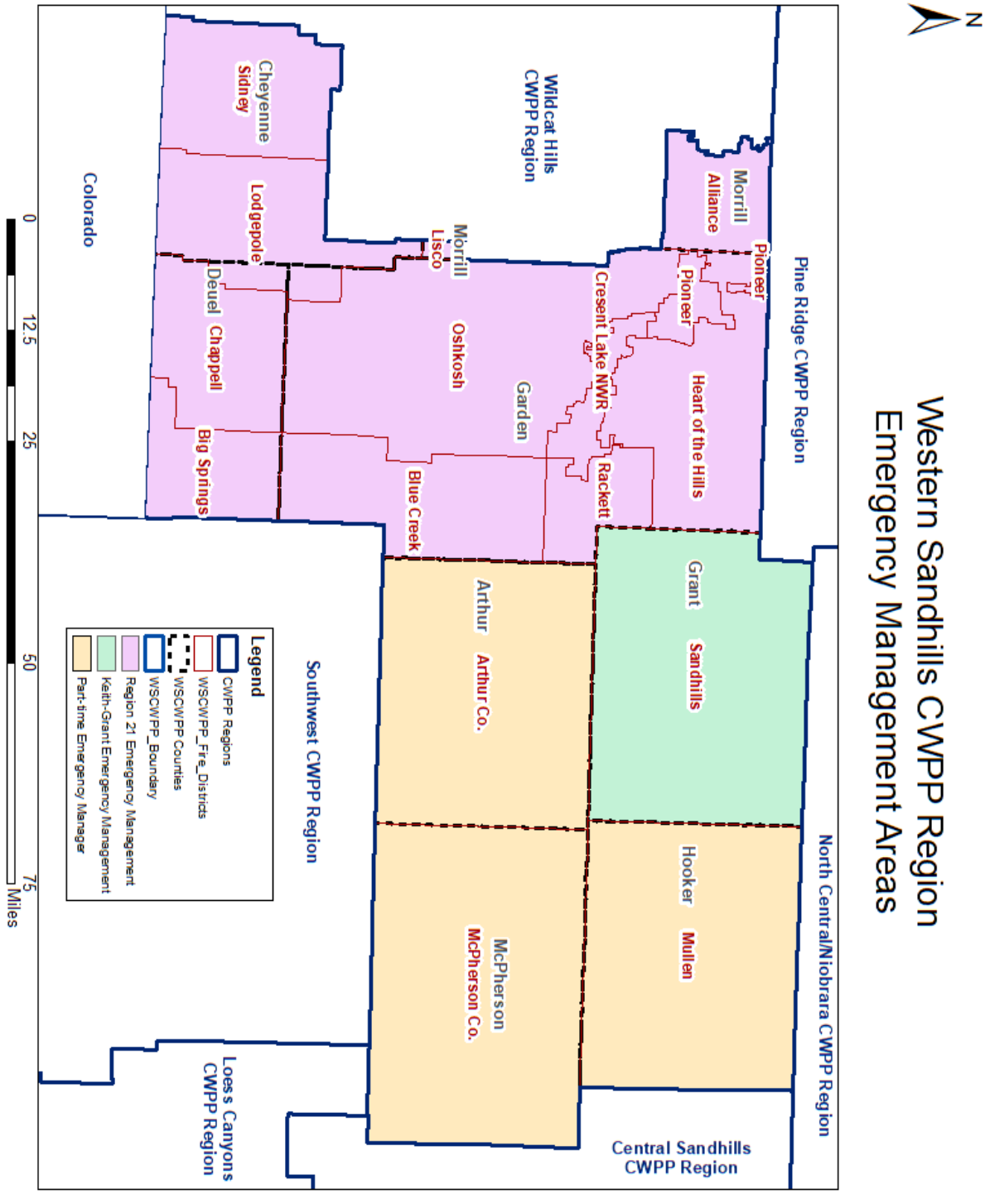
Map 2: Western Sandhills CWPP Land Cover



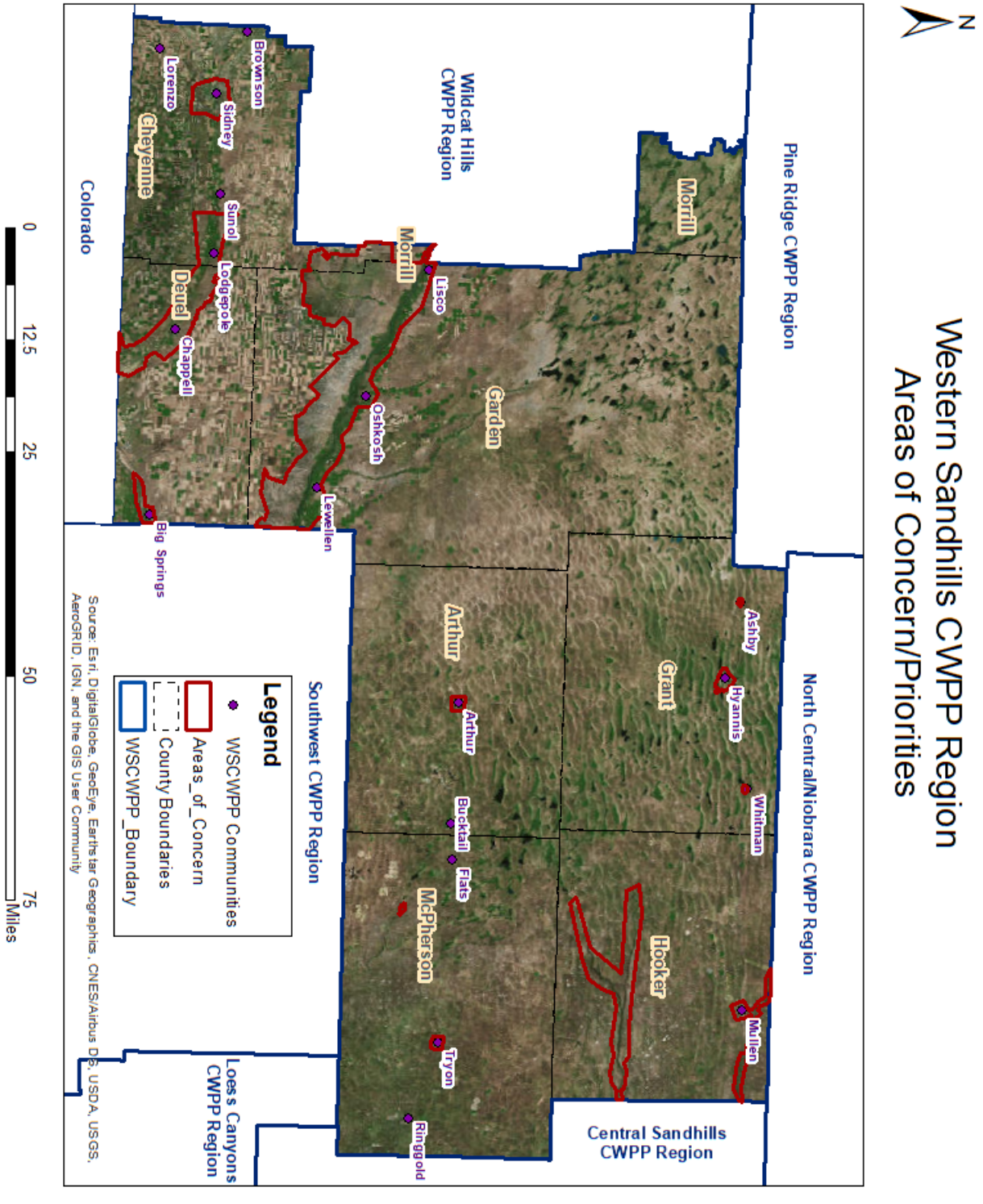
Map 3: Nebraska Local Mitigation Planning Areas



