

Central Sandhills Community Wildfire Protection Plan

FOR THE COUNTIES OF
BLAINE, CUSTER, GARFIELD,
GREELEY, LOGAN, LOUP,
THOMAS, VALLEY, WHEELER,
AND PART OF LINCOLN

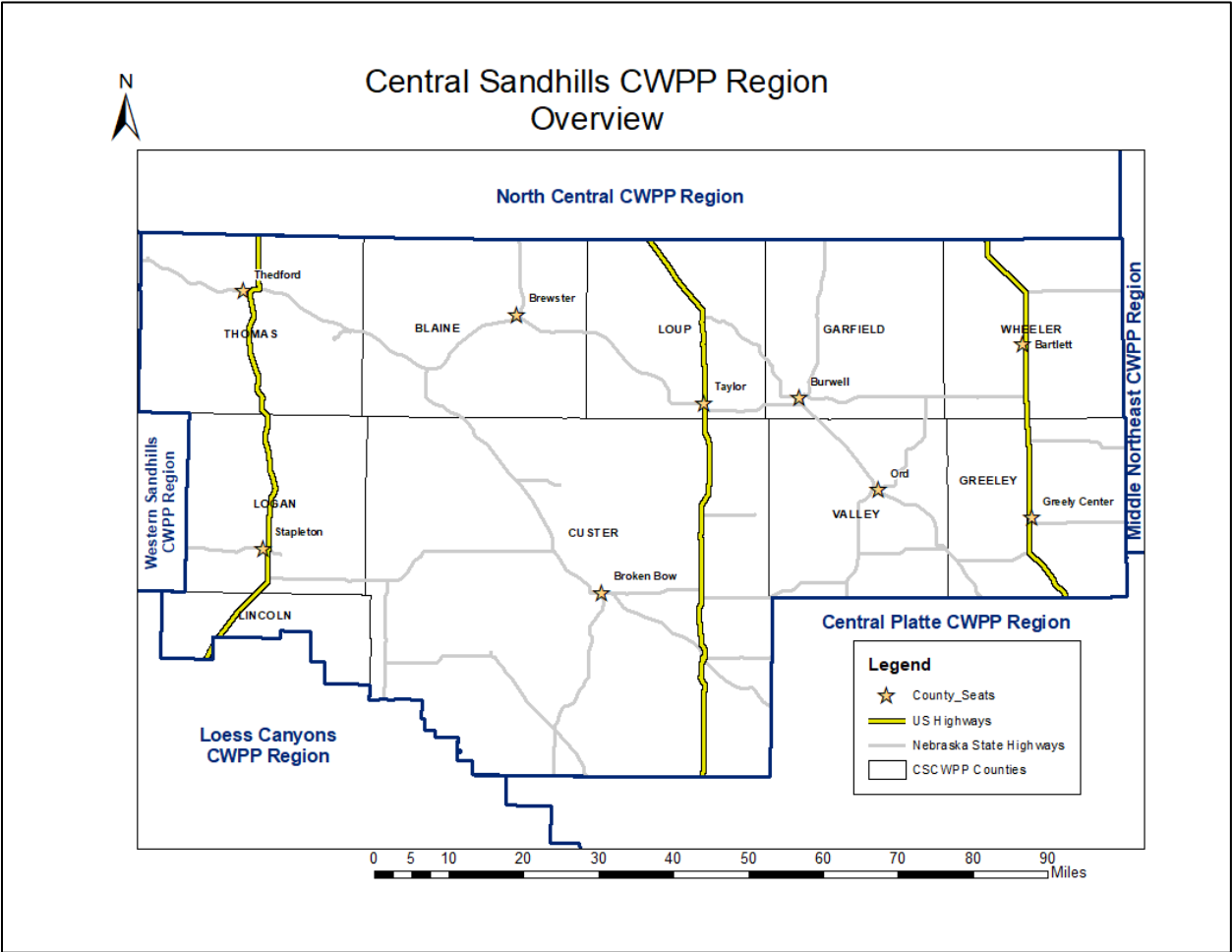


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JUNE, 2019



Central Sandhills Community Wildfire Protection Plan



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FACILITATED BY THE

Nebraska Forest Service

IN COLLABORATION AND COOPERATION WITH

BLAINE, CUSTER, GARFIELD, GREELEY, LINCOLN,
LOUP, THOMAS, VALLEY, AND WHEELER COUNTIES

LOCAL VOLUNTEER FIRE DISTRICTS

REGIONS 26 AND 51 AND CUSTER COUNTY EMERGENCY MANAGEMENT

CENTRAL SANDHILLS CWPP STEERING COMMITTEE

LOCAL MUNICIPAL OFFICIALS

LOCAL, STATE, AND FEDERAL NATURAL RESOURCES AGENCIES

AREA LANDOWNERS

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Central Sandhills Community Wildfire Protection Plan

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Central Sandhills Community Wildfire Protection Plan

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Central Sandhills Community Wildfire Protection Plan

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Table of Contents

Overview Map.....	ii
Acknowledgements.....	iii
Signature Pages.....	v
Table of Contents.....	vii
List of Acronyms.....	viii
Introduction and Legislative Background	1
Goals and Objectives.....	2
Priority Landscapes	3
Process	3
Overview	4
Wildfire Hazard: History and Impacts.....	10
Emergency Operations.....	13
Community Specific Considerations	
Blaine County.....	16
Custer County	18
Garfield County.....	20
Greeley County	22
Lincoln County	24
Logan County	26
Loup County.....	28
Thomas County	30
Valley County	32
Wheeler County	34
Action Plan	36
Wildfire Risk Assessment.....	36
Wildfire Risk Reduction.....	37
Recommendations for Increasing Emergency Preparedness	38
Training and Education	40
Fuels Mitigation Strategies	40
Five-Year Action Plan	42
Maintenance.....	42
Monitoring and Evaluation	43
Endnotes	44
List of Appendices.....	46

Central Sandhills Community Wildfire Protection Plan

Central Sandhills Community Wildfire Protection Plan Acronyms

Acronym	Meaning
BLM	Bureau of Land Management
BUL	Biologically Unique Landscape
cfs	cubic feet per second
CWPP; CSCWPP	Community Wildfire Protection Plan; Central Sandhills Community Wildfire Protection Plan
EMA	Emergency Management Area/Agency
EMS	Emergency Medical Service
FAP	Forest Action Plan
FEMA	Federal Emergency Management Agency
FEPP	Federal Excess Property Program
FFA	Future Farmers of America
FFP	Firefighter Property
GIS	Geographic Information System
GPS	Global Positioning System
HAZMAT	Hazardous Materials
ID	Identification
LEOP	Local Emergency Operations Plan
MA or MAD	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
NRCS	Natural Resources Conservation Service
NRD	Natural Resource District
NWS	National Weather Service
PDF	Portable Document File
PPID	Public Power and Irrigation District
RA	Risk Assessment
RFD	Rural Fire District
RH	Relative Humidity
RPPD	Rural Public Power District
RPPID	Rural Public Power and Irrigation District
RR	Risk Reduction
SEAT	Single Engine Air Tanker
SHP	State Historical Park
SRA	State Recreation Area
SRIA	Structural Risk & Ignitability Analysis
USDA	US Department of Agriculture
USDI	US Department of Interior
USFS	US Forest Service
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey
VFD; RFD; FD	Volunteer Fire Department; Rural Fire District/Dept.; Fire District/Dept.
V-TAC	A radio channel
WMA	Wildlife Management Area
WUI	Wildland Urban Interface

Central 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 central 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 Central Sandhills CWPP region lies partially within the Sandhills and Mixed Grass Prairie Ecoregions identified in the NNLP. Parts of the Central Loess Hills, Elkhorn River Headwaters, Calamus River, Lower Loup Rivers, and Upper Loup Rivers and Tributaries 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). 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. Parts of the Central Loess Hills and Loup Rivers priority landscapes are 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 in 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 Nebraska's Natural

Central Sandhills Community Wildfire Protection Plan

Resource Districts (NRDs) to promote the creation and updates of multi-jurisdictional plans throughout the state.² The Twin Platte, Lower Loup, and Upper Loup NRDs have prepared Hazard Mitigation Plans for their districts, which include portions of the Central Sandhills CWPP region. 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 including a risk assessment procedure, risk reduction measures, preparedness recommendations, training and education, 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 objectives:

- Objective 1 – Actively and sustainably manage forests
- Objective 2 – Restore fire-adapted lands and reduce risk of wildfire impacts in forests and adjacent communities
- Objective 3 – Identify, manage and reduce threats to forest and ecosystem health
- Objective 4 – Protect and enhance water quality and quantity
- Objective 5 – Improve air quality and conserve energy
- Objective 6 – Assist communities in planning for and reducing wildfire risks
- Objective 7 – Maintain and enhance the economic benefits and values of trees and forests
- Objective 8 – Protect, conserve and enhance fish and wildlife habitat

Sustainable forest management reduces wildfire impacts in the region's riparian and planted 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. Communities that plan for and reduce wildfire risks 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 goals of the NNLP 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 Central Sandhills CWPP steering committee identified the following goals and objectives for this plan:

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

Central Sandhills Community Wildfire Protection Plan

- 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 mutual aid radio channels
 - b. Educate fire departments and 911 dispatchers about notifying assisting mutual aid departments which V-TAC 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 (see Appendix A, Map 2). The area within the CWPP boundary contains a range of landscapes, from farmland and Sandhills to riparian woodlands and planted coniferous forests. The principal Priority Landscapes in this CWPP region are found in Thomas, Custer, Valley, and Garfield Counties, but the other counties also contain mid- to high priority areas in which hazard reduction activities can be targeted. Within each county, local stakeholders have identified “Areas of Concern” – specific areas that are most at risk for wildfire within the larger landscapes. Maps of these Areas of Concern appear in Appendix A.

Some of the CWPP counties have experienced large, catastrophic fires. Between 2000 and 2017, CWPP region volunteer fire departments reported 17 fires greater than 1,000 acres in size that burned almost 54,000 acres. Between 1972 and 2017, the Bessey Ranger District in Thomas and Blaine Counties reported eight fires larger than 1,000 acres that burned over 144,000 acres. The largest historic fire in the CWPP region burned over 100,000 acres near Mullen and into Thomas County in 1972. The area’s second largest fire started northwest of Mullen in March, 1999. It burned over 75,000 acres and caused one firefighter fatality. It charred an area over 40 miles long and up to 10 miles wide. Over 300 people in the Thedford area were evacuated.³

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 area as Wildland Urban Interface (WUI). Treatment to reduce woody fuels within the forested areas will help lessen the risk of wildfire within the WUI. 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.

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

Central Sandhills Community Wildfire Protection Plan

participate in the process was given to each of the ten county boards within the Region. Nine of them endorsed the effort. The Logan County board declined to participate. NFS decided to include publicly available information for Logan County in the document and offer the county an opportunity to adopt it upon completion of the plan.

An outreach letter 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, private lands managers, NRDs, the NFS, the US Forest Service (USFS) – Bessey Ranger District/Nebraska National Forest, NEMA, the Natural Resources Conservation Service (NRCS), the Bureau of Land Management (BLM), and the NGPC.

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. Ten of the 28 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. The draft was reviewed by the steering committee and county boards, then made available to the public for further review and input. 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 and interested stakeholders. The final plan is also available online at <https://nfs.unl.edu/documents/CWPP/CentralSandhills.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 individual county sections.

Landforms, Climate and Weather

The Nebraska Sandhills region is a dune formation occupying much of central and northern Nebraska. The region is the largest dune field in the northern hemisphere and is the largest area covered by sand in North America. The overall climate of the region is semiarid, yet the dunes are stabilized by large quantities of grasses and other vegetation. The Sandhills sit atop the Ogallala Aquifer, which plays a large role in stabilizing the sand dunes. The dunes have been active throughout history, with the most recent activity ending in 1300 AD at the end of the Medieval Climatic Anomaly.⁴

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

Central Sandhills Community Wildfire Protection Plan

about every six years. Extreme drought and wildfires occurred in 1988, 1994, 2000, 2006 and 2012. In 2018, Nebraska did not follow that pattern and was wetter and cooler than normal. Some areas produced a high amount of fine fuels that created heavier-than-normal fuel loads during the following months. Many parts of the western United States experienced record heat and wildfires during the 2018 fire season.

County	April			July			October		
	Max. Temp.	Precip.	Min. RH	Max. Temp.	Precip.	Min. RH	Max. Temp.	Precip.	Min. RH
Blaine	60.56	2.51	27	87.10	2.96	44	63.70	1.81	34
Custer	61.04	2.52	37	86.60	3.03	71.5	63.80	1.81	42
Garfield	60.26	2.74	30	86.19	3.23	50	63.06	2.06	37
Greeley	61.39	2.61	33	86.29	3.27	50	63.74	2.05	37
Lincoln	61.74	2.24	31.5	88.11	2.99	41	64.60	1.72	38
Logan	61.00	2.48	29	87.54	2.95	42	63.94	1.76	36
Loup	60.27	2.74	29	86.67	3.00	48	63.19	1.93	36
Thomas	60.40	2.48	29	87.08	3.02	42.5	63.63	1.66	36
Valley	61.26	2.69	31	86.59	2.96	52	63.74	2.00	38
Wheeler	60.52	2.85	31.5	86.16	3.24	50	63.23	2.27	37

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

Weather data was obtained from the University of Nebraska High Plains Regional Climate Center⁵ and Iowa State University.⁶ Weather factors, including temperature, precipitation, humidity, and wind, define fire season, as well as fire direction and speed. 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-July, but there is less growth, and consequently fewer fine fuels to catch sparks from trains, farm equipment, or motorists.