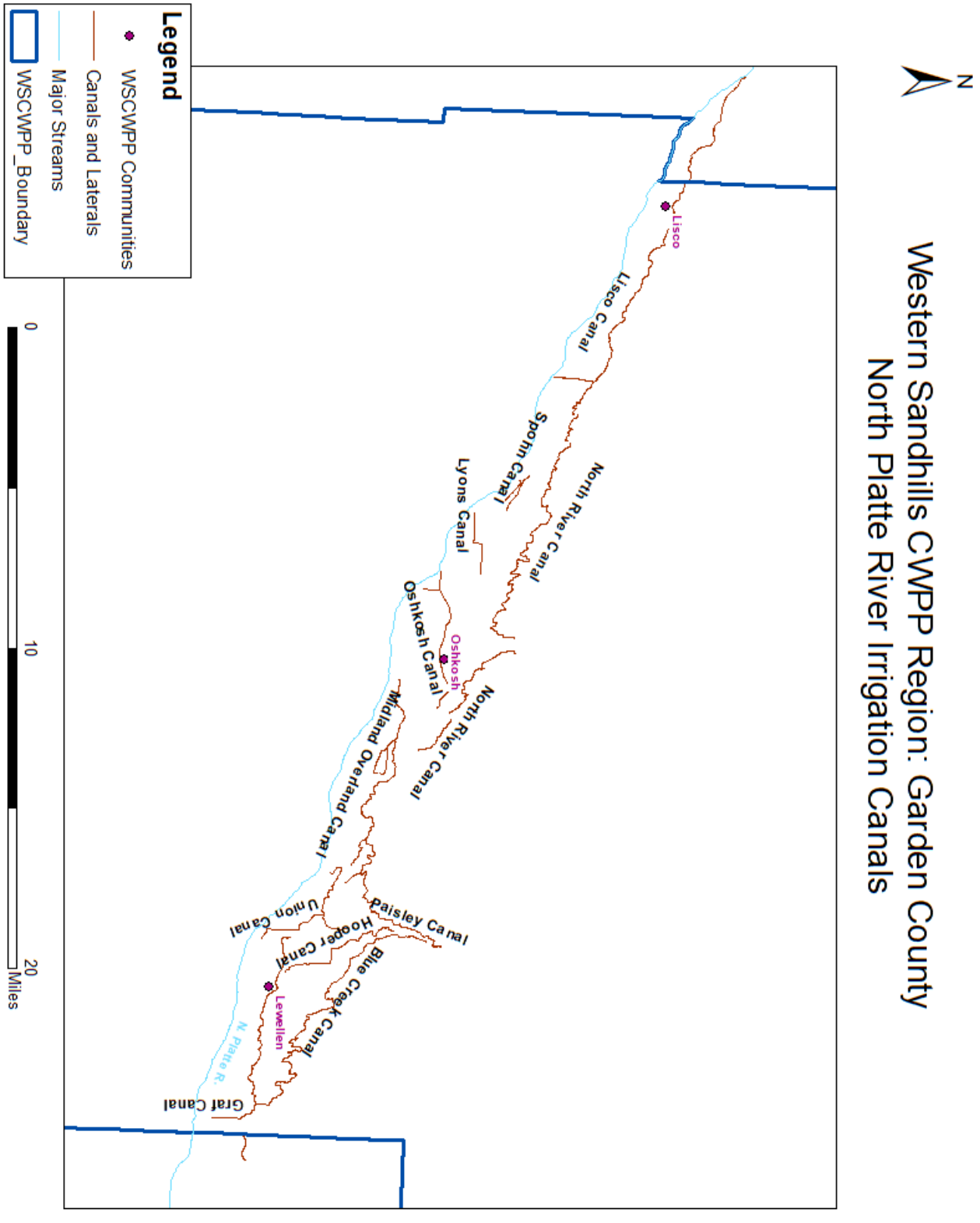
Map 4: Local Emergency Management Areas



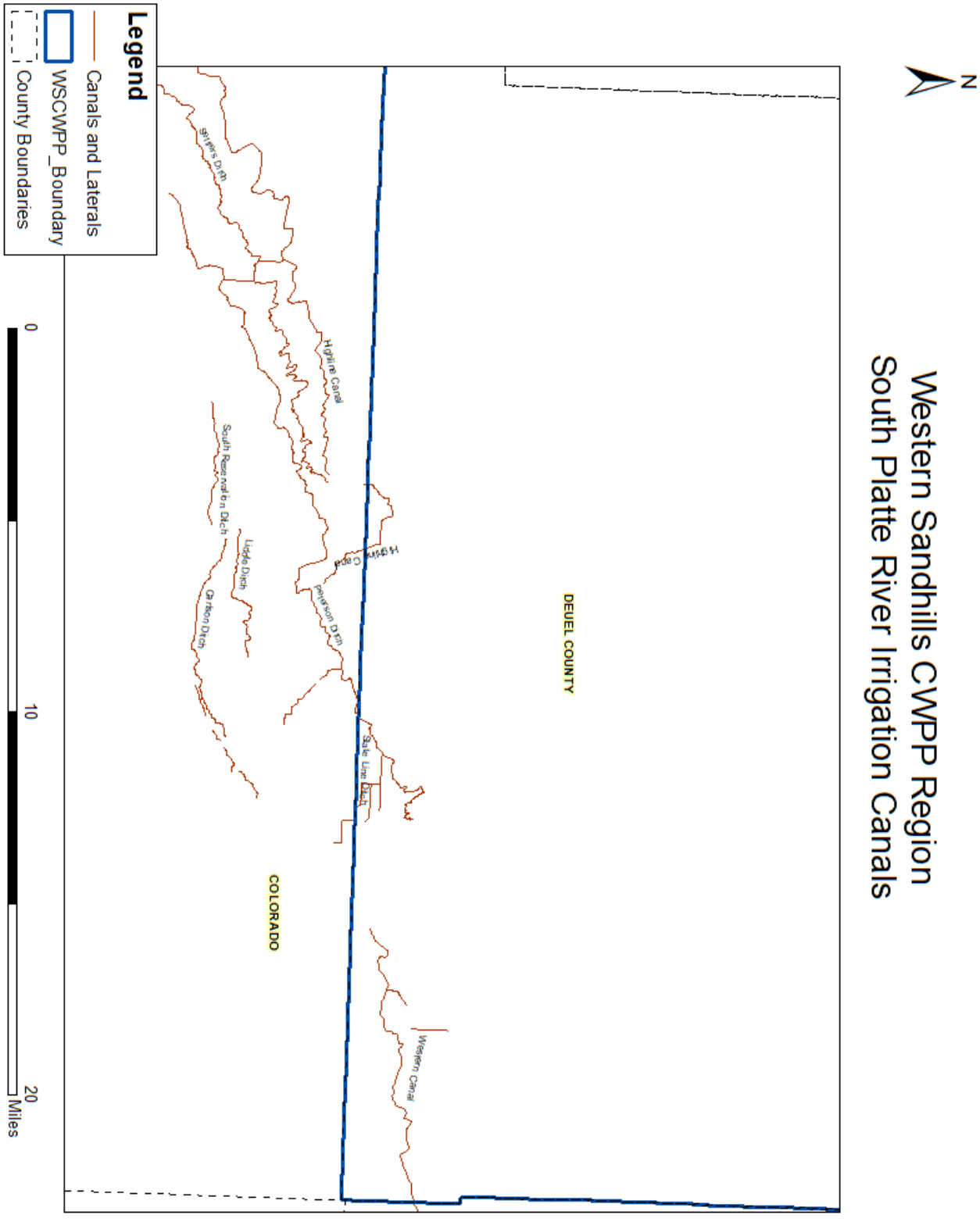
Map 5: Western Sandhills CWPP Areas of Concern



Map 6: WSCWPP Irrigation Canals North Platte River



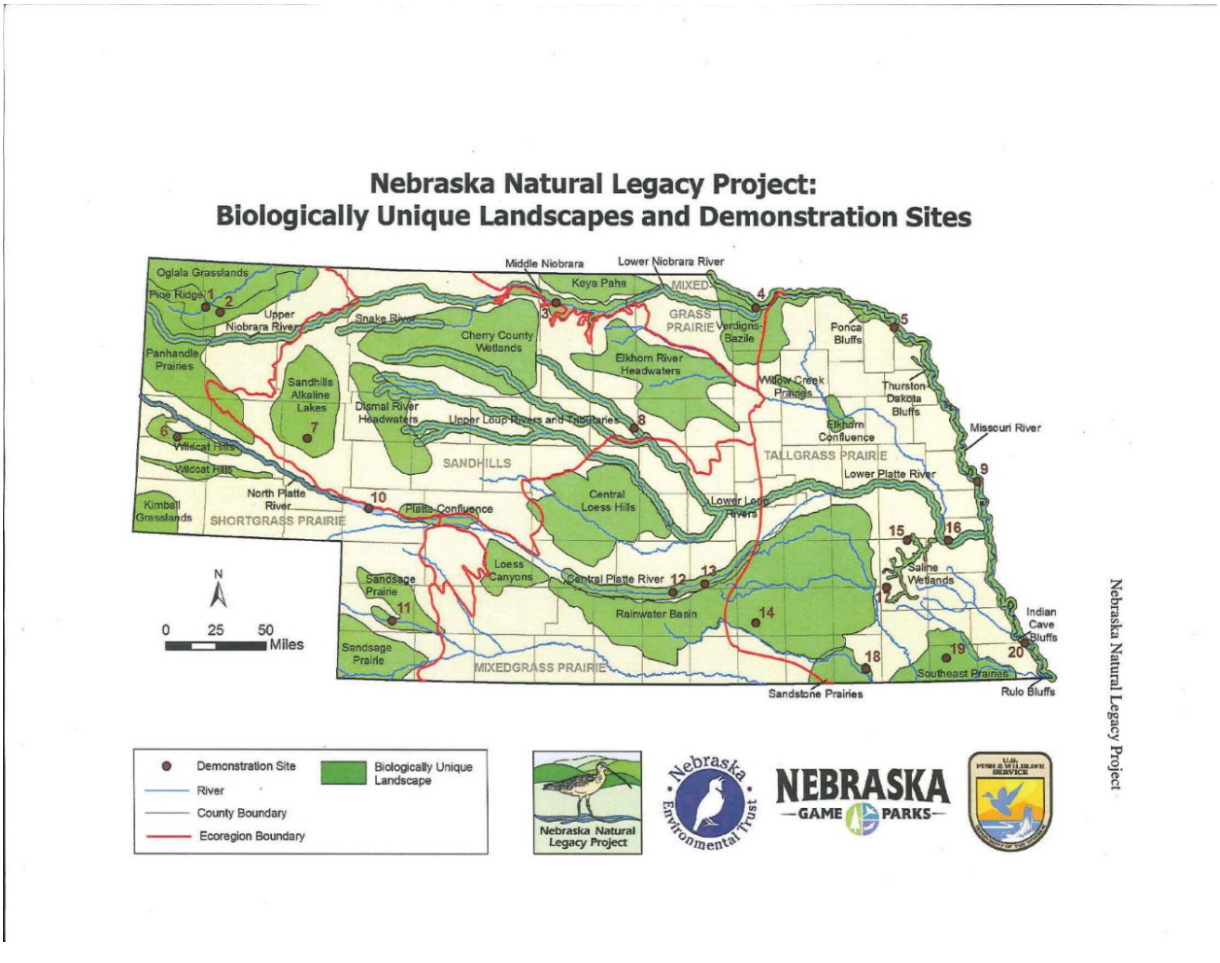
Map 7: WSCWPP Irrigation Canals South Platte River



Appendix B

Map of Biologically Unique Landscapes in Nebraska
Nebraska Natural Legacy Project

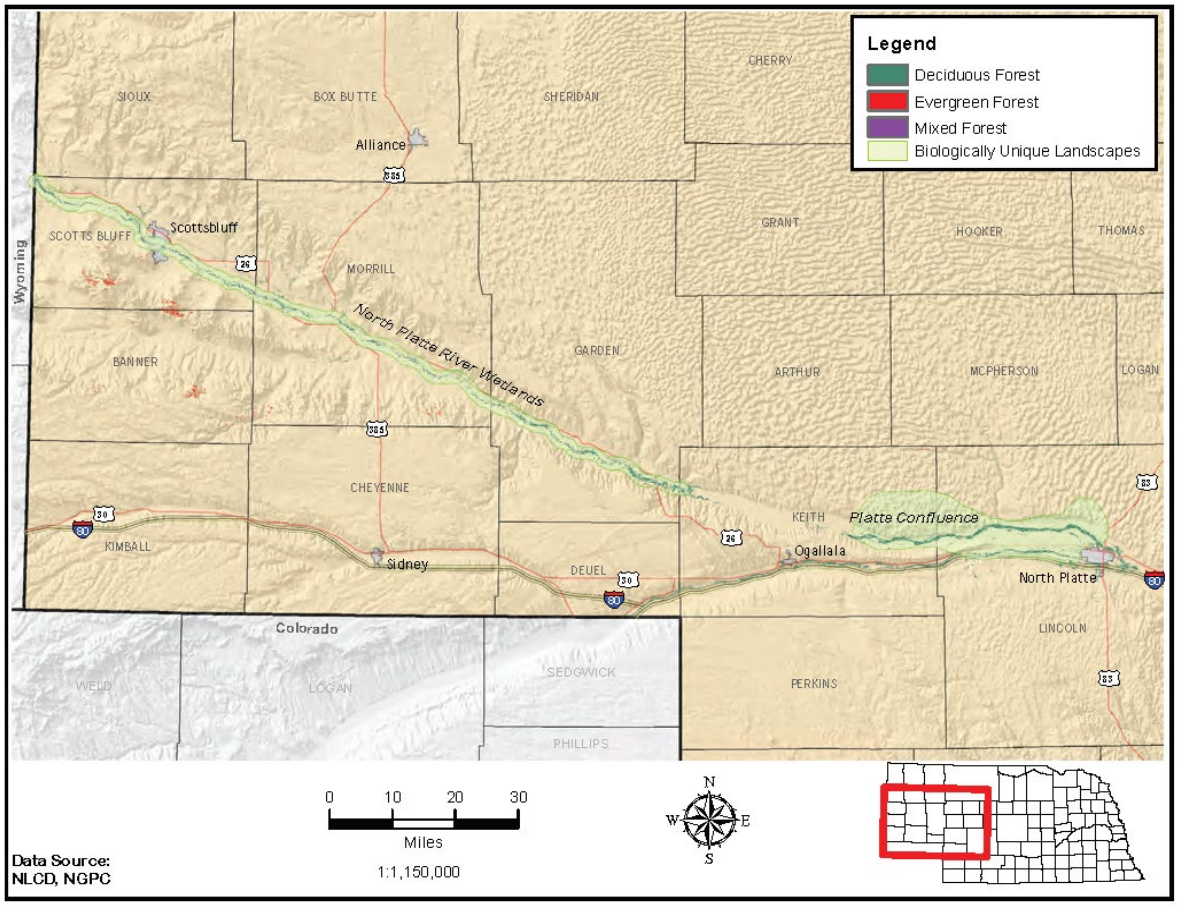
The full document is available at:
http://outdoornebraska.gov/wp-content/uploads/2015/09/NebraskaNaturalLegacyProject2ndEdition.pdf



Appendix C

The Nebraska Forest Action Plan identifies the Western Platte River region as a Priority Forest Landscape

Figure 49. Priority Forest Landscape: Western Platte River



A full description of Nebraska's Priority Landscapes is found on pages 75-98 of the Nebraska Forest Action Plan

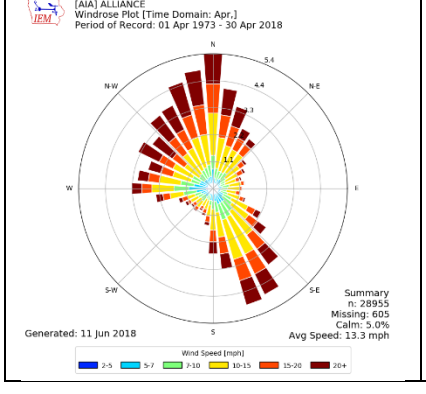
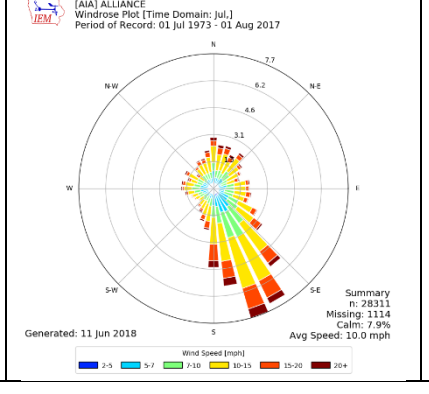
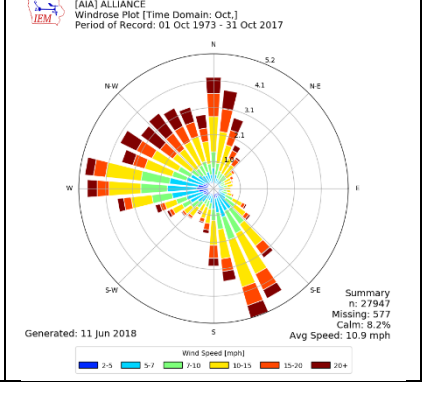
https://nfs.unl.edu/statewide-forest-action-plan

Appendix D

Wind Roses
For Selected Cities
in or near the Western Sandhills CWPP Region

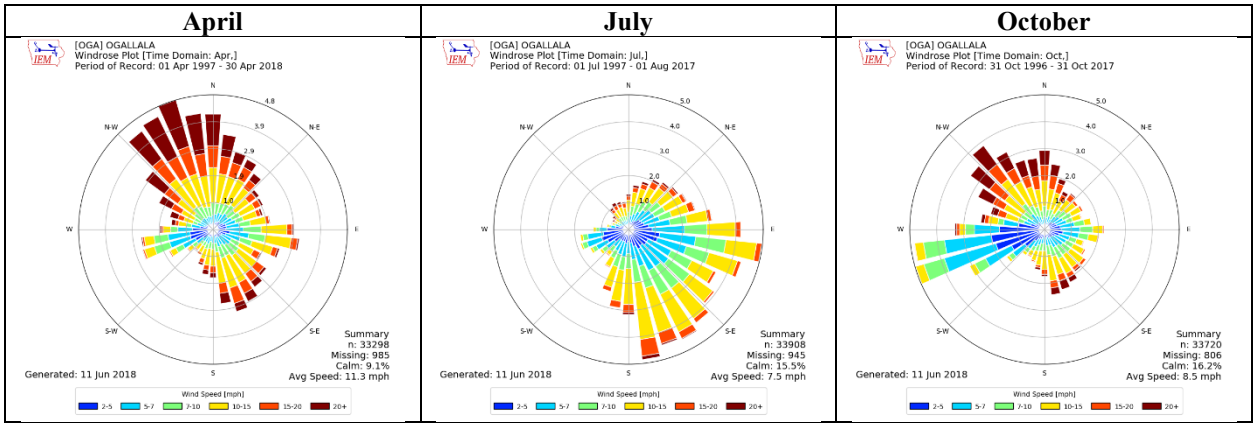
a. Alliance
b. Ogallala
c. Sidney
d. Thedford

Alliance, Nebraska
Wind Direction and Speed 1973-2018

April	July	October
		

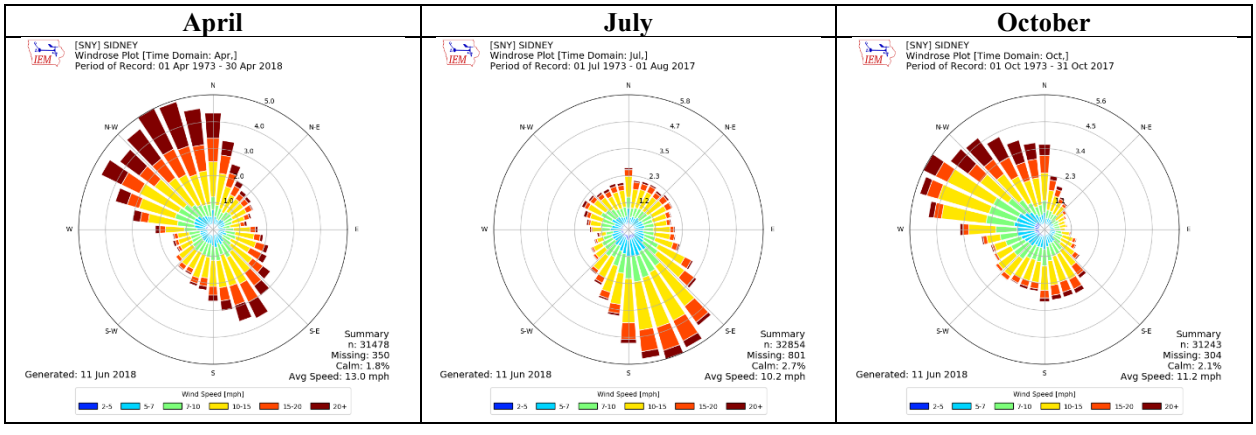
Ogallala, Nebraska

Wind Direction and Speed 1973-2018



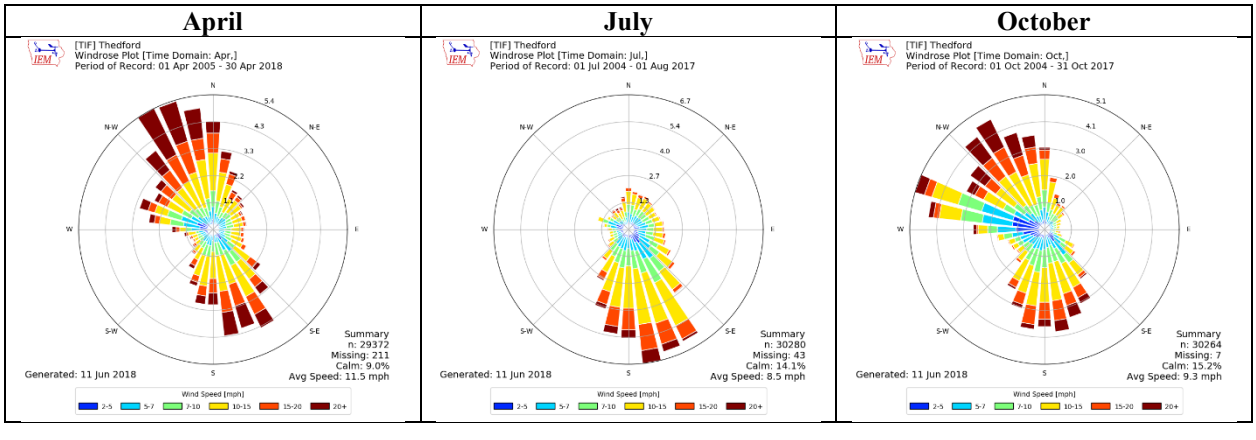
Sidney, Nebraska

Wind Direction and Speed 1973-2018



Thedford, Nebraska

Wind Direction and Speed 1973-2018



Appendix E

The Multi-Jurisdictional Hazard Mitigation Plans covering the Western Sandhills CWPP counties can be viewed at the following online locations:

a. North Platte NRD
   https://jeo.com/sites/default/files/inline-files/NorthPlatteNRD-UpfrontSections.pdf_min.pdf
b. South Platte NRD
   https://jeo.com/sites/default/files/inline-files/1-South-Platte-NRD-HMP-Upfront.pdf_min.pdf
c. Twin Platte NRD
   http://www.tpnrd.org/wp-content/uploads/1.-Upfront.pdf
d. Upper Loup NRD
   https://jeo.com/sites/default/files/inline-files/Upper-Loup-NRD-Hazard-Mitigation-Plan-Final-.pdf

Appendix F

Nebraska Mutual Aid Districts

Nebraska Mutual Aid Associations

Updated 1/11/2019

3 & 33 MA	**40 - 12 MA**	**Big 8 MA**	**Big 9 MA**
Adams	Bloomfield	Bellwood	Belden
Barneston	Brunswick	Columbus	Carroll
Beatrice	Creighton	David City	Coleridge
Beatrice RFD	Crofton	Duncan	Concord
Blue Springs	Magnet	Osceola	Crofton
Clatonia	Neligh	Rising City	Dixon
Cortland	Niobrara	Shelby	Fordyce
Dewitt	Orchard	Stromsburg	Hartington
Diller	Osmond		Laurel
Fairbury RFD	Page		Magnet
Filley	Pierce		Newcastle
Jansen	Plainview		Randolph
Odell	Santee		Wynot
Pickrell	Verdigre		Wausa
Plymouth	Wausa		
Swanton			
Wymore			
Boyd/Holt Counties MA	**Buffalo County MA**	**Burt County MA**	**Butler Co. MA**
Atkinson	Amherst	Craig	Abie
Bartlett	Elm Creek	Decatur	Bellwood
Bristow	Gibbon	Lyons	Brainerd
Butte	Kearney	Oakland	Bruno
Chambers	Miller	Tekamah	David City
Ewing	Pleasanton		Dwight
Lynch	Ravenna		Linwood
Naper	Shelton		Rising City
O'Neill	Buffalo Co. Sheriff's Dept.		Ulysses
Page	Kearney Police Dept.		
Spencer	Buffalo County EM		
Stuart	Good Samaritan Hospital EMS		
Cass Co. MA	**Central Nebraska MA**	**Central Neb. VF Assoc. MA**	**Central Panhandle MA**
Alvo	Ansley	Alma	Alliance
Ashland	Eddyville	Amherst	Banner Co.
Avoca	Mason City	Arapahoe	Bayard
Cedar Creek	Miller	Axtell	Bridgeport
Eagle	Oconto	Bertrand	Broadwater
Elmwood	Sumner	Elm Creek	Dalton
Greenwood		Franklin	Gurley
Louisville		Funk	Heart of the Hills
Murdock		Gibbon	Lisco/Garden Co.
Murray		Hildreth	Oshkosh/Garden Co.
Nehawka		Holdrege	Rackett
Plattsmouth		Kearney	USFWS NP Refuge
Union		Loomis	
Weeping Water		Miller	
		Minden	
		Naponee	
		Orleans	
		Overton	
		Oxford	
		Red Cloud	
		Republican City	
		Stamford	
		Upland	
		Wilcox	

Cherry County MA	**Colfax County MA**	**Cuming County MA**	**Custer County MA**
Ainsworth Barley RFD Cody Colome, SD Kilgore Merriman Mid-Cherry RFD Mission, SD Mullen St. Francis, SD Thedford US Fish and Wildlife US Forest Service Valentine White River, SD Wood Lake	Clarkson Howells Leigh Schuyler	Bancroft Beemer Pilger West Point Wisner	Anselmo Ansley Arnold Broken Bow Callaway Comstock Mason City Merna Oconto Sargent
Dodge County MA	**Elkhorn Valley MA**	**Fillmore County MA**	**Frenchman Valley MA**
Dodge Fremont Fremont Rural Hooper Nickerson North Bend Scribner Snyder Uehling	Battle Creek Carroll Hadar Hoskins Madison Meadow Grove Norfolk Pierce Stanton Wayne Winside	Bruning Exeter Fairmont Geneva Grafton McCool Junction Milligan Ohiowa Shickley Sutton	Bartley Beaver Valley (Danbury & Lebanon) Benkelman Culbertson Curtis Haigler Hayes Center Imperial Indianola Lamar Maywood/Wellfleet McCook Palisade Red Willow Western Stratton Trenton Wallace Wauneta
Hamilton County MA	**Hastings Area MA**	**KBR&C MA**	**Lancaster County MA**
Aurora Giltner Hampton Hordville Marquette Phillips Hamilton County EMS	Ayr (Hastings RFD) Bladen Blue Hill Campbell Central Community College Edgar Fairfield Glenville Harvard Hastings Hastings CD Holstein Juniata Kenesaw Lawrence Hruska MARC Roseland Trumbull	Ainsworth Bassett Calamus Johnstown Long Pine Newport Raven Springview Wood Lake	Alvo Ashland Bennet Ceresco Clatonia Cortland Crete Douglas Eagle Firth Greenwood Hallam Hickman Lincoln Malcolm NE Air Guard Palmyra Pleasant Dale Raymond Rural Metro Southeast RFD Southwest RFD Valparaiso Waverly