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 from April, July, and October from three stations in the plan area – Broken Bow, Ord, and Thedford – are in Appendix D.

Vegetation and Natural Communities

Native vegetation across the northern and western parts of this region includes large expanses of Sandhills prairie with deciduous woodlands in the drainages.⁷ Mixed-grass prairie dominates in Greeley, Valley, and most of Custer County. In many areas eastern redcedar has encroached into both the prairies and woodlands. See Map 3 in Appendix A.

In Thomas and Blaine Counties, the 90,000-acre Bessey Ranger District of the Nebraska National Forest includes 25,000 acres of hand-planted conifers. It is the largest planted forest in North America.⁸ Tree planting started in 1903, and by 1965 the plantation had expanded to about 30,000 acres. Planting ceased after 1965, when a wildfire consumed over 10,000 acres of the trees. These planted trees are primarily pine and eastern redcedar and constitute a high fire hazard.⁹

Central Sandhills Community Wildfire Protection Plan

Land Use

There are about 4,834,183 acres in the Central Sandhills CWPP region, which includes all of Blaine, Garfield, Greeley, Logan, Loup, Thomas, Wheeler, and Valley Counties, most of Custer County, and part of northeast Lincoln County. Public lands include over 90,000 acres of the Nebraska National Forest,⁷ 21,145 acres in 15 Wildlife Management Areas (WMAs), State Recreation Areas (SRAs), and State Parks (SPs) managed by the NGPC, and 472 acres in nine scattered parcels managed by the BLM. There are also approximately 146,735 acres in Nebraska School Land parcels.¹⁰ The balance of the land in the region is privately owned, and this includes 8,875 acres in 37 wildlife easements. Agriculture (livestock and crops) is the predominant use on private and school lands.

Residential, commercial, and small manufacturing land uses dominate the region's 29 incorporated cities and villages and their immediate surroundings, as well as 10 unincorporated communities. Rural residential land use exists in conjunction with agricultural operations area-wide and recreational subdivisions near Calamus Reservoir and Lake Ericson. According to US census data, there are just under 23,430 permanent residents within the CWPP region.

The primary recreational activities in the region are hunting, camping, boating, and river floating (canoes, kayaks, tubes) on the Calamus, Loups, and Dismal Rivers. Tourism brings in an estimated 288,000 annual visitors to the Bessey Unit of the Nebraska National Forest.¹¹ In 2017, 340,125 people visited the Calamus Reservoir SRA, Victoria Springs SRA hosted 25,848 visitors, and 10,155 people visited Fort Hartsuff State Historical Park.¹² Davis Creek WMA reports over 3,500 annual visitors.¹³ Other state WMAs within the region see thousands of visitors yearly.¹⁴ Ericson Lake receives between 200-800 annual visitors.¹⁵ Hundreds of hunters visit private lands throughout the region annually.

All counties in the CWPP region except for Blaine have county zoning plans in place. Rural Logan County is zoned, but the villages are not. There are currently no restrictions in any of the counties for new building construction in fire-prone areas such as along canyon rims. Garfield County provides Firewise® information when they issue new building permits.

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 Central Sandhills CWPP region, infrastructure includes county, state, and federal roads and bridges, communications systems, the power grid, water systems, hospitals, schools, parks and fairgrounds (can be used as emergency staging areas), 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. Appendix A contains mutual aid maps that provide location information about roads, bridges, waters, and population centers. Local governments may also want to provide street maps showing the locations of public resources.

Emergency evacuations depend on infrastructure. Immediate evacuation destinations are likely to be in areas away from a 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

Central Sandhills Community Wildfire Protection Plan

Security's website <https://www.ready.gov/evacuating-yourself-and-your-family> identifies three critical time/action components of a successful evacuation operation – before, during, and after the evacuation.

Before an evacuation:

- Learn what types of disaster are most likely in your community and plan how you will leave and where you will go for each type of disaster.
 - Identify several places you could go, such as a motel or the homes of friends/family in a nearby town. Choose destinations in different directions to provide some options. If you have pets, make sure your chosen destinations will accept them.
 - Be familiar with alternate routes and other means of transportation out of the area.
 - Be prepared to follow the instructions of local officials.
- Develop a family/household communication and re-unification plan so you can maintain contact and reunite if you are separated.
 - Assemble supplies – both a “go bag” to carry on foot and supplies for longer distances in a personal vehicle.
 - Keep a full tank of gas in your vehicle if an evacuation seems likely. Keep at least a half tank of gas at all times in case of an unexpected need to evacuate. Gas stations may be closed or unable to pump gas if the power is out. Have a portable emergency kit in your vehicle.

During an evacuation:

- Listen to a battery-powered radio and follow local evacuation instructions. During large-scale emergencies, a list of open shelters can be found by downloading FEMA's app: <https://www.fema.gov/mobile-app>
- Take your emergency supply kit.
- Leave early enough to avoid being trapped by fire or severe weather.
- Take your pets with you, but understand that only service animals may be permitted in public shelters. Plan ahead of time how you will take care of your pets.
- If time allows:
 - Tell an out-of-area family member or friend where you are going.
 - Secure your home by closing and locking windows and doors. Most garages contain flammable material. Be sure your garage door and windows are securely closed.
 - Unplug electrical equipment such as radios, televisions, and small appliances. Leave freezers and refrigerators plugged in unless there is a risk of flooding. If there is damage to your home and you are instructed to do so, shut off water, gas, and electricity before leaving.
 - Leave a note telling others when you left and where you are going.
 - Wear sturdy shoes and clothing that provides protection, i.e. long pants, long-sleeved shirt, hat.
 - Check with neighbors to see if anyone needs a ride.
- Follow recommended evacuation routes; shortcuts may be blocked.
- Be alert for road hazards such as washed-out roads or bridges and downed power lines.

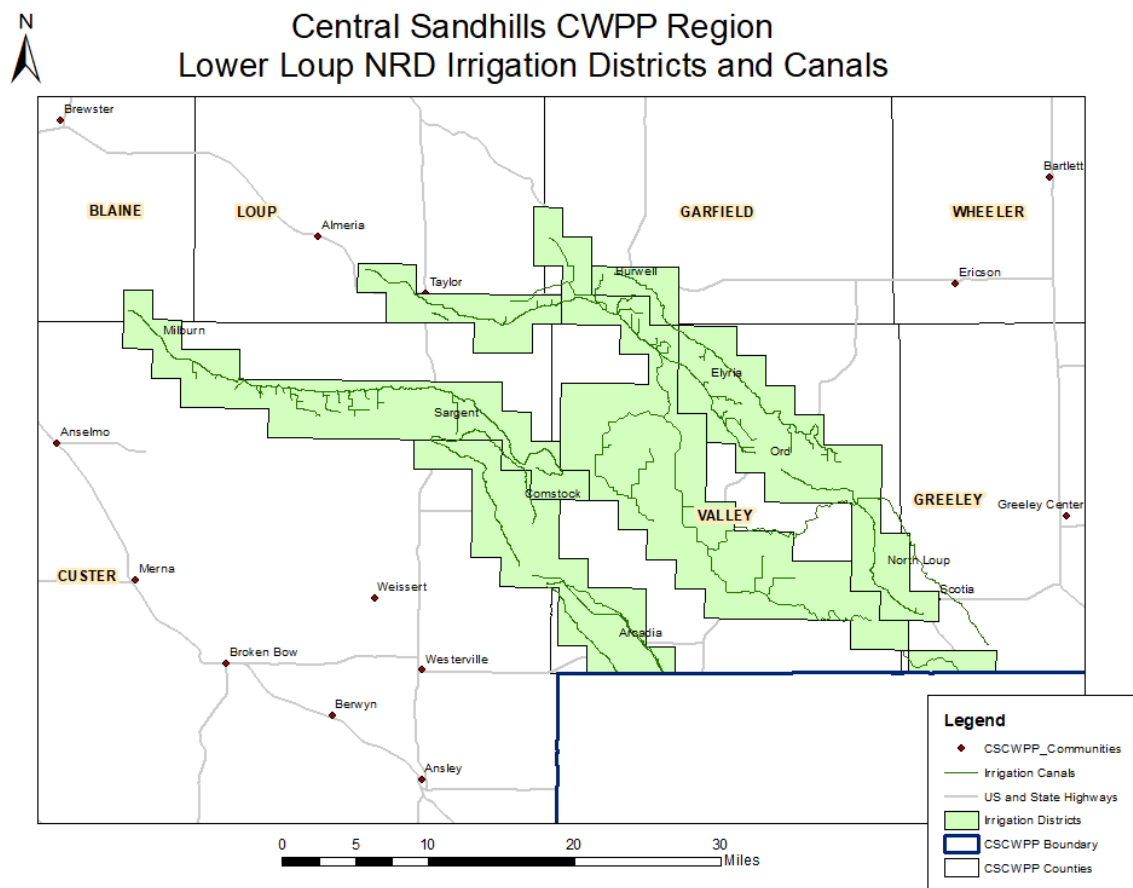
After an evacuation:

- When returning, expect and prepare for disruptions to daily activities. Returning home before debris is cleared can be dangerous.
- Let friends and family know before you leave and when you arrive.
- Charge devices and consider getting extra batteries in case power outages continue.
- Fill up your gas tank and bring supplies such as water and non-perishable food for the trip home.
- Avoid downed power lines; if they are live they can be deadly. Report to power company immediately.
- Only use generators away from your home and NEVER run a generator inside a home or garage, or connect it to your home's electrical system.

Central Sandhills Community Wildfire Protection Plan

Irrigation Districts

Five irrigation districts lie all or partly within the Central Sandhills CWPP region and are shown on Map 1. According to the US Bureau of Reclamation, the North Loup Division of the Pick-Sloan Missouri Basin Program is located within the Loup River drainage basin in central Nebraska. Diversion facilities are on the Calamus and North Loup Rivers. The plan provides direct surface water service to 53,000 acres of land. Operation of the division provides a sustained ground-water supply for the development of an additional 17,000 acres by private investment. Of the 70,000 acres benefiting from project development, 43,500 are considered to be non-irrigated and 26,500 are considered to be irrigated. The Twin Loups Reclamation District and the Twin Loups Irrigation District benefit from and pay for the irrigation facilities. The district operates two dams and reservoirs and their associated canals and pipelines running as far as the edge of Fullerton. Virginia Smith Dam (formerly called Calamus Dam) and Calamus Reservoir, are on the Calamus River. The reservoir is open 24 hours and there are good access roads. The irrigation supply reservoir experiences moderate fluctuations. The reservoir has 5,142 water surface acres, 6,404 land acres and 31 miles of shoreline.¹⁶



Map 1: Surface water irrigation systems operated by the North Loup RPPID and the Middle Loup PPID started delivering diverted surface water as early as 1938. Mid-century development saw the creation of the Sargent Irrigation District and the Farwell Irrigation District. The Twin Loups Reclamation and Irrigation Districts operate the facilities at the Calamus Reservoir and Davis Creek Reservoir for the North Loup Division of the Pick-Sloan Missouri Basin Program.¹⁷

The North Loup Rural Public Power and Irrigation District (RPPID) is headquartered at Ord. It is an irrigation district only; it does not provide power. The district currently serves approximately 23,000 acres located in a five county area consisting of Loup, Custer, Garfield, Valley, and Greeley. The system consists of three diversion dams and 77 miles of main canals, 80 miles of secondary laterals, 18 flumes, and numerous other structures.

Central Sandhills Community Wildfire Protection Plan

The Taylor-Ord Canal begins at a diversion dam located about five miles west of Taylor. This canal, ending at Ord, is 35 miles long with a capacity of 250 cubic feet per second (cfs). The Burwell-Sumter Canal begins at a diversion dam at Burwell and ends about five miles east of Ord. It is 25 miles long with a capacity of 150 cfs. The Ord-North Loup Canal begins at the diversion dam at Ord and ends about three miles southeast of North Loup. It is 17 miles long with a capacity of 125 cfs. The district has no storage facilities and water for irrigation is diverted from the direct flow of the North Loup River.¹⁸

The Twin Loups Reclamation Irrigation District is headquartered at Scotia. Within the CWPP area it serves customers in Garfield, Valley, and Greeley Counties. Virginia Smith Dam (Calamus Reservoir) near Burwell, Davis Creek Dam four miles southwest of North Loup, and Kent Diversion Dam between Taylor and Burwell all provide water storage. The district serves 56,000 acres and includes 162 miles of main and lateral canals. The district operates a lift station/pumping plant eight miles west of Ord, providing water to 11,000 acres.