Loup Platte MA	**Loup Platte #2 MA**	**Loup Valley MA**	**Mid-Nebraska MA**
Arcadia	Central City	Arcadia	Albion
Ashton	Chapman	Bartlett	Belgrade
Litchfield	Clarks	Burwell	Cedar Rapids
Loup City	Fullerton	Elba	Columbus
Ravenna	Hordville	Ericson	Columbus RFD
Rockville	Marquette	Greeley	Creston
	Osceola	North Loup	Duncan
	Palmer	Ord	Fullerton
	Polk	Primrose	Genoa
	Shelby	Scotia	Humphrey
	Silver Creek	Spalding	Leigh
	Stromsburg	Wolbach	Lindsay
			Madison
			Monroe
			Newman Grove
			Platte Center
			Silver Creek
			St. Edward
Mid Plains MA	**Nemaha County MA**	**Northeast MA**	**Northeast Fireman's Association**
Arnold	Brock FD	Allen	Antelope Co.
Brady	Brownville FD / Rescue	Bancroft	Burt Co.
Curtis	Johnson FD	Concord	Butler Co.
Hershey	Julian FD	Dakota City	Cedar Co.
Maywood	Nemaha FD / Rescue	Dixon	Colfax Co.
Maxwell	Peru FD / Rescue	Emerson	Cuming Co.
North Platte	Nemaha County Emergency Management	Homer	Dakota Co.
Stapleton	Cooper Nuclear Station	Martinsburg	Dixon Co.
Sutherland	Auburn Police Dept.	Newcastle	Dodge Co.
Tyron	Nemaha County Sheriff's Office	Pender	Douglas Co.
Wallace		Ponca	Knox Co.
Wellfleet		Rosalie	Madison Co.
		South Sioux City	Pierce Co.
		Thurston	Platte Co.
		Wakefield	Stanton Co.
		Walthill	Sarpy Co.
		Wayne	Thurston Co.
		Winnebago	Washington Co.
			Wayne Co.
			Saunders Co.
Otoe County MA	**Phelps County MA**	**Pine Ridge MA**	**Platte Valley MA (was GI Area MA)**
Burr	Bertrand	Alliance	Alda
Cook	Funk	Ardmore, SD 57715	Cairo
Douglas	Holdrege	Chadron	Chapman
Dunbar	Holdrege RFD	Crawford	Doniphan
Nebraska City	Loomis	Gordon	Grand Island
Otoe		Harrison	Grand Island SFD
Palmyra		Hay Springs	Phillips
Syracuse		Hemingford	Wood River
Talmage		Merriman	
Unadilla		Rushville	
		US Forest Service	

Quad Cities MA	**Richardson County MA**	**Saline County MA**	**Sandhills MA**
Alma	Dawson	Crete	Anselmo
Axtell	Falls City	DeWitt	Arnold
Bloomington	Falls City RFD	Dorchester	Arthur
Campbell	Humboldt	Friend	Brewster
Franklin	Rulo	Swanton	Dunning
Hildreth	Salem	Tobias	Halsey
Minden	Shubert	Western	Hyannis
Naponee	Stella	Wilbur	Keystone-Lemoyne
Republican City	Verdon	Saline County Sheriff	McPherson Co.
Riverton		Saline County Emergency Management	Mid-Cherry
Upland			Mullen
Wilcox			Purdum
Kearney County EMA			Stapleton
			Thedford
			US Fish & Wildlife
			US Forest Service
Saunders County MA	**Scottsbluff County MA**	**Seward County MA**	**South Central Nebraska MA**
Ashland	Banner Co.	Beaver Crossing	Brady
Cedar Bluffs	Gering	Bee	Cozad
Ceresco	Henry	Cordova	Curtis
Colon	Lyman	Garland	Elwood
Ithaca	McGrew	Goehner	Eustis
Malmo	Minatare-Melbeta	Milford	Farnam
Mead	Mitchell	Pleasant Dale	Gothenburg
Morse Bluff	Morrill	Seward	Johnson Lake EMS
Prague	Scottsbluff	Staplehurst	Lexington
Valparaiso	Scottsbluff RFD	Tamora	Overton
Wahoo	Scottsbluff Co. Airport	Utica	
Weston	Torrington, WY		
Yutan	US Fish & Wildlife Service		
South Central #2 MA	**Southeast MA**	**Southwest MA**	**Stateline MA**
Clay Center	Adams	Arthur	Bladen
Davenport	Burchard	Big Springs	Blue Hill
Edgar	Cook	Blue Creek	Campbell
Fairfield	Debois	Brule	Guide Rock
Glenvil	Elk Creek	Chappell	Lawrence
Hardy	Johnson	Elsie	Red Cloud
Lawrence	Pawnee City	Grant	Riverton
Nelson	Steinauer	Imperial	Superior
Ong	Sterling	Keystone-Lemoyne	
Ruskin	Table Rock	Lamar	
Shickley	Tecumseh	Lisco	
Superior		Madrid	
Sutton		Ogallala	
Clay County Emergency Management		Oshkosh	
		Paxton	
		Sutherland	
		Venango	
		Wallace	

Thayer County MA	**Tri-Mutual Aid**	**Tri-Valley MA**	**Twin Loups MA**
Alexandria	Arlington	Arapahoe	Ashton
Belvidere	Bellevue	Bartley	Boelus
Bruning	Bennington	Beaver City	Dannebrog
Byron	Blair	Cambridge	Elba
Carlton	Boys Town	Edison	Farwell
Chester	Carter Lake	Holbrook	Rockville
Davenport	Cedar Bluffs	Oxford	St. Libory
Deshler	Elkhorn	Stamford	St. Paul
Eustis	Eppley Airport	Wilsonville	
Gilead	Fremont		
Hebron	Ft. Calhoun		
Hubbell	Gretna		
	Irvington		
	Kennard		
	LaVista		
	Louisville		
	Millard		
	Offutt AFB		
	Omaha FD		
	Papillion		
	Plattsmouth		
	Ponca Hills		
	Ralston		
	Springfield		
	Valley		
	Waterloo		
	Yutan		
Washington County MA	**York County MA**		
Arlington	Benedict		
Blair	Bradshaw		
Ft. Calhoun	Gresham		
Herman	Henderson		
Kennard	McCool Junction		
	Waco		
	York		

Appendix G

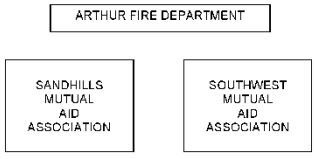
Fire Department Equipment and Contact Information for the Western Sandhills Nebraska CWPP Region

This section includes Annex F from county Local Emergency Operations Plans plus additional information from the departments that responded to the CWPP questionnaire

Arthur County

Information from Arthur Co. LEOP, Annex F:

FIRE SERVICES



STATE SUPPORT:
Emergency Support Functions
4, 5, 10,
Fire Suppression,
Emergency Management,
Environmental Quality

Lead Agencies:
State Fire Marshal

Nebraska Emergency Management Agency,

F-1

2012

ARTHUR COUNTY FIRE RESOURCES
(List numbers of equipment)

FIRE DEPARTMENT	PHONE	AERIAL	PUMPER	TANKER	PUMPER/ TANKER	GRASS-WEED TRUCK	UTILITY TRUCK	RESCUE UNITS	KINDS/TYPES/ SPECIAL-TEAMS	KINDS/TYPES SPECIAL EQUIPMENT	RADIO-LOGICAL EQUIPMENT Yes / No
Arthur County Rural Fire Protection District	911					2	1	1			Yes
Nearest HAZMAT Response Team	532-5753										

F-11

2012

ARTHUR COUNTY LEOP

ANNEX F
ATTACHMENT 1

Survey Responses from Arthur County Fire Departments:

(None received)

Cheyenne County

Information from Cheyenne Co. LEOP, Annex F:

FIRE SERVICES

SIDNEY FIRE DEPARTMENT

POTTER FIRE DEPARTMENT

DALTON FIRE DEPARTMENT

GURLEY FIRE DEPARTMENT

LODGEPOLE FIRE DEPARTMENT

STATE SUPPORT:
Emergency Support Functions
4, 5, 10,
Fire Suppression,
Emergency Management,
Environmental Quality

Lead Agencies:
State Fire Marshal
Nebraska Emergency Management Agency
Dept. of Environmental Quality

CHEYENNE COUNTY FIRE RESOURCES

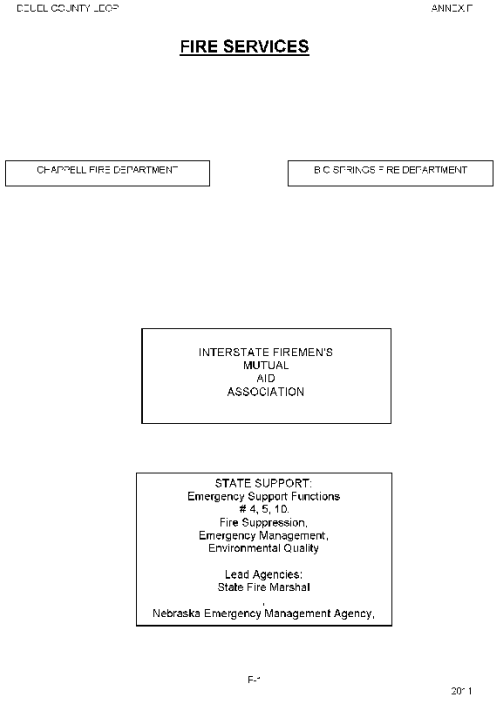
FIRE DEPARTMENT	PHONE	AERIAL	PUMPER	TANKER	PUMPER/ TANKER	GRASS-WEED TRUCK	UTILITY TRUCK	RESCUE UNITS	KINDS/TYPES/ SPECIAL-TEAMS	KINDS/TYPES SPECIAL EQUIPMENT	RADIO-LOGICAL EQUIPMENT Yes/No
Sidney VFD	308.249.1948	1	2	2	0	3	2	0	0	Extrication	2
Potter VFD	308.249.1597	0	2	3	1	3	1	1	0	Extrication	2
Dalton VFD	308.250.5105	0	1	2	0	3	0	1	0	Extrication	2
Gurley VFD	308.249.2968	0	1	2	0	2	0	1	0	0	0
Lodgepole VFD	308.249.2476	0	2	2	0	2	1	0	0	Bags/Air	2
Regional HAZMAT Response Teams	Scottsbluff 308.630.6231										
	North Platte 308.535.6762										
NEMA – State Emergency Response Team	402.471.7176										

Survey Responses from Cheyenne County Fire Departments:

(None received)

Deuel County

Information from Deuel Co. LEOP, Annex F:


DEUEL COUNTY LEOP ANNEX F

FIRE SERVICES

CHAPPELL FIRE DEPARTMENT

BIG SPRINGS FIRE DEPARTMENT

INTERSTATE FIREMEN'S MUTUAL AID ASSOCIATION

STATE SUPPORT:
Emergency Support Functions
4, 5, 10.
Fire Suppression,
Emergency Management,
Environmental Quality