The Mirdan Canal has a capacity of 720 cfs. It begins at the Virginia Smith Dam and runs 45 miles into the upper end of Davis Creek Reservoir. The Kent Canal has a capacity of 350 cfs. It starts at the Kent Diversion Dam 7 miles west of Burwell and runs 5 miles before running into the Mirdan Canal. The Geranium Canal, with 200 cfs capacity, starts 19 miles downstream from the Calamus Dam and returns to the Mirdan Canal 20 miles later. The Scotia Canal has a capacity of 240 cfs. It starts 30 miles below the Virginia Smith Dam and runs east 33 miles, ending 5 miles southeast of Scotia, where it returns to the North Loup River. The Fullerton Canal, with a capacity of 440 cfs, starts at the Davis Dam and runs 46 miles east to Fullerton, where it returns to the river. The Elba Canal, with a 80 cfs capacity, starts 12 miles downstream from the Fullerton Canal and runs 4 miles, ending above Elba, where it returns to Munson Creek.¹⁹

The Farwell Irrigation District Project is in Custer, Valley, Sherman, and Howard counties in central Nebraska. Water is diverted from the Middle Loup River by the Arcadia Diversion Dam and carried via the Sherman Feeder Canal to Sherman Reservoir, the storage facility for the District. Below the reservoir a system of canals, pumping plants, laterals and drains provide for irrigation of 53,414 acres of fertile lands in Sherman and Howard counties.²⁰

The Sargent Irrigation District and the associated water rights are owned by the Loup Basin Reclamation District. The Loup Basin Reclamation District has an interlocal agreement with the Sargent Irrigation District to manage and operate the facilities within their own respective budget. The project starts at the Milburn Diversion Dam, located near the town of Milburn, on the southern edge of Blaine County, diverts water from the Middle Loup River and has a water right to divert up to 260 cfs. The delivery system is the Sargent Canal and laterals which span across northern Custer County and end near Comstock. The canal stretches 39.6 miles, and has 44.2 miles of laterals of which all is buried into PVC pipe for water conservation. The Sargent Irrigation District provides water to 14,287 certified irrigated acres and has an allotment of 15 inches of water per acre.²¹

The Middle Loup Public Power and Irrigation District (PPID) consists of two diversion dams, four canals, and one open lateral delivering water to 24,000 acres. All the other open laterals have been converted to buried pipelines. The office and shop are located in Arcadia.

The project starts at the Sargent Diversion Dam one mile south of Sargent on the Middle Loup River. Canal #1 runs from the south Sargent diversion outlet for 12.6 miles between the Middle Loup River and base of the hills to the southwest. It ends one mile west and 4.5 miles south of Comstock, returning to the Middle Loup River. The canal capacity is 65 cfs, which serves 3,320 acres. Canal #1 also has a supplemental river pump to help supply water when at capacity.

Central Sandhills Community Wildfire Protection Plan

Canal #2 starts from the north Sargent diversion outlet and continues southeast for 12.5 miles between the river and base of hills. It ends one mile south of Comstock, where it returns to the Middle Loup River. About 250 feet before the canal ends, it feeds an open lateral that continues southwest for 4.3 miles and tail ends into the Sherman feeder canal. The lateral capacity is 7 cfs, the canal capacity is 75 cfs, and it serves 3,583 acres.

Canals #3 and #4 are supplied by the Arcadia Diversion Dam which is situated 4.5 miles south of Comstock, NE or 3 miles north and 5 miles west of Arcadia, NE. Water is diverted into a joint section of canal #3 and canal #4 about 6,100 ft. east of the diversion dam from the Sherman feeder canal. About 1,600 ft. south of inlet, Canal #3 splits from #4 and continues south under the Middle Loup River. Canal #3 continues south and east after the river crossing for 25 miles, serving 7,384 acres. Canal #3 ends 5 miles south and 2 miles east of Loup City, returning to the Middle Loup River. Canal #3 capacity is 125 cfs and it serves 8,464 acres.

After the joint section, Canal #4 continues east and south for 27 miles north of Arcadia and Loup City, ending 6.5 miles southeast of Loup City, where it returns to the Middle Loup River. Canal #4 has a capacity of 130 cfs and serves 8,636 acres.²²

Prescribed Fire and Prescribed Burn Associations

In recent years, 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.

The Nebraska Prescribed Burn Task Force has been active since 1995 in Custer, Lincoln, Dawson, and Buffalo Counties. The Custer Burn Association operates in Custer and Valley Counties. The Central Nebraska Prescribed Burn Association operates in Greeley, Howard, and northeast Sherman Counties.

The Central Platte NRD values prescribed fire as a tool for maintaining and improving native grasslands. According to their website, when a prescribed fire is used along with appropriate grazing practices, the results are increased economic output and wildlife benefit. Fields that are moderately grazed and treated with periodic burns are more drought-tolerant, more diverse in plant and wildlife species, more productive in late summer, at less risk for devastating wildfire, and at less risk for runoff and erosion.²³

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 road construction. The WUI exists in every state in the country, and in every county/community within this CWPP boundary. Site-specific WUI issues are listed in each community section of this CWPP.

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 Central 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.

Central Sandhills Community Wildfire Protection Plan

Vegetation Community	Fire Severity	Fire Regime Characteristics			
		% 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
Ponderosa Pine (Northern Great Plains)	Replacement	5	300	n/a	n/a
	Mixed	20	75	n/a	n/a
	Surface or Low	75	20	10	40

Table 2: Fire intervals for the Nebraska Sandhills and mixed grass prairie types are shown above. The ponderosa pine (Northern Great Plains) model was included to approximate the characteristics of the planted forest in Thomas County.²⁴

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 it burned all the way to Texas. Some of the larger fires in the CWPP area since 2000 are shown in Map 4 in Appendix A. Two of the largest fires in Nebraska's history are not included because they occurred prior to 2000 when data collection began. These are the 100,000 acre fire that started in the Mullen area in 1972 and burned into Thomas County, and the 1965 fire in Thomas County that burned over 18,000 acres²⁵ and destroyed part of the state 4-H camp near Halsey. In 1999, about 75,000 acres of Sandhills prairie burned along a 40-mile front from north of Mullen to Thedford, killing one firefighter.³

In 2006, about 9,600 acres burned near Halsey. An 11,000 acre fire near Thedford in 2011 seriously injured two firefighters. Other nearby large fires in recent years included the 1,720-acre Big Rock Fire near Valentine in 2006 and, in 2012, the Region 24 Wildfire Complex (75,856 acres in Keya Paha, Brown, and Cherry Counties), and a 6,717 acre fire that burned into Cherry County from South Dakota and caused the evacuation of Crookston. Between the Region 23 (Pine Ridge) and Region 24 (Niobrara Valley) wildfire complexes, nearly half a million acres burned in 2012. As observed that year, and evidenced in historical research, rivers are not always a barrier to fire spread.²⁶

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 2017.²⁷ Because the fire districts vary in their level of reporting, there is no accurate, comprehensive fire history available for the CWPP area.

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 woodlands and prairies. This, combined with severe drought, created conditions conducive to the catastrophic wildfires of 2006 and 2012. Drought conditions also increased the wildfire risk in the grasslands.

A statewide map of local mitigation planning areas is included in Appendix A. The Lower Loup, Upper Loup, and Twin Platte NRDs are the designated local mitigation planning areas for the Central 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.

Central Sandhills Community Wildfire Protection Plan

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 residential developments near Calamus Reservoir and Ericson Lake, as well as wooded areas along rivers and creeks where there are homes and other structures. Many of these areas have limited access. 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 for maps.

Fires Reported 2000-2017							
Department	# Fires Human	# Acres Human	# Fires Lightning	# Acres Lightning	Total # Fires	Total # Acres	Mutual Aid Responses
Anselmo	40	1,807	10	155	50	1,962	13
Ansley	32	1,578	0	0	32	1,578	17
Arcadia	16	113	2	1	18	114	11
Arnold	86	10,950	35	2,443	121	13,393	27
Bartlett	31	1,158	5	1,136	36	2,294	23
Brewster	10	2,190	6	51	16	2,240	13
Broken Bow	112	2,460	9	37	121	2,497	38
Burwell	70	4,347	10	70	80	4,416	9
Callaway	17	3,905	3	35	20	3,940	5
Chambers	21	224	6	175	27	398	3
Comstock	10	993	0	0	10	993	3
Dunning	11	670	7	22	18	692	16
Eddyville	7	836	0	0	7	836	1
Ewing	5	24	1	2	6	26	6
Halsey	8	6	5	103	13	109	0
Merna	16	833	1	1	17	834	0
North Loup	22	660	0	0	22	660	10
Oconto	26	2,642	4	127	30	2,769	14
Ord	68	6,161	5	2	73	6,162	2
Purdum	11	8	14	1,132	25	1,139	35
Sargent	70	3,559	4	57	74	3,616	2
Scotia	91	917	9	270	100	1,187	2
Spalding	19	10,198	1	15	20	10,213	1
Stapleton	31	1,581	6	10,870	37	12,451	2
Thedford	35	16,483	24	3,176	59	19,659	11
Wolbach	24	368	2	0	26	368	2
USFS/Bessey	7*	115,644*	34	31,143	41	146,787	No info
Total	896	190,315	203	51,023	1,099	241,333	266

* Includes 2 fires (106,295 acres) with unknown cause.

Table 3: Fires reported to NFS by CSCWPP fire departments between 2000 and 2017. Only departments that reported are listed. Some of these departments did not report every year.

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

Central Sandhills Community Wildfire Protection Plan

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. The US Forest Service has a fire division that responds to wildfires on the Bessey unit of the Nebraska National Forest near Halsey.

Under the Region 26 Common Emergency Management Agreement, Blaine, Garfield, Greeley, Loup, Sherman (not in this CWPP area), Thomas, Valley, and Wheeler Counties have mutual support responsibilities. Lincoln County is part of Region 51 Emergency Management. Custer and Logan Counties have their own emergency managers and are not affiliated with regional emergency management areas.

The Arcadia, Bartlett, Burwell, Comstock, Ericson, Greeley, North Loup, Ord, Primrose, Scotia, Spalding, and Wolbach fire departments are all members of the Loup Valley Mutual Aid District. The Anselmo, Arnold, Brewster, Dunning, Halsey, Hyannis, McPherson Co., Mid-Cherry, Mullen, Purdum, Seneca, Stapleton, Thedford, USFS, and USFWS fire departments are all members of the Sandhills Mutual Aid Association. Arcadia is part of the Loup Platte Mutual Aid Association.

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

Staging Areas and Safety Zones

The forested drainages 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 under each county tab for those who provided it. Fairgrounds and city parks are generally good locations, depending

Central Sandhills Community Wildfire Protection Plan

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). Some counties have provided information about bridges that will support the weight of a tanker. For those who provided this information, it has been mapped and appears in the individual county sections.

Communications

Gaps in cellular service are widespread across the Central Sandhills region. There were some radio compatibility issues that 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 Central Sandhills CWPP, there are 74 pieces of FEPP equipment, valued at \$7,482,000 and housed at 22 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. The 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

Central Sandhills Community Wildfire Protection Plan

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 18,684 in 2017. 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.

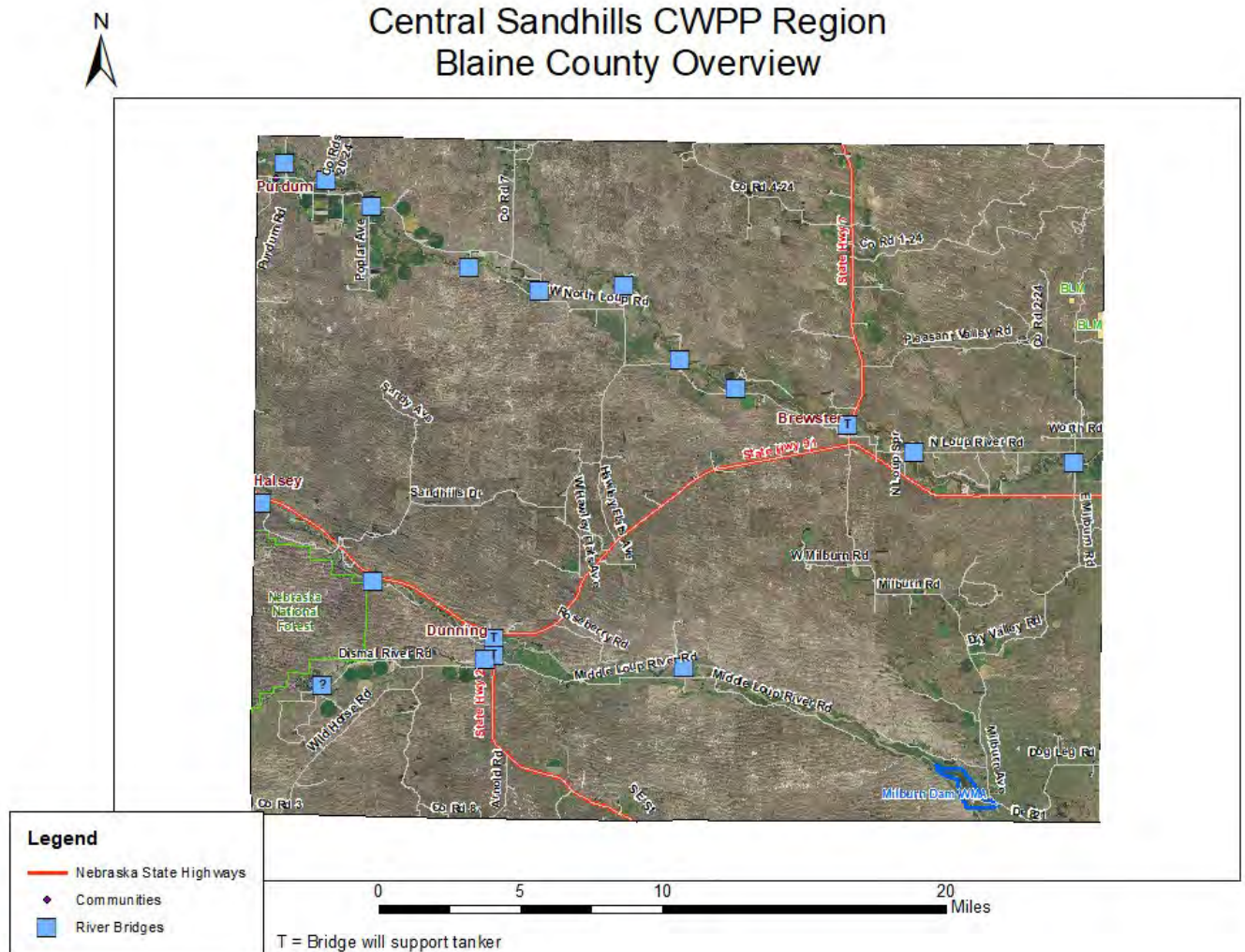
Central Sandhills Community Wildfire Protection Plan

Community-Specific Considerations

BLAINE COUNTY

714 sq. miles

2015 population: 487



Community Profile

Blaine County lies in the northern tier of CWPP counties. It is bounded on the west by Thomas County, on the south by Custer County, on the east by Loup County, and on the north by Brown County and the southeast corner of Cherry County. Population centers include the county seat of Brewster (pop. 17), Dunning (pop. 106), and Purdum (pop. 21). The village of Halsey (pop. 83) straddles the Blaine/Thomas County line.