Lead Agencies:
State Fire Marshal

Nebraska Emergency Management Agency,

F-

20 1

DEUEL COUNTY FIRE RESOURCES
(List numbers of equipment)

FIRE DEPARTMENT	PHONE	AERIAL	PUMPER	TANKER	PUMPER/ TANKER	GRASS-WEED TRUCK	UTILITY TRUCK	RESCUE UNITS	KINDS/TYPES/ SPECIAL - TEAMS	KINDS/TYPES SPECIAL EQUIPMENT	RADIO-LOGICAL EQUIPMENT Yes / No
Chappell	874-3210	0	2	2	0	1	1			2	2
Big Springs	NONE	0	1	1	0	2	1			2	4
Nearest HAZMAT Response Team											
North Platte											

DEUEL COUNTY LEOP

F-11

2011

ANNEX F
ATTACHMENT 1

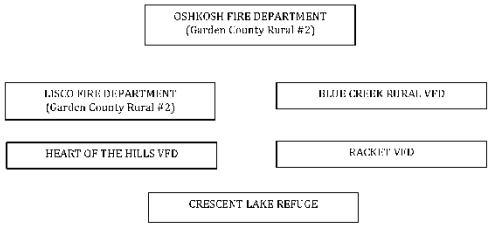
Survey Responses from Deuel County Fire Departments:

(None received)

Garden County

Information from Garden Co. LEOP, Annex F:

FIRE SERVICES



STATE SUPPORT:
Emergency Support Functions
4, 5, 10.
Fire Suppression,
Emergency Management,
Environmental Quality

Lead Agencies:
State Fire Marshal
Nebraska Emergency Management Agency
Dept. of Environmental Quality

GARDEN COUNTY FIRE RESOURCES

FIRE DEPARTMENT	PHONE	AERIAL	PUMPER	TANKER	PUMPER/ TANKER	GRASS-WEED TRUCK	UTILITY TRUCK	RESCUE UNITS	KINDS/TYPES/ SPECIAL-TEAMS	KINDS/TYPES SPECIAL EQUIPMENT	RADIO-LOGICAL EQUIPMENT Yes / No
Oshkosh VFD	308.772.3540		2	2		4	1			JAWS	Y
Lisco VFD	308.772.3540			1		2					Y
Blue Creek VFD	308.772.3540		1	2		5	1			JAWS	Y
Heart of the Hills VFD				1		9					
Racket VFD	308.577.6333			1		5					
Crescent Lake Refuge	308.762.4893					2					
Regional HAZMAT Response Teams	Scottsbluff 308.630.6231										
	North Platte 308.535.6762										
NEMA – State Emergency Response Team	402.471.7176										

Survey Responses from Garden County Fire Departments:

Garden County Fire District (Oshkosh and Lisco):

County	Garden		
Station Location	104 W. 1st St. (POB 403)		Oshkosh 69154
Dept. phone & email	308-778-6243		quinnjp10@gmail.com
Chief	Joe Quinn	308-778-6243	quinnjp10@gmail.com
Asst. Chief	Charles Chadwick	308-778-6094	
Secretary	Missy Quinn	308-778-6768	
Treasurer	Chris Loomis	308-778-6148	

Personnel

Number	Type
23	Volunteer

Equipment (housed at fire dept. or county equipment barn)

Number	Type
1	Engine Type 1: minimum 1,000 GPM, 400 gal. cap., 4 crew members
1	Type 2 Structural: 500 GPM, 300 gal. capacity, three crew members
1	Type 3 Wildland: 150 GPM, 500 gal. capacity, three crew members
5	Type 6: Wildland: 50 GPM, 150 gal. capacity, two crew members
Tenders	
1	T-1 (tactical): 250 GPM pump, 2,000 gallon capacity, 2 crew members
2	T-2 (tactical): 250 GPM pump, 1,000 gallon capacity, 2 crew members
1	Equipment Truck

Equipment housed away from main barn? Yes
1 Type 6 engine is stationed northeast of Oshkosh
2 Type 6 engine and 1 T-2 Tender are stationed at Lisco

Have you identified any areas in your district that you are more concerned about than others if a wildfire starts nearby? Yes
Location: All ranches in the hills are vulnerable with grassland surrounding them
Issues:

Difficult access
Rough terrain
Heavy fuels – at times
Lack of water within effective distance

Bridges that won't support equipment weight: No
GIS layer & contact info: No
Greatest concerns: Getting enough mutual aid and tenders

Rank:

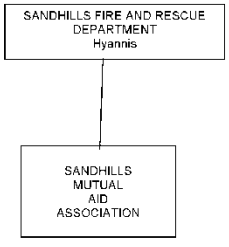
4 **Housing**
3 **Infrastructure**
5 **Bridge limits**
2 **Hydrants**
1 **Other water sources**

Mutual Aid District(s): Southwest and Central Panhandle

Grant County

Information from Grant Co. LEOP, Annex F:

FIRE SERVICES



STATE SUPPORT:
Emergency Support Functions
4, 5, 10,
Fire Suppression,
Emergency Management,
Environmental Quality

Lead Agencies:
State Fire Marshal
and
Nebraska Emergency Management Agency.

GRANT COUNTY FIRE RESOURCES
(List numbers of equipment)

FIRE DEPARTMENT	PHONE	AERIAL	PUMPER	TANKER	PUMPER/ TANKER	GRASS-WEED TRUCK	UTILITY TRUCK	RESCUE UNITS	KINDS/TYPES/ SPECIAL-TEAMS	KINDS/TYPES SPECIAL EQUIPMENT	RADIO-LOGICAL EQUIPMENT Yes / No
Hyannis	911		1	3		10	1	2		1 thermal imaging camera	No
Nearest HAZMAT Response Team											
North Platte											
Scottsbluff											

Survey Responses from Grant County Fire Departments:

Sandhills Fire Protection District:

County	Grant			
Station Location	102 South Grant Ave. (PO Box 330)		Hyannis 69350	
Dept. phone & email	308-458-2763			
Chief	Darrel Seidler	308-458-8200	308-458-2424	drrepairinc@gmail.com
Asst. Chief	Jeremy Holthus	308-458-8349	308-458-2356	
Secretary	Delores Brennemann		308-458-2739	dbrenne@nebnet.net
Treasurer	Jerry Merrihew	308-577-6350		jmerrihew@bbcwb.net

Personnel

Number	Type
30	Volunteer

Equipment (housed at fire dept. or county equipment barn)

Number	Type
1	Engine Type 1 Structural: 1,000 GPM, 300 gal. capacity, four crew members
6	Type 6: Wildland: 50 GPM, 150 gal. capacity, two crew members
3	T-2 (tactical) Tender: 250 GPM pump, 1,000 gallon capacity, 2 crew members
1	Command vehicle

Equipment housed away from main barn? Yes
2 Type 6 & tender at Ashby
2 Type 6 & tender at Hyannis
2 Type 6 & tender at Whitman

Have you identified any areas in your district that you are more concerned about than others if a wildfire starts nearby? No

Bridges that won't support equipment weight: No

GIS layer & contact info:

Greatest concerns: Water supply

Rank:
3 **Housing**
4 **Infrastructure**
5 **Bridge limits**
2 **Hydrants**
1 **Other water sources**

Mutual Aid District(s): Sandhills Mutual Aid

Hooker County

Information from Hooker Co. LEOP, Annex F:

FIRE SERVICES

MULLEN FIRE DEPARTMENT

SANDHILLS MUTUAL AID ASSOCIATION

CHERRY COUNTY MUTUAL AID ASSOCIATION

STATE SUPPORT:
Emergency Support Functions
4, 5, 10,
Fire Suppression,
Emergency Management,
Environmental Quality

Lead Agencies:
State Fire Marshal

Nebraska Emergency Management Agency,
Dept. of Environmental Quality

HOOKER COUNTY FIRE RESOURCES
(List numbers of equipment)

FIRE DEPARTMENT	PHONE	AERIAL	PUMPER	TANKER	PUMPER/ TANKER	GRASS-WEED TRUCK	UTILITY TRUCK	RESCUE UNITS	KINDS/TYPES/ SPECIAL-TEAMS	KINDS/TYPES SPECIAL EQUIPMENT	RADIO-LOGICAL EQUIPMENT Yes / No
Mullen Fire Department	546-2400		2	2		8	2	2		1 Scene light Trailer	NO
Nearest HAZMAT Response Team											

Survey Responses from Hooker County Fire Departments:

Mullen Fire Department:

County	Hooker, Cherry			
Station Location	501 SW 1st St.		Mullen 69152	
Dept. phone & email	308-546-2400		mechanics_1999@yahoo.com	
Chief	Josh Barnes	308-546-0569	mechanics_1999@yahoo.com	
Asst. Chief	Dan Daly	308-546-9391	308-546-2651	dddaly@nebnet.net
Sec./Treas.	Don Earl	308-546-7401		earlfam@nebnet.net

Personnel

Number	Type
14	Volunteer

Equipment (housed at fire dept. or county equipment barn)

Number	Type
2	Engine Type 1 Structural: 1,000 GPM, 300 gal. capacity, four crew members
5	Engine Type 6: Wildland: 50 GPM, 150 gal. capacity, two crew members
1	Engine Type 7: Wildland: 10 GPM, 50 gal. capacity, two crew members
2	Tender T-2 (tactical): 250 GPM pump, 1,000 gallon capacity, 2 crew members
1	Rescue Trucks
1	Light trailer with generator

MAD(s): Sandhills MA, Cherry County MA

Equipment housed away from main barn? Yes, 2 Type 6 engines stationed in rural locations

Have you identified any areas in your district that you are more concerned about than others if a wildfire starts nearby? Yes

Location #s 1&2: Dismal River Valley, Middle Loup Valley. The Dismal River is very steep and heavily timbered with very little or no access. The Middle Loup River is also rugged and has limited access.

Issues:

Multiple structures
Difficult access
Rough terrain
Heavy fuels

Location #s 3&4: Sandhills Golf Club clubhouse and cabins sit on the north fork of the Dismal River with only golf cart paths for access. Heavily timbered around cabins and clubhouse. The Dismal River Golf Club is in a remote area with a large fuel load surrounding the premises and clubhouse.

Issues:

Multiple structures
Difficult access
Rough terrain
1 way in/out
Heavy fuels
Lack of water within effective distance

Other areas with high home density, infrastructure or other resources at high risk, or populated areas with one way in/out: Village of Mullen

Bridges that won't support equipment weight: Yes. There ae some untested, private bridges with unknown weight limits, crucial to river crossings. Other culverts that also have unknown weight limits.

GIS layer & contact info: Deb Daly, 308-546-2625, mullenclerk@nebnet.net (emailed for info 2/22/19)

Greatest concerns: Structure protection for wildland fires. Grass for grazing causing economic impacts.

Rank:

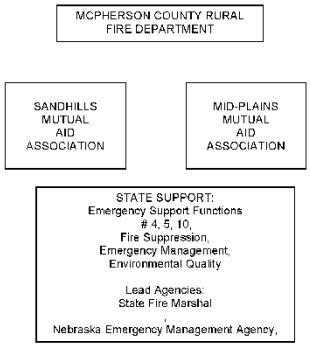
2 **Housing**
4 **Infrastructure**
5 **Bridge limits**
3 **Hydrants**
1 **Other water sources**

Comments: Mullen has the largest fire district in the state in area. Many types of topography, much of which is difficult to access. Many fires require hours of response time to scene; especially at night in unfamiliar locations. There are limited roads for access in most parts of the district.

McPherson County

Information from McPherson Co. LEOP, Annex F:

FIRE SERVICES



--1 2017

MCPHERSON COUNTY FIRE RESOURCES

FIRE DEPARTMENT	PHONE	AERIAL	PUMPER	TANKER	PUMPER/ TANKER	GRASS-WEED TRUCK	UTILITY TRUCK	RESCUE UNITS	KINDS/TYPES/ SPECIAL-TEAMS	KINDS/TYPES SPECIAL EQUIPMENT	RADIO-LOGICAL EQUIPMENT Yes / No
Tryon Fire Department	911			1		3	1	1		Crash Trailer	Yes
Nearest HAZMAT Response Team											
North Platte											

Survey Responses from McPherson County Fire Departments:

Grant:

Municipality				
County	McPherson			
Station Location	620 Anderson St. (POB 103)		Tryon 69167	
Dept. phone & email	308-587-2499			
Chief	Ed Black	308-520-6638	308-587-2315	
Asst. Chief	Huck Kemp	308-764-7213	308-587-2393	
Sec./Treas.	Stanley Munson	308-530-2750	308-587-2385	

Personnel

Number	Type
25	Volunteer

Equipment (housed at fire dept. or county equipment barn)

Number	Type
3	Engine Type 6: Wildland: 50 GPM, 150 gal. capacity, two crew members
1	Tender T-2 (tactical): 250 GPM pump, 1,000 gallon capacity, 2 crew members.
4	Equipment Trucks
1	Command #60

Have you identified any areas in your district that you are more concerned about than others if a wildfire starts nearby? Yes
Location: Tryon
Issues:
Multiple structures

Bridges that won't support equipment weight: No

GIS layer & contact info: No

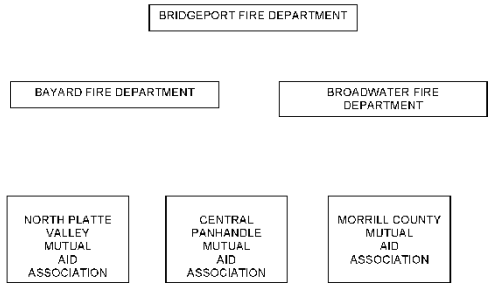
Greatest concerns: Manpower

Rank:
1 **Housing**
4 **Infrastructure**
5 **Bridge limits**
3 **Hydrants**
2 **Other water sources**

Morrill County

Information from Morrill Co. LEOP, Annex F (Alliance FD includes the NE corner of Morrill Co.; not shown here):

FIRE SERVICES



MORRILL COUNTY FIRE RESOURCES

(List numbers of equipment)

FIRE DEPARTMENT	PHONE	AERIAL	PUMPER	TANKER	PUMPER/ TANKER	GRASS-WEED TRUCK	UTILITY TRUCK	RESCUE UNITS	KINDS/TYPES/ SPECIAL-TEAMS	KINDS/TYPES SPECIAL EQUIPMENT	RADIO-LOGICAL EQUIPMENT Yes / No
BAYARD	586-1123		2	2		2		1	1		
BRIDGEPORT	262-0931		2	3	1	4	1	2	Dive Team 1		
BROADWATER	489-5585		1	1	1	4	0	1			

Survey Responses from Morrill County Fire Departments:

Alliance Fire Department:

County	Box Butte, **Morrill**, Sheridan			
Station Location	315 Cheyenne Ave.		Alliance 69301	
Dept. phone & email	308-762-2151			
Chief	Troy Shoemaker	308-762-2151	308-760-7682	tshoemaker@cityofalliance.net
Asst. Chief	Brad Schrum	308-762-2151	308-760-3946	bschrum@cityofalliance.net
Asst. Chief	John Dahlber	308-762-2151	308-763-8635	john.dahlberg@blackhillscorp.com
Captain	Nick Hinman	308-762-2151	308-760-2784	nhinman@cityofalliance.net

Personnel

Number	Type
41	Volunteer
4	Full-time

MAD(s): Pine Ridge MA, Central Panhandle MA

Equipment (housed at fire dept. or county equipment barn)

Number	Type
1	Engine Type 1: Structural: 1,250 GPM, 1,000 gal. capacity, four crew members
4	Type 6: Wildland: 125 GPM, 300 gal. capacity, two crew members
1	Tender T-1 (tactical): 500 GPM pump, 2,500 gallon capacity, 2 crew members
1	T-2 (tactical): 500 GPM pump, 1,000 gallon capacity, 2 crew members
1	S-1 (support): 500 GPM pump, 3,000 gallon capacity, 1 crew member
1	S-2 (support): 500 GPM pump, 2,000 gallon capacity, 1 crew member

Have you identified any areas in your district that you are more concerned about than others if a wildfire starts nearby? No
Issues: Difficult access, Rough terrain, Lack of water within effective distance
Bridges that won't support equipment weight: Possibly
GIS layer & contact info: No
Greatest concerns: Distance, open areas

Broadwater Fire Department:

County	Morrill			
Station Location	148 N. Starr St.		Broadwater 69125	
Dept. phone & email			kay.anderson@andycofarms.com	
Chief	Mike Goeman	308-262-5980		mwgoeman@gmail.com
Asst. Chief	Mike Phillips	308-279-0275		circlep@telecomwest.net
Sec.	Marci Goeman	308-279-1438		mgoeman@embarqmail.com
Treas.	Kay Anderson	308-279-0947		kay.anderson@andycofarms.com

Personnel

Number	Type
24	Volunteer

MAD(s): Central Panhandle MA

Equipment (housed at main barn)

Number	Type
1	Engine Type 1 Structural: 1,000 GPM, 300 gal. capacity, four crew members
2	Engine Type 2 Structural: 500 GPM, 300 gal. capacity, three crew members
4	Engine Type 3 Wildland: 150 GPM, 500 gal. capacity, three crew members
1	Tender S-2 (support): 200 GPM pump, 2,500 gallon capacity, 1 crew member
7	Equipment Trucks

Have you identified any areas in your district that you are more concerned about than others if a wildfire starts nearby? No

Location: No location was listed, but the following issues were checked:

Issues:

x Multiple structures
x Difficult access
x Rough terrain
x 1 way in/out
x Heavy fuels
x Lack of water within effective distance

Bridges that won't support equipment weight: No

GIS layer & contact info: No

Greatest concerns: Terrain, structures, access, farm yard driveways

Rank:

1 Housing
3 Infrastructure
5 Bridge limits
4 Hydrants
2 Other water sources

Appendix H

Fire Department Survey and Distribution List

Fire Department Survey

Distributed to all departments in the CWPP Region 2/15/2019

Nebraska Fire Department Survey

Contact Information:

Department Name	County(s)
Street Address	Mailing Address
Dept. Phone	Dept. Email

Chief Name:	Best Phone
Email:	Alt. Phone
Assistant Chief Name:	Best Phone
Email:	Alt. Phone
Secretary Name:	Best Phone
Email:	Alt. Phone
Treasurer Name:	Best Phone
Email:	Alt. Phone

Personnel:

Number	Type
	Volunteer
	Part-time
	Full-time

What Mutual Aid District(s) is your department in? _____

_____

If you have mutual aid agreements outside of formal MA districts please name the departments:

_____

_____

_____

1

Equipment:

Engines		(Fill in number of each type of equipment below)
Number	Type	Description
	Type 1	Structural: 1,000 GPM, 300 gal. capacity, four crew members
	Type 2	Structural: 500 GPM, 300 gal. capacity, three crew members
	Type 3	Wildland: 150 GPM, 500 gal. capacity, three crew members
	Type 4	Wildland: 50 GPM, 750 gal. capacity, two crew members
	Type 5	Wildland: 50 GPM, 400 gal. capacity, two crew members
	Type 6	Wildland: 50 GPM, 150 gal. capacity, two crew members
	Type 7	Wildland: 10 GPM, 50 gal. capacity, two crew members
Tenders	(see below)	Definition: Tactical Tenders: 4x4, 6x6, 8x8 all-wheel drive
Number	Type	Description
	T-1 (tactical)	250 GPM pump, 2,000 gallon capacity, 2 crew members
	T-2 (tactical)	250 GPM pump, 1,000 gallon capacity, 2 crew members
	S-1 (support)	300 GPM pump, 4,000 gallon capacity, 1 crew member
	S-2 (support)	200 GPM pump, 2,500 gallon capacity, 1 crew member
	S-3 (support)	200 GPM pump, 1,000 gallon capacity, 1 crew member
Other		
Number	Type	
	Equipment trucks	
	Other (Describe):	
	Road Dept. Equipment (describe)	
Yes/No (Circle)	Is any equipment housed away from the main fire barn?	Describe:

2

Have you identified any areas in your district that you are more concerned about than others if a wildfire starts nearby? ☐ Yes ☐ No

If yes, please describe where and why:

Township _____ Range _____ Section _____ Local Name: _____

Location Description:

Issues (check all that apply):

☐ Multiple Structures
☐ Difficult Access
☐ Rough Terrain
☐ One way in and out
☐ Heavy fuels
☐ Lack of water within effective distance
☐ Other (specify): _____
_____
_____

Additional areas:

Township _____ Range _____ Section _____ Local Name: _____

Location Description:

Issues (check all that apply):

☐ Multiple Structures
☐ Difficult Access
☐ Rough Terrain
☐ One way in and out
☐ Heavy fuels
☐ Lack of water within effective distance
☐ Other (specify): _____
_____
_____

3

Are there bridges in your jurisdiction that won't support equipment weight? ☐ Yes ☐ No

If yes, please describe:

Are there other areas in your jurisdiction with high home density, infrastructure or other resources at high risk, or populated areas with one way in/out? ☐ Yes ☐ No

If yes, please describe:

What are your greatest concerns if a wildfire were to start in or enter your jurisdiction?

Does your jurisdiction have GIS layer(s) that show housing, infrastructure, bridge limits, hydrants and other water sources (other than the county assessor's GIS information)? ☐ Yes ☐ No

If yes, please provide contact information:

Name: _____

Phone: _____ Email: _____

Which of these is of greatest concern in your jurisdiction?
(Please rank 1 to 5 with 1 being most important)

_____ Housing

_____ Infrastructure

_____ Bridge limits

_____ Hydrants

_____ Other water sources

Is there anything else you think we should know? _____

_____

_____

_____

_____

Thank you for providing this information.

Please email a scan of the completed form to sbenson4@unl.edu or mail a hard copy to:

Nebraska Forest Service (Attn: Sandy Benson)
113 N. Woodward St., Ste. A
Ainsworth, NE 69210

4

Fire Department Survey Distribution List

Alliance
Arthur Co.
Big Springs Fire
Blue Creek/Lewellen
Chappell
Heart-of-the-Hills/Pioneer
Lisco (Garden Co.)
Lodgepole
McPherson Co.
Mullen
Oshkosh (Garden Co.)
Rackett
Sandhills
Sidney

Appendix I

Public Engagement

This section includes outreach documents, media releases, and stakeholders list.

(Note: Type size for this section has been reduced to conserve paper)

Outreach Documents

County Boards

(sent via e-mail 1/15/2019 to county boards; they shared it with their emergency managers)
To: County Boards
From: Sandy Benson, Nebraska Forest Service
Subject line: Community Wildfire Protection Plan Steering Committee Designation - Please reply!

My name is Sandy Benson, and I am a fuels management specialist with the Nebraska Forest Service (NFS). I work with communities and landowners in wildfire preparation efforts throughout the state. The NFS is developing Community Wildfire Protection Plans (CWPPs) statewide to help obtain funding for wildfire mitigation, maximize safety, bolster communications between local and state resources, and help communities understand the evolving role fire plays in Nebraska's landscape. Landowners in counties that have a CWPP in place are eligible to apply for a fuels reduction cost-share program that helps defray the costs of protecting structures and emergency access routes from wildfire.