No federal highways pass through the county. State Highway 2 crosses the southwest corner of the county. State Highway 91 enters the county on the east from Loup County and ends at its junction with Highway 2 near Dunning. State Highway 7 enters Blaine County from the north (Brown County) and connects with State Highway 91 at Brewster.

Fire districts all or partly in Blaine County include the Brewster, Dunning, Halsey, Purdum Volunteer Fire Districts (VFDs), and the Nebraska National Forest (Bessey Ranger District).

Central Sandhills Community Wildfire Protection Plan

Besides municipal lands, public lands include the east end of the Bessey Ranger District of the Nebraska National Forest (approx. 10,476 acres), two small BLM parcels in the northeast part of the county (approx. 195 acres total), the Milburn Dam WMA (approx. 672 acres, managed by the NGPC) in the southeast corner of the county, and approximately 21,293 acres in school lands.

Vegetation zones include Sandhills prairie, riparian deciduous forest along the North Loup, Middle Loup, and Dismal Rivers and their tributaries, and agriculture crop fields concentrated in the river valleys and scattered elsewhere throughout the county. In the southeast and southwest corners of the county eastern redcedar has encroached into grasslands to become a distinct and highly flammable vegetation type.

The area most at-risk from wildfire is the Bessey Ranger District of the Nebraska National Forest, which straddles the Blaine/Thomas County line. This area contains about 25,000 acres of planted pines and eastern redcedars, constituting a high fire hazard. The Halsey fire chief considers the village itself as a concern, as the fire department is not equipped for fighting structure fires. Some homes on the north side of town have heavy fuels close to them. He also has concerns that the river bridges in his district in both Blaine and Thomas Counties are not rated to handle tankers. Maps of these areas are included in Appendix A.

Other locations of special concern include population centers adjacent to grasslands, and the west side and southeast corner of the county, where eastern redcedar has encroached into grasslands, creating high fire hazard. All of Blaine 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.

Infrastructure and Protection Capabilities

Water Sources

There are no municipal water systems in Blaine County. Homes and businesses are on private wells. The North Loup, Middle Loup, and Dismal Rivers and most of their tributaries are reliable water sources. There is a small reservoir (approx. 30 acres) located on private land on the North Loup River in the northwest corner of the county. There are three lakes (approx. 160, 218, and 42 acres) on private land on the north county line west of State Highway 7. Windmills can provide water when they are operational.

The Milburn Diversion Dam is located on the Middle Loup River in the southeast corner of the county. It diverts water into the Sargent Irrigation Canal, which runs for about a mile through Blaine County before entering Custer County. There are numerous small (less than one-acre) lakes along Wild Horse Creek in the southwest part of the county and along an unnamed stream southeast of Dunning. 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. Some smaller streams have intermittent flows and are not reliable.

Utilities/Phone Service

Rural electric service is provided by Custer Public Power District (Areas 3 and 6), with headquarters in Broken Bow. Cellular and landline telephone services are available in the county. There are gaps in cellular coverage in some areas.

Staging Areas, Roads and Bridges

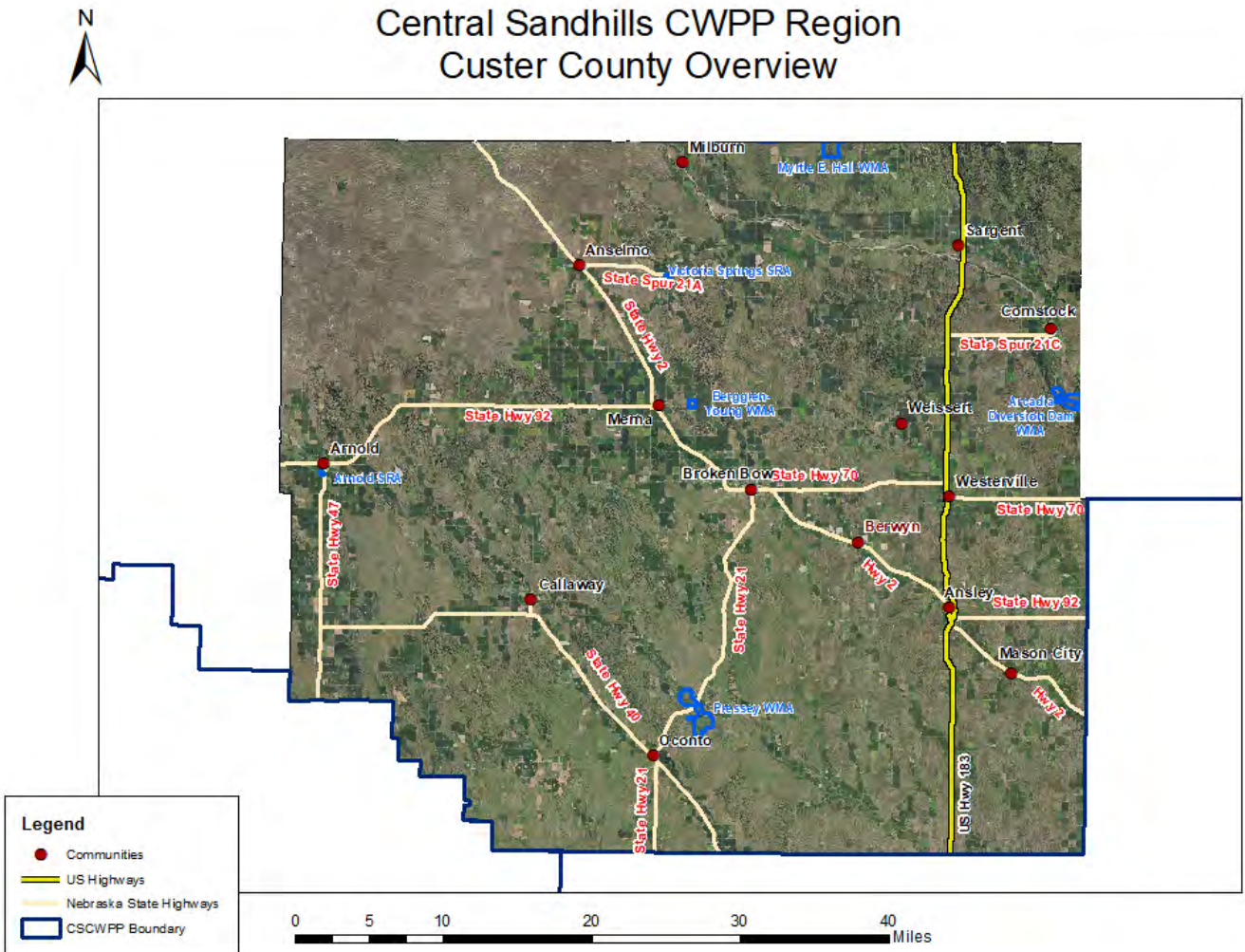
No specific information on staging areas, roads, or bridges was provided by Blaine County officials. The Halsey fire chief provided specific information on bridges in the Halsey Fire District in Blaine and Thomas Counties. The County Mutual Aid maps in Appendix A show the locations of roads and bridges. Where information was available, bridges capable of supporting a tanker are labeled with a "T."

Central Sandhills Community Wildfire Protection Plan

CUSTER COUNTY

2,576 sq. miles

2017 population: 10,897



Community Profile

Custer County is located in the south central portion of the CWPP area. It is bounded on the west by Logan and Lincoln Counties, on the north by Blaine and Loup Counties, on the east by Valley and Sherman Counties, and on the south by Dawson and Buffalo Counties.

Incorporated communities include the county seat of Broken Bow (pop. 3,546), and Anselmo (pop. 140), Ansley (pop. 427), Arnold (pop. 597), Berwyn (pop. 81), Callaway (pop. 529), Comstock (pop. 90), Mason City (pop. 173), Merna (pop. 368), Oconto (pop. 146), and Sargent (pop. 506). Unincorporated communities include Cumro, Etna, Finchville, Gates, Lillian, Lodi, Milburn, New Helena, Round Valley, Walworth, Weissert, Wescott, and Westerville.

US Highway 183 crosses the eastern part of the county from north to south. Nebraska Highway 2 crosses the county from northwest to southeast. State Highway 92 enters Custer County from the west, jogging east and exiting to Sherman County. State Highway 47 enters from Dawson County near Custer County's southwest corner, and ends at Arnold, where it meets Highway 92. State Highway 40 runs from Highway 47 south of Arnold east and southeast, exiting to Dawson County east of Highway 21. State Highway 21 enters from the center of

Central Sandhills Community Wildfire Protection Plan

Dawson County's north boundary runs north and northeast, ending at Highway 2 in Broken Bow. State Highway 70 runs from Broken Bow east, exiting into Valley County.

Volunteer fire departments all or partly within Custer County include Anselmo, Ansley, Arcadia, Arnold, Broken Bow, Callaway, Comstock, Eddyville, Mason City, Merna, Oconto, and Sargent.

Besides municipal lands, public lands include 44,160 acres in school lands; two SRA's and all or parts of four state WMAs (2,564 acres total), and 42 acres in two BLM parcels in the northeast quarter of the county.

Vegetation zones include Sandhills prairie in the northwest quarter of the county; mixed grass prairie in the central and southeast parts of the county; riparian deciduous forest along the Middle Loup, South Loup, and Wood Rivers and their tributaries; eastern redcedar forest and savanna in the central portion of the county; and agriculture crop fields concentrated in the river valleys, and the central and southwest areas. In many areas eastern redcedar has encroached into grasslands to become a distinct and highly flammable vegetation type.

Locations of special concern include population centers adjacent to grasslands, canyons, and areas where eastern redcedar has encroached into grasslands, creating high fire hazard. Local fire chiefs have identified specific areas presenting difficult access, subdivisions with only one way in and out, excessive distance from water sources, and proximity to heavy fuels and rough terrain. In Custer County, these locations include the area around Mason City, the area between Comstock and Arcadia, the northeast part of the Sargent Fire District, and the McKinley Road vicinity between Callaway and Broken Bow, including the difficult terrain straddling the Callaway and Broken Bow Fire Districts. Maps of these areas are included in Appendix A.

All of Custer County's population centers, dispersed ranches, and forested valleys 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

Larger communities have municipal water systems. Ranches and smaller population centers are on private wells. The Middle Loup, South Loup, and Wood Rivers and their tributaries are generally reliable water sources. Windmills can provide water when they are operational. Reservoirs, ponds, and stock tanks are located throughout the county. During drought conditions many of the reservoirs and ponds may not be reliable water sources. Some smaller streams have only intermittent flows and are not reliable. The Comstock, Mason City, and Sargent Fire Departments noted a lack of water sources in many rangeland areas within their districts. Irrigation canals in Custer County include the Sargent Canal, operated by the Sargent Irrigation District; and Canal #1 and Canal #2, operated by the Middle Loup PPID.

Utilities/Phone service

Rural electric service is provided by Custer Public Power District (Areas 1, 2, 3, 4, and 5), with headquarters in Broken Bow. Cellular and landline telephone services are available in the county. There are gaps in cellular coverage in some areas.

Staging Areas

No specific information on staging areas was provided by Custer County officials.