Your county is all or partly within the Western Sandhills regional planning area, and we invite you to designate one or more individuals to participate on the steering committee to help identify local issues important to your citizens. Some counties have designated emergency management staff. Others have selected fire department personnel or others with expertise in wildfire response. Due to the large size of the planning area and everyone's busy schedules, travel will not be required, and we estimate a maximum of six hours of committee members' time would be needed over the course of the entire planning process, which should take about a year. Committee work is designed to occur via teleconference and email.

The attached document explains the details of this process. County boards will be invited to review and provide feedback on the draft plan. When it is finalized, boards will have an opportunity to adopt it.

It is important that local officials are aware of the planning process and we welcome your county's participation. Most county boards are pleased to find out that there is no cost associated with CWPP preparation. The primary reasons for having a CWPP are:

- Create a wildfire-specific resource that coordinates with the local emergency plan and neighboring plans
- CWPP regions are eligible for cost-share funding

If you have questions, please contact me at 402-684-2290 or sbenson4@unl.edu. If you would like to speak to me by phone during your board meeting, please let me know the date and time so I can be available.

Thank you.
***
Attachment:

Community Wildfire Protection Plans

The Nebraska Forest Service (NFS) is in the early stages of preparing a **Community Wildfire Protection Plan (CWPP)** for the Western Sandhills region of Nebraska, which includes your county. This plan is a wildfire-specific resource that coordinates with local emergency plans and allows local landowners and others to apply for federal and state cost-share funds for vegetative fuels reduction and other hazard mitigation efforts within the CWPP region. There is no cost to counties.

What is a CWPP?
It is one of the most successful tools for addressing the challenges and responsibilities that arise from living in a wildfire-prone environment. CWPPs specifically define wildfire risk areas within and adjacent to communities, the measures necessary to mitigate those risks, and a plan of action to implement these measures.

The collaborative CWPP process is effective in maximizing coordination and communication between emergency response agencies and the community. Developing a CWPP helps clarify priorities to protect life, property, infrastructure, and valued resources. Protecting communities and resources from wildfire is a team effort that cannot be accomplished by any one person or entity.

The CWPP works in conjunction with your local emergency operations plan. It specifically addresses wildfire concerns including risk assessment, critical infrastructure, and preparedness. It also recommends an action plan to increase the overall safety and effectiveness of wildfire protection planning within your community. Local officials collaborate with planners to establish a steering committee to guide the process.

Some background
After the large wildfires in 2012, the state legislature passed the Wildfire Control Act of 2013, which provided funding for single-engine air tanker bases, cost share for hazardous fuels reduction, and expansion of programs to provide volunteer fire districts with more fire

suppression equipment. As these programs were implemented, the Nebraska Forest Service realized there were very few Community Wildfire Protection Plans in place across the state. CWPPs are needed for an area to qualify for many wildfire-related grants and cost-share programs.

The NFS prepared CWPPs for the Pine Ridge, North Central, Loess Canyons, Wildcat Hills, and Missouri River Northeast. Now we are preparing CWPPs for the Western Sandhills, Central Sandhills, Southwest, Central Platte, and Southeast areas.

Why should we have a CWPP?

- Past wildfires throughout Nebraska have presented many challenges and issues
- A CWPP is a mitigation and preparedness plan to reduce wildfire risk
- Establishes a collaborative relationship among entities BEFORE a fire occurs
- Develops a pre-attack plan to maximize firefighter readiness and safety
- Increases grant application success by documenting wildfire planning and projects
- Fuels reduction grant funds are only available for areas that have a CWPP

Community benefits

- Define planning boundaries that address local concerns
- Identify and prioritize areas for hazardous fuel reduction treatments
- Recommend treatment methods
- Strengthen local efforts to reduce structural ignitability
- Enhance emergency management and communication
- Foster public education/action to reduce wildfire risk

How much does it cost?
The Nebraska Forest Service is covering the costs associated with preparing the CWPP. Counties will not be asked for monetary contributions.

How does it work?
The first step is to put together a steering committee to guide the process and ensure that local issues are front and center in developing the plan. Because of the geographic distances involved, the steering committee will meet via conference call, and only as needed. It would be helpful if your county would recommend a local representative to serve on the committee. The committee will define the priority areas, specify topics and issues important to local emergency responders, and provide general guidance as the plan is prepared.

Once we have gathered the information, we will prepare a draft plan for review, incorporate edits and changes, then finalize the plan and make it available to all. This process usually takes about a year. Counties are invited to sign the plans, which will be updated as needed.

It is important that local officials participate in this planning effort to ensure it addresses unique local considerations. Please share this memo with your emergency planning staff, sheriff, and others who may wish to participate. We will also invite fire departments to participate.

Please recommend individuals who may be willing to serve on the CWPP steering committee. Participation does not require a hefty time commitment, and it ensures local input and guidance for the planning process.

Please email steering committee recommendations to sbenson4@unl.edu or call Sandy Benson at 402-684-2290.

Fire Departments

(This was sent via e-mail February 15, 2019 along with the survey in Appendix H)
Subject line: Fire Dept. Info - Community Wildfire Protection Plan - Please respond!

To: Fire Departments
cc: Emergency Managers
(McPherson Clerk: Please provide this info to Ed Black, who has no email address)
From: Sandy Benson, Nebraska Forest Service

My name is Sandy Benson, and I am a fuels management specialist with the Nebraska Forest Service (NFS). I work with communities and landowners in wildfire preparation efforts throughout the state. The NFS is developing Community Wildfire Protection Plans (CWPPs) statewide to help obtain funding for wildfire mitigation, maximize safety, bolster communications between local and state resources, and help communities understand the evolving role fire plays in Nebraska's landscape. Landowners in counties that have a CWPP in place are eligible to apply for a fuels reduction cost-share program that helps defray the costs of protecting structures and emergency access routes from wildfire.

The attached background information provides details about the function of Community Wildfire Protection Plans. The primary reasons for having a CWPP are:

- Create a wildfire-specific resource that coordinates with the local emergency plan and neighboring plans
- CWPP regions are eligible for wildfire mitigation cost-share funding

Your fire district is all or partially within the Western Sandhills regional planning area – see attached map. Your participation will help identify local issues important to your fire department and help guide the planning efforts.

Please fill out and return the attached questionnaire as soon as possible, to ensure that the CWPP will contain the most current information available. Completed questionnaires can be scanned and sent to me via a reply to this email, or returned by regular mail to the address shown on the last page of the form. Feel free to email sbenson4@unl.edu or call me with any questions at 402-684-2290.

Cities and Villages

(This was sent via e-mail 2/15/2019)
The Nebraska Forest Service is in the early stages of preparing a Community Wildfire Protection Plan (CWPP) for the Western Sandhills region of Nebraska, which includes your community. This plan enables local landowners to apply for federal and state cost-share funds for vegetative fuels reduction and other hazard mitigation efforts in at-risk areas within the CWPP region.

The CWPP works in conjunction with your local emergency operations plan. It specifically addresses wildfire concerns including risk assessment, critical infrastructure, and preparedness, and it recommends an action plan to increase the overall safety and effectiveness of wildfire protection planning within your community. Local officials collaborate with planners to guide the process.

It is important that local officials participate in this planning effort to ensure it addresses unique local considerations. Please share this memo with your board, emergency planning staff, and others who may wish to participate.

Interested individuals are welcome to serve on the CWPP steering committee. Participation will not involve a huge time commitment, but it will ensure local input and guidance for the planning process. With guidance from the steering committee, I will be gathering information and preparing the plan. Please let me know if you would like further information.

Please send steering committee recommendations to me via reply to this email, or by calling me at 402-684-2290.

Media Releases and General Outreach

Print Media and Radio

An invitation to participate was published in all of the local newspapers and put on the radio stations on April 1, 2019:

Local input needed for community wildfire protection plan

Local counties are working with the Nebraska Forest Service to create a Community Wildfire Protection Plan (CWPP) to enhance collaboration and communication among the various agencies and organizations who manage fire in the western Sandhills region, and to help them effectively prepare for and respond to wildfire. Everyone who works with land management, fire, and community preparedness has an opportunity to provide input.

The CWPP area includes all of Arthur, Deuel, Garden, Grant, Hooker, and McPherson Counties, the eastern part of Cheyenne County, and the northeast corner of Morrill County. Landowners in counties that adopt the plan will be eligible to apply for federal and state cost-share funds for vegetative fuels reduction and other hazard mitigation efforts in at-risk areas within the CWPP boundary. The plan may also provide increased opportunities for counties, municipalities, and rural fire districts to seek grant funding for activities related to fire protection.

The plan, part of a statewide network of Community Wildfire Protection Plans, provides information useful to local emergency responders and those from outside the area who provide mutual aid. The CWPP consolidates and relays critical information needed for responders in unfamiliar terrain. Each county can include details vital to protecting its first responders, residents, and property.

A CWPP is a tool for fire departments, agencies, emergency managers, public officials, and land managers to use when addressing wildfire concerns. It contains a fire mitigation plan for each county that includes:

- Community profile (area description, roads, land use, location of at-risk areas)
- Wildfire risk assessment (fire history, fire hazard, protection capabilities, infrastructure)
- Structure analysis (fire risk rating and ignitability)
- Hazardous Fuel reduction recommendations
- Emergency operations (responsibilities, capabilities, partners, mutual aid agreements)
- Recommendations for improving community preparedness
- Contact information and equipment lists for rural fire departments

Feedback from local residents may include topics such as identification of ingress/egress routes and safe zones for citizens, structures and critical infrastructure (highways, cell towers, bridges, schools, etc.), areas with homes or developments in high-risk areas, and high-risk ignition sources.

People may have additional concerns or suggestions. All ideas are welcome. For further information or to provide comments, call 402-684-2290 or email sbenson4@unl.edu

* * *

Follow-up News Releases

Media releases for draft review and publication of final plan are scheduled for 2019.

Flyers Posted

On April 1, 2019 these flyers were distributed to county and municipal offices and sent to the steering committee for general distribution:

Land managers, emergency responders, anyone interested in community preparedness: Your input is needed!

Local counties are collaborating to create a . . .

Community Wildfire Protection Plan

. . . to prepare for and manage wildfire and improve communication among agencies that respond to wildfire.

The plan, part of a statewide network of Community Wildfire Protection Plans, provides readily-accessible information to emergency responders from outside the area. It consolidates and relays critical information needed for responders in unfamiliar terrain. It is tailored by each county to include details vital to protecting first responders, residents, and property.

Feedback from county residents may include topics such as:

- Ingress / egress routes and safe zones for citizens
- Structures and critical infrastructure (highways, cell towers, bridges, schools, etc.)
- Wildland urban interface areas such as homes or developments in high-risk areas
- Natural resources
- Identify high-risk ignition sources and safety guidelines

People may have concerns or suggestions in addition to these typical CWPP priorities. All ideas are welcome. For further information or to provide comments, call 402-684-2290 or email sbenson4@unl.edu

NEBRASKA FOREST SERVICE University of Nebraska-Lincoln

Nebraska Forest Service
402-684-2290
sbenson4@unl.edu

IANR

Online Outreach

The Western Sandhills CWPP planning information and map were added to the Nebraska Forest Service CWPP webpage: https://nfs.unl.edu/community-wildfire-protection-plan on April 1, 2019.

The Western Sandhills CWPP steering committee and fire departments were invited to join the Nebraska CWPP Facebook page: https://www.facebook.com/groups/451134565293952/ on April 1, 2019.