Roads and Bridges

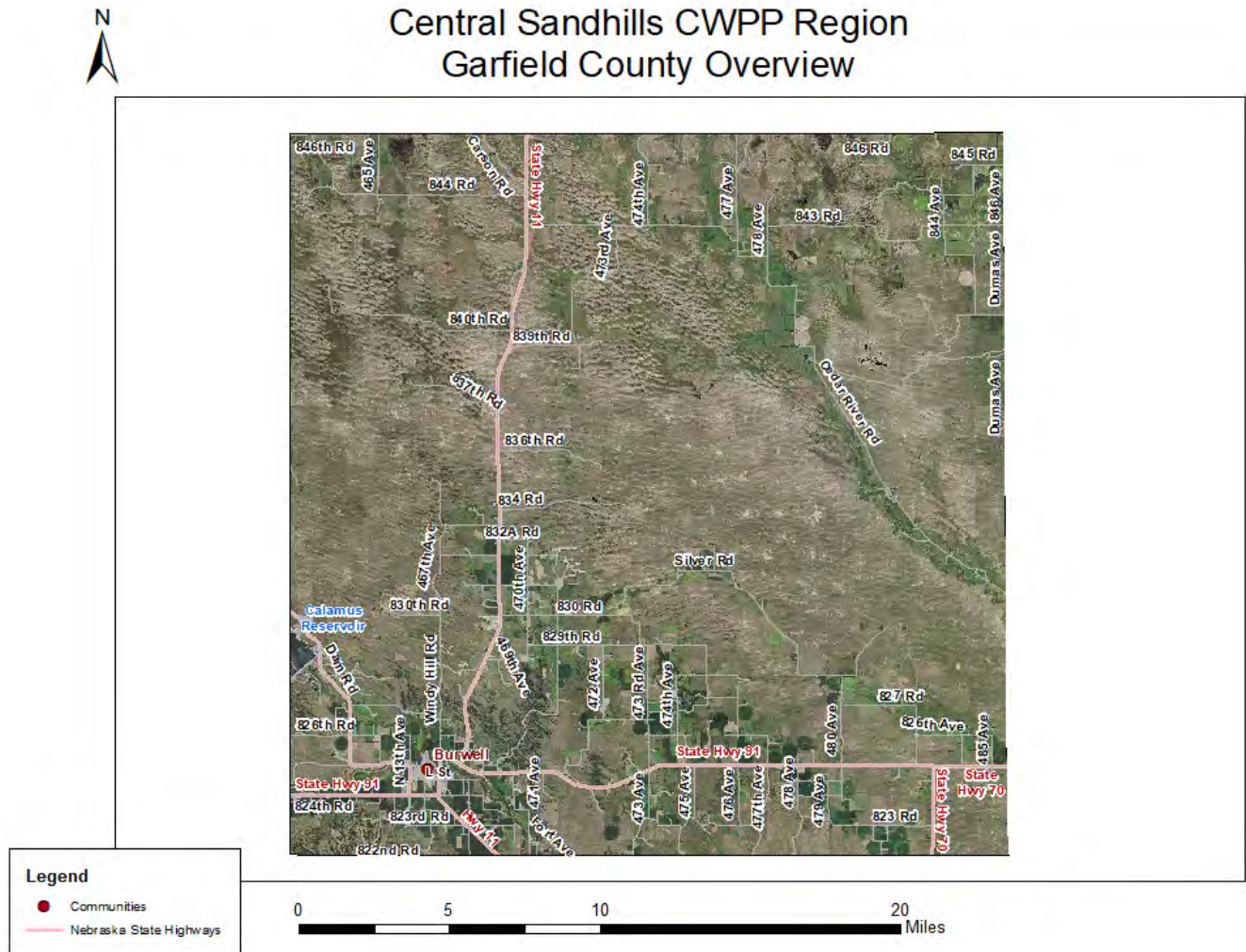
Bridges and bridge limits were identified as a concern by the Callaway and Mason City fire departments. The Custer County Mutual Aid map in Appendix A shows the locations of roads and bridges. Where such information was available, bridges capable of supporting a tanker are labeled with a "T."

Central Sandhills Community Wildfire Protection Plan

GARFIELD COUNTY

571 sq. miles

2017 population: 2,016



Community Profile

Garfield County lies in the north tier of the CWPP counties. It is bounded on the west by Loup County, on the south by Valley County, on the east by Wheeler County, and on the north by Holt County. Burwell (pop. 1,191) is the only incorporated community in the county.

No federal highways cross the county. State Highway 11 crosses the west part of the county from north to south. State Highway 91 crosses the south part of the county from west to east. State Highway 96 starts at Highway 91 near Burwell and runs northwest along the Calamus Reservoir into Loup County. State Highway 70 enters the southeast corner of Garfield County from Valley County. It joins State Highway 91 and continues east into Wheeler County. The entire county is in the Burwell Fire District.

Besides municipal lands, public lands include NGPC properties: the Mirdan Canal WMA (54 acres) and the Calamus Reservoir SRA, WMA, and Fish Hatchery (1,781 acres are in Garfield County; parts of the WMA and SRA are also in Loup County). There are 14,516 acres in school lands across Garfield County.

Central Sandhills Community Wildfire Protection Plan

Vegetation zones include Sandhills prairie covering most of the county, riparian deciduous forest along the North Loup River and Cedar Creek and their tributaries, eastern redcedar forest and savanna in the southwest part of the county, and agriculture crop fields concentrated in the southwest quarter of the county. In the southwest part of the county eastern redcedar has encroached into grasslands to become a distinct and highly flammable vegetation type.

The Burwell fire chief identified the recreational-residential developments surrounding the Calamus Reservoir as of particular concern. This area includes subdivisions – some with only one way in and out – with more than 50 homes, narrow roads, flammable windbreaks, and proximity to heavy fuels and rough terrain. Some areas lack water within an effective distance. This is a fast-growing area with limited access and many large homes. Other high-risk regions include canyons and rough terrain northeast and southwest of Burwell. There are several areas where eastern redcedar has encroached into grasslands, creating high fire hazard. Maps of the Calamus developments and other high-risk areas are included in Appendix A.

All of Garfield County's population centers, dispersed ranches, and forested valleys 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

Burwell has a municipal water system. Other developed areas are on private wells. The Calamus Reservoir is the largest water body in the county and has good access at several boat ramps (see Appendix A). The North Loup River and Cedar Creek and their larger tributaries are generally reliable water sources. Ponds and stock tanks are located on ranches throughout the county. 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. Irrigation canals in Garfield County include the Taylor-Ord Canal and the Burwell-Sumter Canal, both operated by the North Loup Public Power and Irrigation District (PPID); and the Mirdan and Kent canals, operated by the Twin Loups Reclamation Irrigation District.

Utilities/Phone Service

Rural electric service in Garfield County is provided by Black Hills Energy, Loup Valley Rural Public Power, and Burwell Municipal Power. A small area on the west end of the county is serviced by the Custer Public Power District (Area 3). Cellular and landline telephone services are available in the county. There are gaps in cellular coverage in some areas.

Staging Areas, Roads and Bridges

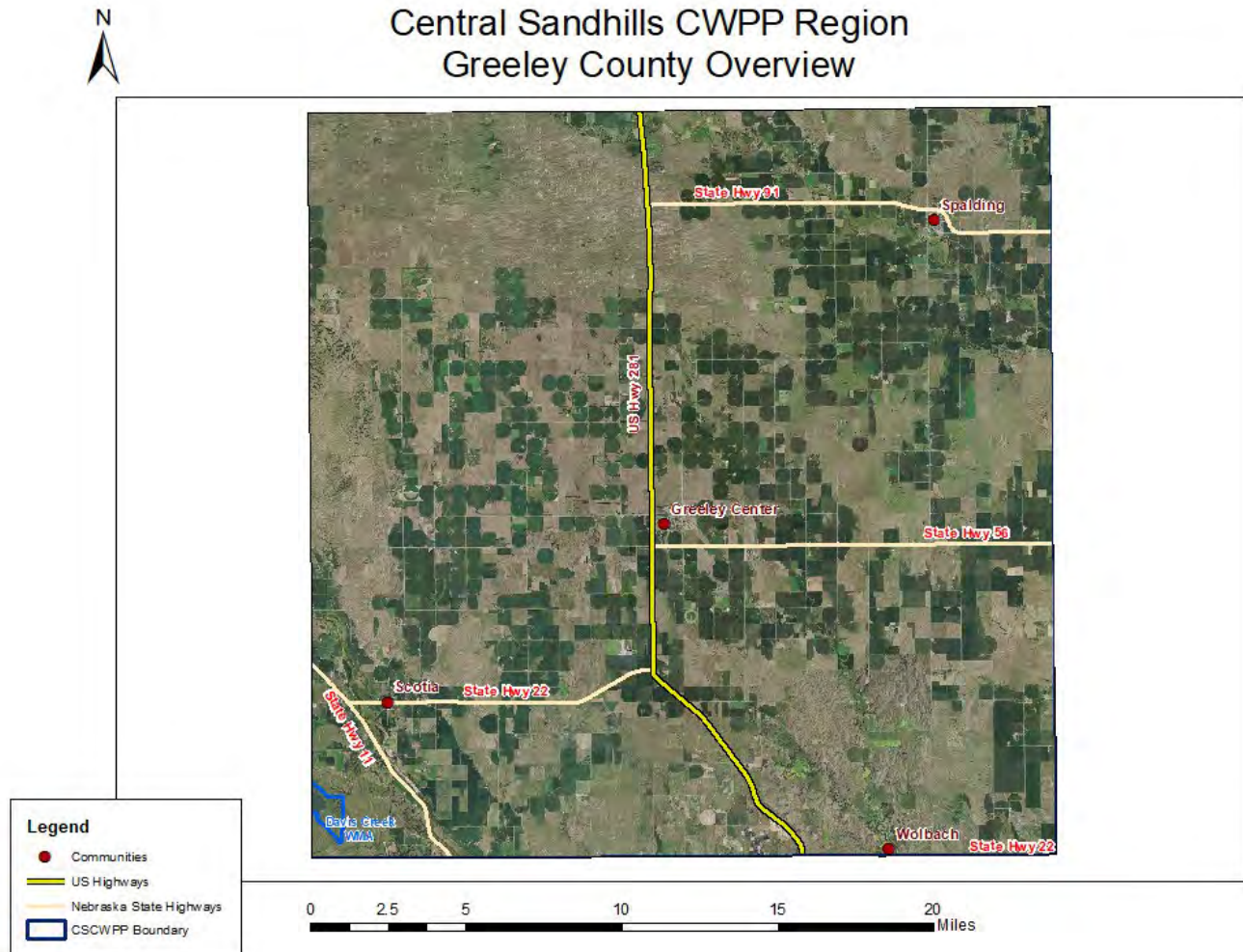
No specific information on staging areas, roads, or bridges was provided by Garfield County officials.

Central Sandhills Community Wildfire Protection Plan

GREELEY COUNTY

571 sq. miles

2017 population: 2,374



Community Profile

Greeley County occupies the southeast corner of the CWPP area. It is bounded on the north by Wheeler County, on the west by Valley County, on the south by Howard County, and on the east by Boone and Nance Counties. Incorporated municipalities include the county seat of Greeley Center (pop. 434), Scotia (pop. 291), Spalding (pop. 448), and Wolbach (pop. 257). Unincorporated communities include Belfast, Brayton, Horace, O'Connor, and Scotia Junction.

US Highway 281 bisects the county from north to south. State Highway 11 cuts across the southwest corner of the county, connecting Valley and Howard Counties. State Highway 22 enters from Valley County on State Highway 11, turns east near Scotia, joining US Highway 281 South, then turns east toward Wolbach before exiting into Nance County. State Highway 56 runs east from US Highway 281 south of Greeley Center, exiting into Boone County. State Highway 91 enters from US Highway 281 in north central Greeley County, then runs east through Spalding before exiting into Boone County. Greeley County volunteer fire departments include Greeley, Scotia, Spalding, and Wolbach.

Besides municipal lands, public lands include 6,600 acres in school lands and approximately 716 acres of the 2,450-acre NGPC's Davis Creek WMA (the balance of the WMA is in Valley County).

Central Sandhills Community Wildfire Protection Plan

Vegetation zones include Sandhills prairie in the northwest part of the county, agricultural fields and mixed-grass prairie in the rest of the county, riparian deciduous forest along the North Loup and Cedar Rivers and their tributaries, and pockets of eastern redcedar savanna in the western part of the county north of the North Loup River. In some areas in the western part of the county, eastern redcedar has encroached into grasslands to become a distinct and highly flammable vegetation type.

Locations of special concern include population centers adjacent to grasslands, canyons, and areas where eastern redcedar has encroached into grasslands, creating high fire hazard, such as the area is north of Spalding and the area north of Scotia that straddles the Scotia and Ord fire districts. The southwest corner of the county, around the Davis Creek WMA, has limited road access and rough terrain. The Scotia fire chief identified the area known as Will's Washout, two miles northeast of Cotesfield in Howard County but within the Scotia Fire District. This area contains heavy fuels, homes with ingress/egress issues, rough topography, and a lack of water within an effective distance. Maps of these areas are included in Appendix A. The Scotia fire chief said that bridge weight limits are a major concern in the county.

All of Greeley County's population centers, dispersed ranches, and forested valleys 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

Incorporated communities have municipal water systems. Ranches and smaller population centers are on private wells. The North Loup and Cedar Rivers and their tributaries are generally reliable water sources. Ponds and stock tanks are located throughout 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. The Scotia Fire Department noted a lack of water sources in some areas is an issue. Irrigation canals in Greeley County include parts of the Scotia and Fullerton Canals, operated by the Twin Loups Reclamation Irrigation District; and a short section of the Ord-North Loup Canal, operated by the North Loup Rural Public Power and Irrigation District (RPPID).

Utilities/Phone Service

Rural electric service in Greeley County is provided by Howard Greeley Rural Public Power District, with headquarters in St. Paul, Nebraska and by Cornhusker Public Power District (Region 1), headquartered in Columbus, Nebraska. Cellular and landline telephone services are available in the county. There are gaps in cellular coverage in some areas.

Staging Areas, Roads and Bridges

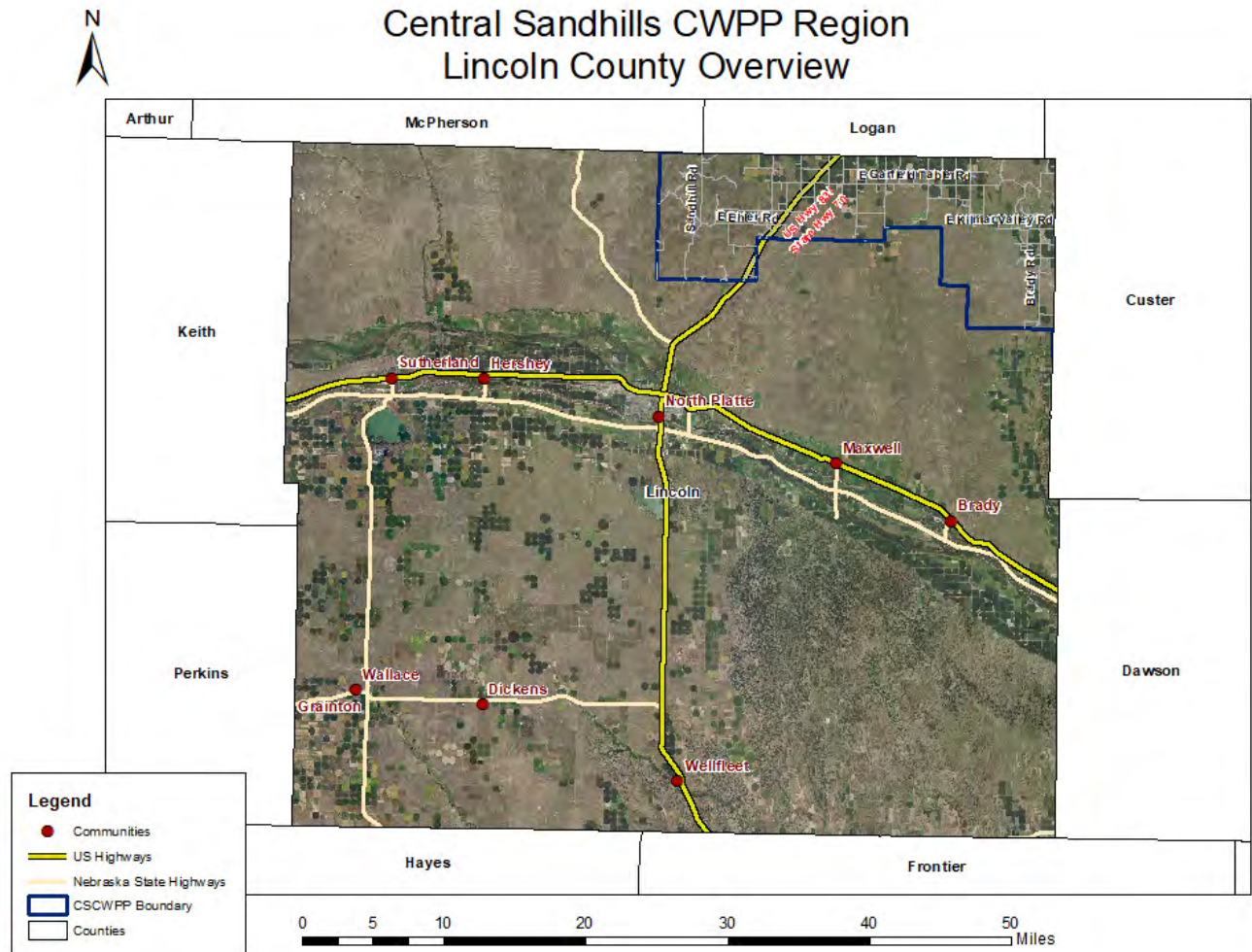
No specific information on staging areas, roads, or bridges was provided by Greeley County officials.

Central Sandhills Community Wildfire Protection Plan

LINCOLN COUNTY

2,575 sq. miles (225 sq. miles within CWPP boundary)

2017 population: 35,280 (population is mostly outside CWPP boundary)



Community Profile

Part of the northeast quarter of Lincoln County forms the southwest corner of the CWPP area. The remainder of the eastern two-thirds of Lincoln County is in the Loess Canyons CWPP region, and the western third of the county is in the Southwest Nebraska CWPP region. The Central Sandhills portion of the county is bounded on the north by Logan and McPherson Counties, and on the east by Custer County. There are no incorporated or unincorporated communities within the Lincoln County portion of the Central Sandhills CWPP region.

US Highway 83/State Highway 70 enters Lincoln County from the north and exits the CWPP region about 12 miles north of North Platte. The Arnold and Stapleton Fire Districts cover this area of Lincoln County. Approximately 4,160 acres of school lands comprises the only public land ownership in this part of the county.

Vegetation zones include Sandhills prairie and mixed grass prairie with agricultural fields concentrated in the north central part of the area. The area most at-risk from wildfire is located in the northwest corner of the county, where there is rough terrain and few roads. A map of this area is included in Appendix A.

Central Sandhills Community Wildfire Protection Plan

The area has a history of large wildfires. In 2011, a wildfire started in this part of Lincoln County and burned over 20,000 acres into Logan County, where it was stopped just south of Stapleton. It caused over \$4 million in damage, including the destruction of several homes.²⁸ All of this area's 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

There are no municipal water systems in this part of Lincoln County. Ranches and farms are on private wells. Windmills can provide water when they are operational. The only perennial streams in this part of the county are several unnamed tributaries of Sand Creek. Ponds and stock tanks are located on ranches and farms throughout the area. During drought conditions some of the ponds may not be reliable sources of water. Some smaller streams have intermittent flows and are not reliable.

Utilities/Phone Service

Rural electric service in this part of Lincoln County is provided by Custer Public Power District (Areas 4 and 5), with headquarters in Broken Bow. Cellular and landline telephone services are available in the county. There are gaps in cellular coverage in some areas.

Staging Areas, Roads and Bridges

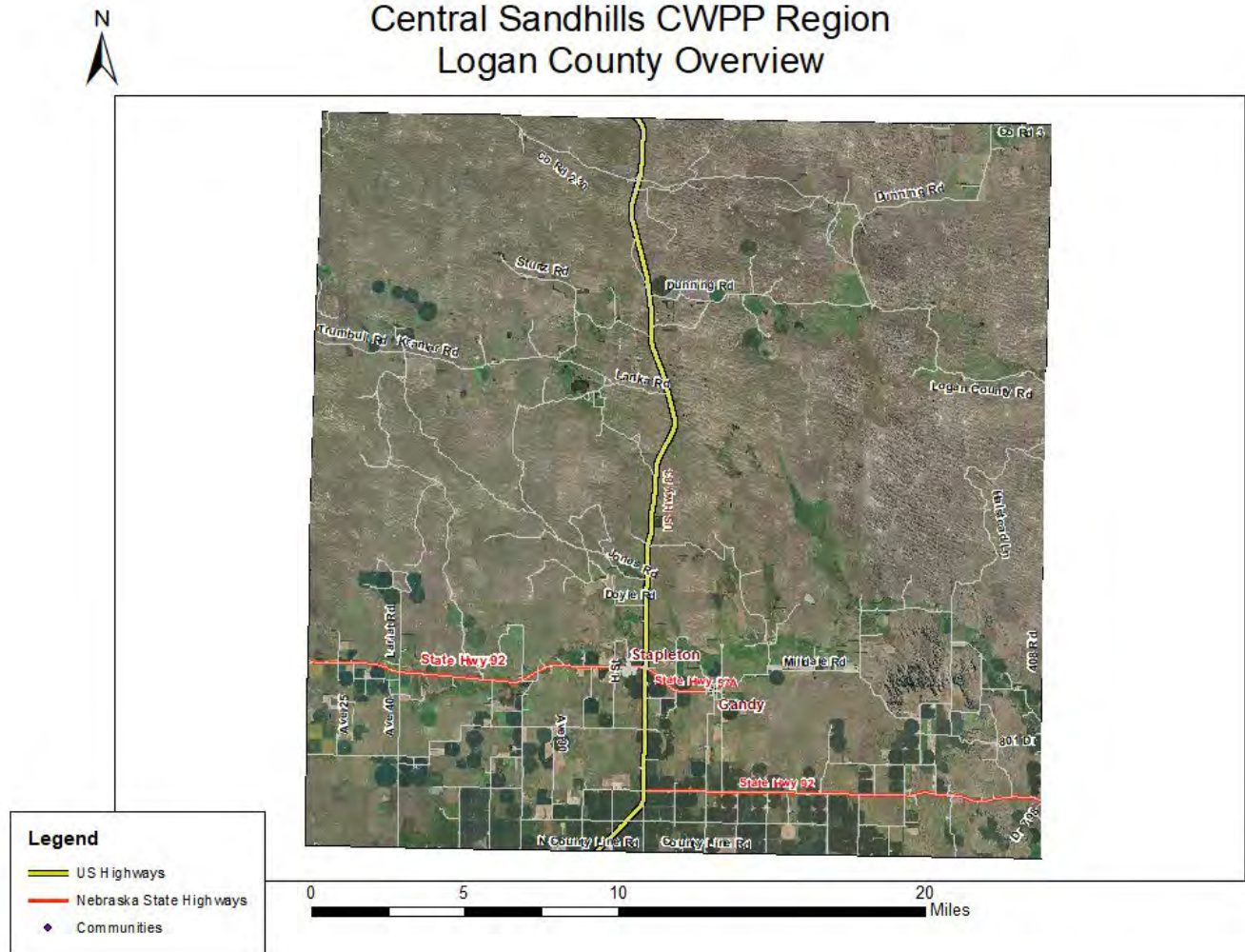
No specific information on staging areas, roads, or bridges was provided by Lincoln County officials.

Central Sandhills Community Wildfire Protection Plan

LOGAN COUNTY

571 sq. miles

2017 population: 768



Community Profile

Logan County is located on the west end of the CWPP area. It is bounded on the north by Thomas County, on the east by Custer County, on the south by Lincoln County, and on the west by McPherson County. Incorporated communities include the county seat of Stapleton (pop. 306) and Gandy (pop. 32).

US Highway 83 bisects the county from north to south. State Highway 92 crosses the southern part of the county from west to east. Besides municipal lands, public lands include 12,245 acres of state school lands.

Fire districts all or partially within Logan County include Stapleton and Arnold.

Vegetation zones include Sandhills prairie in the northern three quarters of the county and mixed grass prairie with agricultural fields in the south part of the county. The area most at-risk from wildfire is located in the southeast corner of the county, in the Arnold Fire District, where there is rough terrain and few roads. In this area eastern redcedar has encroached into grasslands, creating high fire hazard. A map of this area is included in Appendix A.

Central Sandhills Community Wildfire Protection Plan

The area has a history of large wildfires. In 2011, a wildfire burned over 20,000 acres and was stopped just south of Stapleton. It caused over \$4 million in damage, including several homes destroyed.²⁸ All of Logan 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

The only developed water system is in Stapleton. Ranches and farms are on private wells. The South Loup River and Wild Horse Creek and their tributaries are generally reliable water sources. Windmills can provide water when they are operational. Ponds and stock tanks are located throughout the county. During drought conditions some of the ponds may not be reliable sources of water. Some smaller streams have only intermittent flows and are not reliable.

Utilities/Phone Service

Rural electric service in Logan County is provided by Custer Public Power District (Area 5), with headquarters in Broken Bow. Cellular and landline telephone services are available in the county. There are gaps in cellular coverage in some areas.

Staging Areas, Roads and Bridges

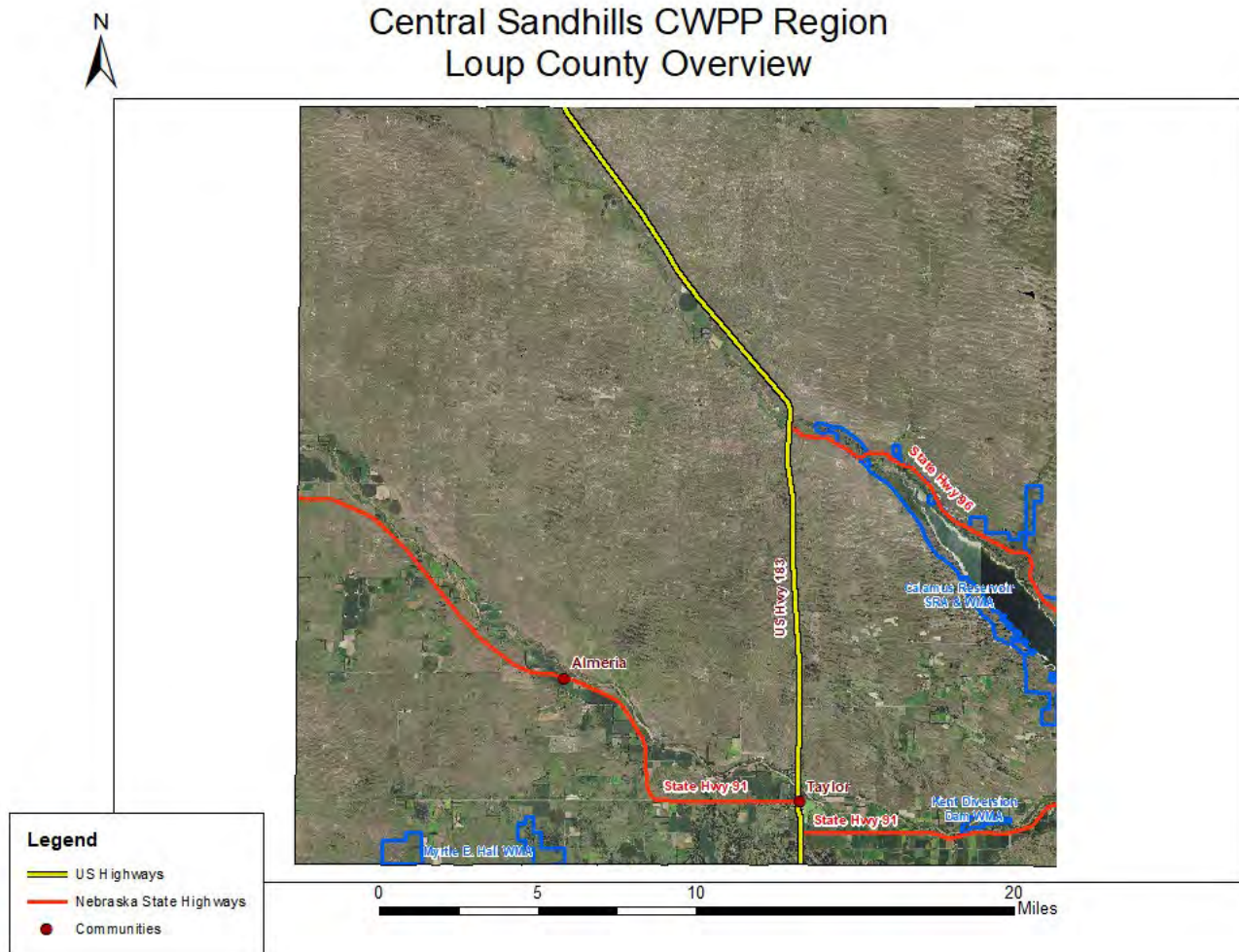
No specific information on staging areas, roads, or bridges was provided by Logan County officials.