Stakeholders List

Fire Districts	**County Boards**	**Municipalities**
Alliance	Arthur	Arthur
Arthur Co.	Cheyenne	Big Springs
Big Springs	Deuel	Chappell
Chappell	Garden	Hyannis
Heart-of-the-Hills	Grant	Lewellen
Lewellen/Blue Creek	Hooker	Lodgepole
Lisco	McPherson	Mullen
Lodgepole	Morrill	Oshkosh
McPherson Co.		Sidney
Mullen	**Natural Resources Districts**	Tryon (not incorporated)
Oshkosh/Garden Co.	South Platte NRD	
Rackett	North Platte NRD	**State Legislators**
Sandhills	Twin Platte NRD	District 43
Sidney	Upper Loup NRD	District 47
		District 48
	State Agencies	
Local Emergency	Nebraska Game and Parks Commission	**Federal Legislators**
Managers	Nebraska Forest Service	Sen. Deb Fischer
Region 21	Nebraska State Fire Marshal's Office	Sen. Ben Sasse
Keith/Grant	Board of Educational Lands and Funds	Rep. Adrian Smith (Dist. 3)
Arthur County	Nebraska Emergency Management Agency	
Hooker County		**Prescribed Fire Associations**
McPherson County	**Federal Agencies**	(None in CWPP region)
	NRCS - Grand Island, North Platte, Ord, Thedford	
	BLM – Casper, WY Dist. Office handles all Nebraska	**Homeowner Associations**
	USFWS – Crescent Lake NWR	(None in CWPP region)
	501(c)3 Organizations & Other NGOs	
	Pheasants Forever	
	The Nature Conservancy	

Appendix J

- Wildland Urban Interface Mitigation Strategies
- Structural Ignitability Reduction Practices
- Firewise® Landscaping
- Nebraska Fire-Resistant Plant List

Wildland Urban Interface Mitigation Strategies and Structural Ignitability Reduction Practices

1) Develop a program to increase awareness of Firewise® standards for community defensibility and designate, for firefighter safety, which homes and/or parts of communities are not defensible
2) Introduce and expand the understanding of the "Home Ignition Zone" and emphasize how survivability depends on maintenance necessary to reduce and manage home ignition potential
3) Create guidelines for developers and property owners who intend to construct roads, driveways and dwellings to provide the following:
    a. Name, address, and GPS location for each road, driveway, and building site
    b. Fuel treatment standards for the areas between building sites
    c. Evidence that Firewise® building standards and defensible space information has been provided to every lot and homebuyer or develop Firewise® based requirements for new building construction standards
    d. Road construction and maintenance standards that accommodate emergency equipment
    e. Require at least two access routes for developed areas and subdivisions
    f. Designate locations for maintained safety zones and water facilities
4) Subdivision residents can work together to improve defensibility of their whole subdivision; this could include connecting home site defensible space areas and/or fuel hazard reduction and thinning 150 to 200 feet from buildings
5) Develop accurate maps for subdivisions and access roads
6) Treat fuels along strategic roads
7) Long driveways in wooded areas should be graveled and provided with terminus turnaround that has at least a 45-foot radius or a pull-in and pull-out facility
8) Mark driveways without turnaround or with steep slopes with a sign indicating limitations
9) Mark safety zones and helispots where fuel continuity is dense and zones are not obvious
10) Develop and implement a standard for signing roads and addressing and marking homes for more efficient emergency access

Web Sources: Wildfire Preparedness

FEMA: Local Mitigation Planning: https://www.fema.gov/local-mitigation-planning-resources

Fire-Adapted Communities®: http://www.fireadapted.org/

Fire-Resistant Plants: http://blog.davey.com/2017/08/fireproof-landscapes-with-fire-resistant-plants-trees-and-shrubs/

Firewise Communities®: http://www.firewise.org/

Firewise Guide to Landscaping and Construction: https://www.nfpa.org/-/media/Files/Firewise/Brochures-and-Guides/FirewiseGuideToLandscapeandConstruction.ashx

Nebraska Forest Service Wildland Fire Protection Program: https://nfs.unl.edu/fires-nebraska

Ready, Set, Go!: http://www.wildlandfirersg.org/

Firewise® Landscaping and Nebraska Fire-Resistant Plant List

Firewise® Landscapes

Homeowners value landscapes for the natural beauty, privacy, shade and recreation they offer and frequently select properties that include or are near woodlands or other natural areas to visually expand the landscape. One of the risks of properties adjoined to natural areas, however, is that they can be more vulnerable to wildfires.

Creating Defensible Space

In fire-prone areas, property owners can take measures to minimize the risk of wildfire damage by creating a "defensible space" around the home or other buildings. Some of the ways to create more Firewise® landscapes include:

- Planting lower-growing plants or groundcovers near the home to form low, dense mats with strong root systems
- Avoiding the use of tall grasses close to buildings since they can ignite easily and burn rapidly
- Mulching with rocks, gravel or other hardscaping around the foundation instead of bark, pine needles or other flammable mulches
- Paving patio areas and creating raised beds to create firebreaks
- Planting low-growing succulent shrubs rather than taller, resinous evergreen shrubs
- Spacing trees so that tree crowns are 10 feet from each other
- Pruning dead limbs
- Removing dried annuals or perennials
- Raking leaves and litter as they build up
- Placing screens beneath decks to keep leaves or woody debris from collecting underneath
- Keeping wood piles at least 30 feet away from the house
- Providing open access for firefighting equipment that is not limited by fences, trees, or other obstructions
- Keeping propane tanks a good distance from buildings, and taking care when refueling garden equipment
- Using non-flammable outdoor furniture

Selecting Firewise Plant Materials

No plant species is entirely fireproof. Virtually any vegetation can fuel a fire, but some species are more resistant than others. The following information can help property owners select more fire-resistant plant materials, but where they are planted and how they are cared for can be just as important as the plants themselves.

- Planting a variety of sizes and species of plants in small, irregular clusters creates a better barrier than large masses of a single species
- Groundcovers or other plants that grow close to the ground offer less fuel
- Conifers or other plants are high in very flammable resin, so it's best to keep them thinned and pruned—especially close to the ground
- Conifers with thick bark and long needles are more able to withstand fire
- Salt-tolerant plants tend to be somewhat more fire-resistant
- Deciduous plants have higher moisture content, are less flammable and, when dormant, offer less fuel
- Drought-tolerant plants tend to be more fire-resistant as they are likely to contain lots of moisture (succulents) or to shed leaves or needles during extreme drought
- Plants with open, loose branches and minimal vegetation (such as currant and mountain mahogany) are less of a hazard, as are plants that grow slowly and need little pruning
- Plants, like aspen, that can resprout following a fire will more quickly rejuvenate a landscape

Using Native Prairie Plants

In Nebraska it is often the case that a "Firewise" landscape should also be a "waterwise" landscape where drought-tolerant plants are an important part of the mix. Obviously our native plants have evolved to grow under natural moisture conditions and many of them are suitable for both a "waterwise" and a "Firewise" landscape. Just a little water here and there can go a long way to keeping such plants green and viable. Another important aspect of using native plants is that they play a vitally important role in supporting biodiversity and all the benefits derived from it. We strongly recommend that native plants be utilized within any landscape, including the Firewise landscape. The trick is to use them appropriately, especially near the home.

Although native prairie grasses and forbs make a lot of sense in a "waterwise" landscape, they can also be highly combustible when they are brown and dry. For a Firewise landscape, prairie plants, especially taller grasses, should be used sparingly and judiciously within the 30 foot "Lean, Clean and Green Zone" nearest the home. A few scattered here and there for ornamental affect are fine, but they should not be massed tightly close to the home. A prairie meadow or thick border planting should be reserved for those areas farther away from important structures.

Lawn and Groundcover

One of the best ways to defend a structure against wildfire is to maintain a closely-cropped green zone near the home. This typically means the maintenance of a green lawn, but turf grass is not the only choice. Cool-season lawn grasses such as Kentucky bluegrass and tall fescue are good choices, although they can require significant amounts of supplemental irrigation to keep green in dry weather. For sunny areas, a good alternative is buffalo grass, which requires much less moisture than other lawn grasses. Our native blue grama can also be used as a turf alternative, however it will need to be mowed higher – at 8-10" while green and then mowed short when dormant. Recent years has brought the advent of many sedge species as lawn alternatives especially for more shady zones.

Groundcovers don't need to be grasses or grass-like plants requiring mowing. There are several species of "Firewise" groundcover perennials that make sense including such things as vinca, bergenia, hosta, bugleweed, geranium, sedum, primrose, pussytoes, snow in summer, Virginia creeper, wild strawberry and yarrow.

Introduced Perennials and Ornamental Grasses

As with native plants, there are many great non-native species that can be used in a "Firewise" landscape that is also "waterwise." The trick is to place them appropriately and cut them back (clean them up) when they die back late in the season. Some of our favorites include sedum, geranium, coral bells, daylily, lambs ear, feather reed grass, Korean reed grass, and fountain grass.

Trees and Shrubs

Although nearly any tree or shrub could burn in a severe fire, it is the highly volatile evergreen species including pine, spruce, fir, juniper, and cedar that pose the most risk when growing near homes or other structures. Within the area nearest the home (30-foot interior zone) it is advisable to exclude volatile evergreens entirely. However, because deciduous trees are so important at casting shade and cooling the home and its surroundings, and because they are not nearly as prone to burning, they can be utilized relatively close to the home. Keep in mind that any branches directly overhanging the roof should be removed. Some of the best deciduous trees for planting near homes include our tough native species including hackberry, bur oak, coffeetree, and honeylocust.

Most deciduous shrubs are acceptable for use in a Firewise landscape. Nearest the home, the shrubs should be kept lower than 30 inches and they should not be massed in tight groupings. Beyond the 30-foot interior zone, the shrubs can be taller and more tightly spaced, however grouping should still be kept relatively small until at least 50 feet from the home. Native species will do the most for biodiversity. Species to consider include mountain mahogany, rabbit brush, sumac, serviceberry, currant, snowberry, gooseberry, plum, and chokecherry.

Firewise Plants for Nebraska

Perennials & Groundcovers

Artemisia
Bergenia
Blanket flower, *Gaillardia*
Bugleweed, *Ajuga*
Candytuft, *Iberis*
Catmint, *Nepeta*
*C*oneflowers, *Rudbeckia*
Columbine, *Aquilegia*
Coral bells, *Heuchera*
Coreopsis
Daylily, *Hemerocallis*
Flax*, Linum*
Geranium
Hens and chicks, *Sempervivum*
Iris
Lambs ear*, Stachys*
Penstemon
Pinks*, Dianthus*
Primrose, *Oenothera*
Pussytoes, *Antennaria*
Sage, *Salvia*
Sedum
Snow-in-summer, *Cerastium*
Violets, *Viola*
Virginia creeper, *Parthenocissus*
Wild ginger, Asarum
Wild strawberry, *Fragraria*
Yarrow, *Achillea*

Shrubs

Buffaloberry, *Shepherdia*
Cherry and plum, *Prunus*
Cinquefoil*, Potentilla*
*C*oralberry, snowberry*, Symphoricarpos*
Cotoneaster
Currant and gooseberry, *Ribes*
Dogwood*, Cornus*
Lilac, Syringa
Mahonia
Mock orange, Philadelphus
Mountain mahogany, Cercocarpus
Ninebark, Physocarpus
Rose, Rosa
Sumac, Rhus

Trees

Aspen, cottonwood and poplar, *Populus*
Birch, *Betula*
Black cherry, *Prunus*
Boxelder, *Acer*
Bur, Gambel, Chinkapin oak, *Quercus*
Hackberry, *Celtis*
Maple and boxelder, *Acer*
Ohio buckeye, *Aesculus*
Willow, *Salix*

Appendix K

Link to the Nebraska Forest Service "Yellow Book" Emergency Assistance for Wildfire Control

https://nfs.unl.edu/documents/Yellowbook.pdf

This reference is a "must have" for Nebraska's emergency responders. It contains:

- Contact information for state, federal and private agencies that have emergency suppression resources or can provide technical expertise in the suppression of wildfires
- Aerial Applicator and Foam Retardant Directory
- Deployment procedures and forms you will need to follow to order a Single Engine Air Tanker (SEAT)
- Map of cooperating aerial applicators and SEAT base locations