Central Sandhills Community Wildfire Protection Plan

LOUP COUNTY

571 sq. miles

2017 population: 609



Community Profile

Loup County lies in the northern tier of CWPP counties. It is bounded on the west by Blaine County, on the south by Custer County, on the east by Garfield County, and on the north by Rock County. Taylor (pop. 183) is the only incorporated community in the county. Almeria, about 10 miles northwest of Taylor, is the county's only unincorporated community.

US Highway 183 bisects the county from northwest to south. State Highway 91 crosses the south part of the county from west to east. State Highway 96 starts in neighboring Garfield County at Highway 91 near Burwell and runs northwest along the Calamus Reservoir into Loup County, ending at US 183. The western three quarters of Loup County is in the Loup County Fire District. The eastern quarter of the county lies in the Burwell Fire District.

Besides municipal lands, public lands include 11,285 acres in school lands. NGPC properties include the Kent Diversion Dam WMA (128 acres), the north part of Myrtle E. Hall WMA (1,342 acres), and the Calamus Reservoir SRA and WMA (1,688 acres are in Loup County; the remainder is in Garfield County). There is one 78-acre BLM parcel in western Loup County.

Central Sandhills Community Wildfire Protection Plan

Vegetation zones include Sandhills mixed-grass prairie with riparian deciduous forest along the North Loup and Calamus Rivers and their tributaries, and agriculture crop fields along the North Loup River Valley. In parts of the county eastern redcedar has encroached into grasslands to become a distinct and highly flammable vegetation type.

The Burwell fire chief identified the recreational/residential developments surrounding the Calamus Reservoir as of particular concern. This area includes subdivisions – some with only one way in and out – with more than 50 homes, narrow roads, flammable windbreaks, and proximity to heavy fuels and rough terrain. Some areas lack water within an effective distance. This is a fast-growing area with limited access and many large homes. Another high-risk region includes canyons and rough terrain along the southeastern border of the county where eastern redcedar has encroached into grasslands, creating high fire hazard. Maps of the Calamus developments and other high-risk areas are included in Appendix A.

All of Loup County's population centers, dispersed ranches, and forested valleys 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

Taylor has a municipal water system. Other developed areas are on private wells. The Calamus Reservoir is the largest water body in the county and has good access at several boat ramps (see Appendix A). The North Loup and Calamus Rivers and their larger tributaries are generally reliable water sources. Ponds and stock tanks are located on ranches throughout the county. 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. The Taylor-Ord Canal, operated by the North Loup Public Power and Irrigation District, starts near Taylor and exits into Garfield County near the southeast corner of Loup County.

Utilities/Phone Service

Rural electric service in Loup County is provided by the Custer Public Power District (Area 3). Cellular and landline telephone services are available in the county. There are gaps in cellular coverage in some areas.

Staging Areas, Roads and Bridges

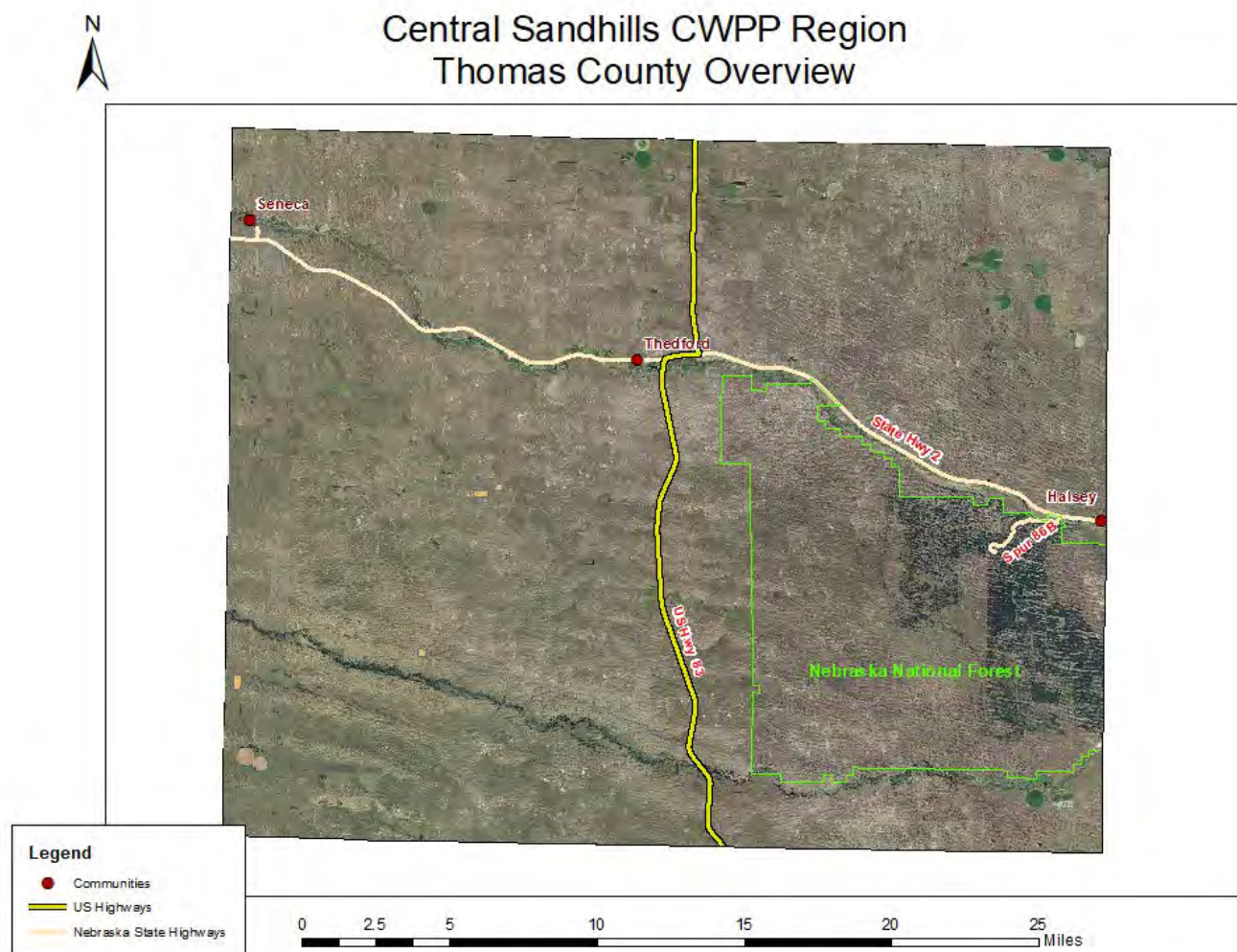
No specific information on staging areas, roads, or bridges was provided by Loup County officials.

Central Sandhills Community Wildfire Protection Plan

THOMAS COUNTY

714 sq. miles

2017 population: 725



Community Profile

Thomas County is in the northwest corner of the CWPP region. It is bounded on the east by Blaine County, on the south by Logan and McPherson Counties, on the west by Hooker County, and on the north by Cherry County. Population centers include the county seat of Thedford (pop. 219), the Village of Halsey (pop. 83), and unincorporated Seneca (pop. 33).

US Highway 83 bisects the county from north to south. State Highway 2 crosses the county from west to east. Fire districts – all or partially within Thomas County – include Thedford, Dunning, Halsey, Purdum, and the Nebraska National Forest (Bessey Ranger District).

Besides municipal lands, public lands include the west end of the Bessey Ranger District of the Nebraska National Forest (approx. 79,674 acres), five BLM parcels in the northeast part of the county (approx. 252 acres total), and approximately 12,464 acres in school lands.

Vegetation zones include Sandhills prairie, riparian deciduous forest along the Middle Loup and Dismal Rivers, and mixed forest on the Nebraska National Forest. A few agriculture crop fields are scattered across the

Central Sandhills Community Wildfire Protection Plan

northern part of the county. In the southeast and southwest corners of the county eastern redcedar has encroached into grasslands to become a distinct and highly flammable vegetation type.

The area most at-risk from wildfire is the Bessey Ranger District of the Nebraska National Forest, located near Halsey. This area contains about 25,000 acres of planted pines and eastern redcedars, constituting a high fire hazard. There are also scattered areas throughout Thomas County where eastern redcedar has encroached into grasslands, increasing fire risk. The Thedford Fire Department considers the Dismal River Valley to be a concern due to rough terrain and limited road access. The Halsey fire chief considers the village itself as a concern, as the fire department is not equipped for fighting structure fires. Some homes on the north side of town have heavy fuels close to them. He also has concerns that the river bridges in his district both in Thomas and Blaine Counties are not rated to handle tankers. Maps of these areas are included in Appendix A.

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

Infrastructure and Protection Capabilities

Water Sources

The Nebraska National Forest/Bessey Ranger District headquarters has facilities for filling tankers. Thedford has a municipal water system. Halsey and Seneca do not. Ranches, homes, and businesses in areas outside of Thedford are on private wells. The Middle Loup and Dismal Rivers are reliable water sources. 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.

Utilities/Phone Service

Rural electric service is provided by Custer Public Power District (Areas 5 and 6), with headquarters in Broken Bow. Cellular and landline telephone services are available in the county. There are gaps in cellular coverage in some areas.

Staging Areas

The Bessey Ranger District headquarters near Halsey provides a good staging area location.

Roads and Bridges

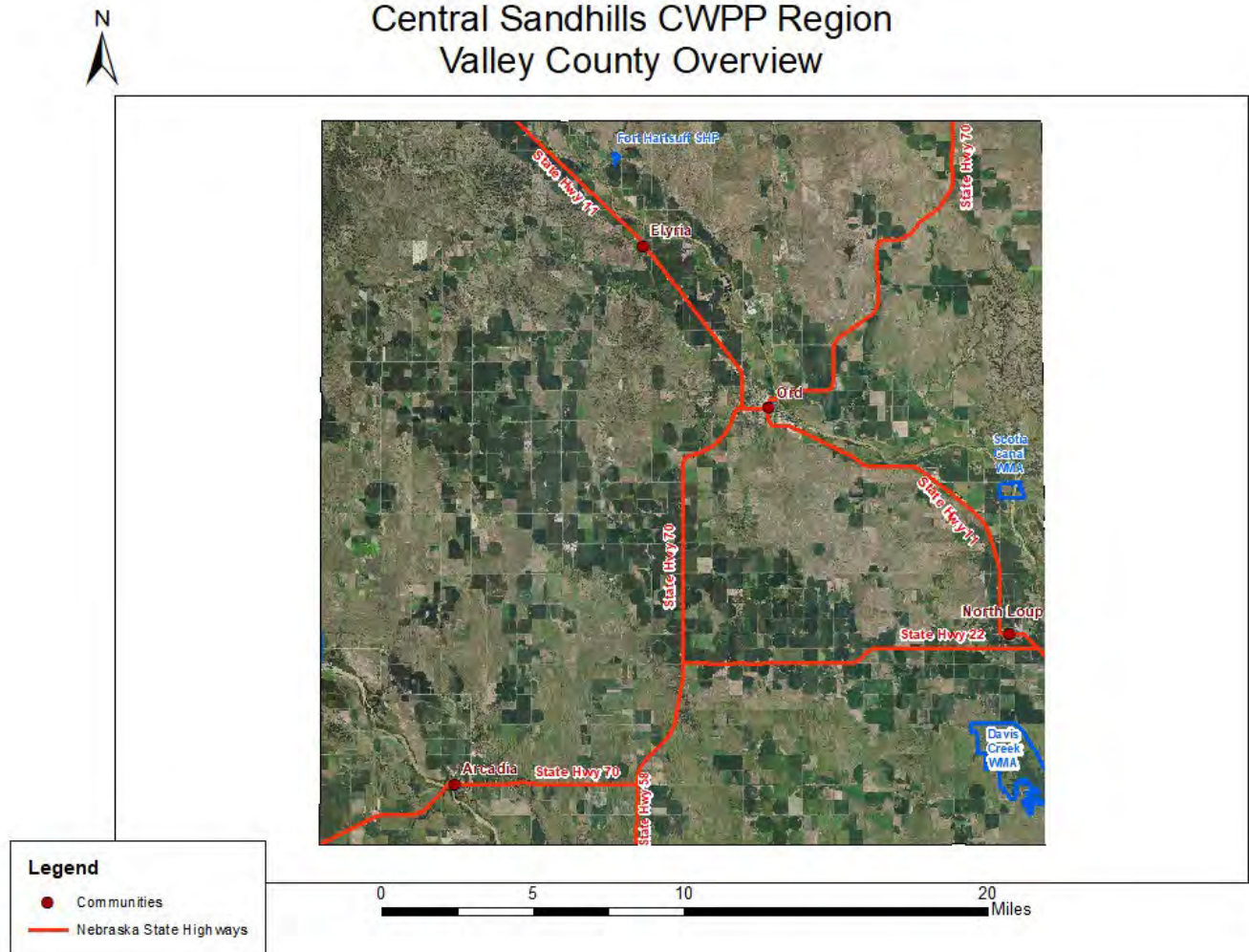
The Halsey fire chief provided specific information on bridges in the Halsey Fire District in Thomas and Blaine Counties. The County Mutual Aid maps in Appendix A shows the locations of roads and bridges. Where information was available, bridges capable of supporting a tanker are labeled with a "T."

Central Sandhills Community Wildfire Protection Plan

VALLEY COUNTY

570 sq. miles

2017 population: 4,209



Community Profile

Valley County is located in the southeast part of the CWPP area. It is bounded on the west by Custer County, on the north by Garfield County, on the east by Greeley County, and on the south by Sherman County. Incorporated communities include the county seat of Ord (pop. 2,103), and Arcadia (pop. 307), Elyria (pop. 50), and North Loup (pop. 293). Unincorporated communities include Olean and Sumter.

No federal highways traverse the county. Nebraska Highway 11 crosses the county from northwest to southeast. State Highway 70 enters Valley County from the northeast, jogging west and south, exiting at the southwest corner of Valley County into Custer County. State Highway 58 enters at the south central county line from Sherman County and ends at State Highway 70. State Highway 22 enters Valley County from the east near North Loup and ends at State Highway 70.

Fire districts all or partially within Valley County include Arcadia, Burwell, Comstock, North Loup, Ord, and Sargent.

Central Sandhills Community Wildfire Protection Plan

Besides municipal lands, public lands include 2,803 acres in school lands and three NGPC properties: Fort Hartsuff State Historical Park (19 acres), Scotia Canal WMA (229 acres), and 1,734 acres of the 2,450-acre Davis Creek WMA (the balance of the WMA is in Greeley County).

Vegetation zones include a small area of Sandhills prairie in the northeast corner of the county, with mixed grass prairie in much of the remainder of the county; riparian deciduous forest along the North Loup and Middle Loup Rivers and their tributaries; and agriculture crop fields concentrated in the central part of the county and the river valleys. In the northwest quarter and central eastern edge of the county there are scattered eastern redcedar and deciduous forests. In this area the low lying drainages are predominantly hardwoods, with smaller upper draws containing eastern redcedar. A fair amount of this area has been cut over and redcedar removed. There are some areas with small low density stands of eastern redcedar, mainly on ridges or minor drainages.

Locations of special concern include population centers adjacent to grasslands, canyons, and areas where eastern redcedar has encroached into grasslands, creating high fire hazard. The northwest corner of the county and part of the east boundary with Greeley County have rugged terrain and some access issues. The Ord fire chief identified West Ord Acres as a subdivision with only one way in and out, and there are other areas west and south of Ord with heavy fuels. Maps of these areas are included in Appendix A.

All of Valley County's population centers, dispersed ranches, and forested valleys 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

Larger communities have municipal water systems. Ranches and smaller population centers are on private wells. The North Loup River and Middle Loup River and their tributaries are generally reliable water sources. Windmills can provide water when they are operational. Ponds and stock tanks are located throughout the county. During drought conditions many of the reservoirs and ponds may not be reliable water sources. Some smaller streams have only intermittent flows and are not reliable. Davis Creek Reservoir is located in the southwest corner of the county.

There are several irrigation canals in Valley County. Parts of the Taylor-Ord Canal, the Burwell-Sumter Canal, and the Ord-North Loup Canal, all operated by the North Loup RPPID are located along the North Loup River. The Scotia Canal and the Mirdan Canal, both operated by the Twin Loups Reclamation Irrigation District, also cross Valley County as they follow the North Loup River. The Sherman Feeder Canal, operated by the Farwell Irrigation District, runs along the Middle Loup River and crosses Valley County, as do the Middle Loup PPID's Canals #3 and #4 near Arcadia.

Utilities/Phone Service

Rural electric service is provided by the Loup Valley Rural Public Power District, with headquarters in Ord. Cellular and landline telephone services are available in the county. There are gaps in cellular coverage in some areas.

Staging Areas, Roads and Bridges

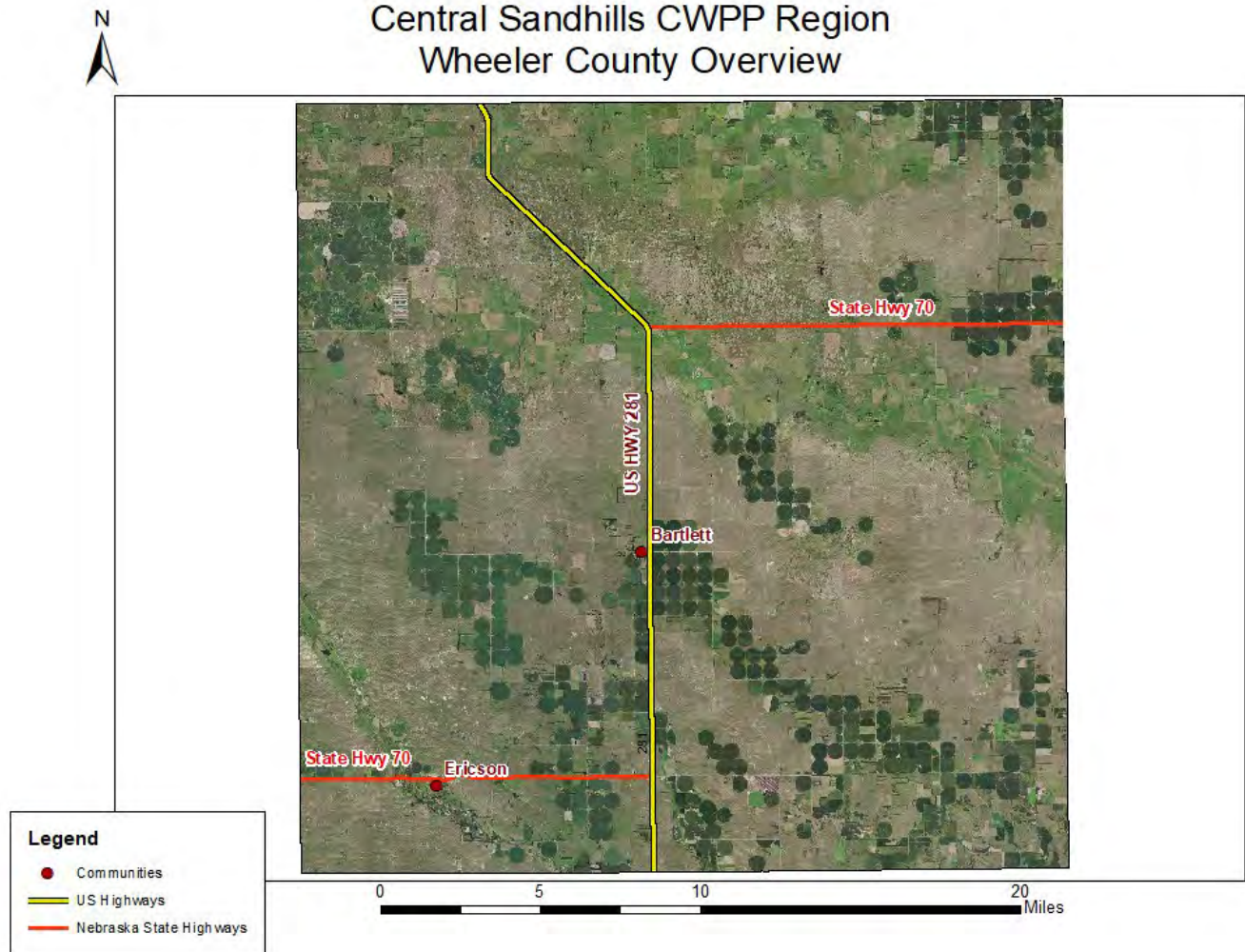
No specific information on staging areas, roads, or bridges was provided by Valley County officials.

Central Sandhills Community Wildfire Protection Plan

WHEELER COUNTY

576 sq. miles

2017 population: 818



Community Profile

Wheeler County occupies the northeast corner of the CWPP area. It is bounded on the south by Greeley County, on the west by Garfield County, on the north by Holt County, and on the east by Boone and Antelope Counties. Incorporated communities include the county seat of Bartlett (pop. 118), and Ericson (pop. 94). Cumminsville is the only unincorporated community in the county.

US Highway 281 bisects the county from north to south. State Highway 70 enters the southeast part of the county near Ericson from Garfield County, joining US Highway 281 North through Bartlett, then turns east before exiting into Antelope County. Fire departments all or partly within the county include Chambers, Ewing, Spalding, and Wheeler County VFDs.

Besides municipal lands, public lands include 17,209 acres in school lands, Pibel Lake SRA (51 acres), and one 80-acre BLM parcel in the northwest part of the county near the Garfield County line.

Central Sandhills Community Wildfire Protection Plan

Vegetation zones include Sandhills mixed grass prairie with riparian deciduous forest along the Cedar River, and agricultural fields in the northwest, northeast, and southeast. In a few locations eastern redcedar has encroached into grasslands to become a distinct and highly flammable vegetation type.

The area most at-risk from wildfire is the residential/recreational subdivision at Ericson Lake, where there are numerous homes in proximity to heavy fuels. A map of this area is included in Appendix A. The Ericson Lake Corporation is a homeowners association whose board may be interested in participating in community preparedness activities. All of Wheeler County's population centers, dispersed ranches and farms, and forested 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

Bartlett and Ericson have municipal water systems. Ranches and smaller population centers are on private wells. The Cedar River, Clearwater Creek, and Beaver Creek and their tributaries are generally reliable water sources. Ponds and stock tanks are located throughout 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.

Utilities/Phone Service

Electric service is provided to the villages and part of the rural area by Loup Valleys Rural Public Power. Power in the southeast part of the county is provided by Cornhusker/Loup River Public Power. Elkhorn Public Power serves the northeast and eastern parts of the county. A small portion of the northwest is served by Niobrara Valley Electric. Cellular and landline telephone services are available in the county. There are gaps in cellular coverage in some areas.

Staging Areas, Roads and Bridges

No specific information on staging areas, roads, or bridges was provided by Wheeler County officials.

Action Plan

The first section of this CWPP described the legislative background, goals and objectives, and the planning process. It provided an overview of the region, with details pertinent to each county. Building on this information, this section of the plan 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 Wildfire Risk Assessment Procedure

The Upper Loup, Lower Loup, and Twin Platte NRD Multijurisdictional Hazard Mitigation Plans all identify their entire planning areas as having a high (up to 100 percent) risk of wildfire. Some of these fires can be expected to exceed 100 acres in size. The plans included general wildfire risk assessments (but did 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 of the 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 the Central 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.²⁹

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.³⁰

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 4) 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 Central 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.

Central Sandhills Community Wildfire Protection Plan

Prioritization

Appendix A of this plan contains “Areas of Concern” maps. These show 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.³¹

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 coniferous plantations of the Bessey Ranger District and the woodlands along the North Loup, Middle Loup, Wood, Calamus, and Dismal 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 of 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 many 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, these actions need to be maintained over time.³¹

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 on and 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.

Central Sandhills Community Wildfire Protection Plan

Locally-Identified Mitigation Practices

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

In the Lower Loup NRD Hazard Mitigation Plan, Valley County and the Lower Loup NRD selected “reduce wildfire damage” as an important goal. Greeley County identified completion of a CWPP and implementation of a Wildfire Hazard and Mitigation System as desirable actions. The Farwell and Sargent Irrigation Districts named Wildfire Education as an important mitigation action.

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

Although funding limitations affect any jurisdiction’s ability to implement these three 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 Multijurisdictional 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 possibility of a small fire in difficult terrain growing into a large wildfire escalates rapidly.

Central Sandhills Community Wildfire Protection Plan

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.

Non-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.

Other: Counties can use technology to provide early detection systems and real-time fire weather information by retrofitting units and establishing new ones to complete the existing network.

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, FFP/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 such regulation may not be popular with some local residents, counties may 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,

Central Sandhills Community Wildfire Protection Plan

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 activities 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 a grazing system 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 healthy 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 in cedar-encroached riparian bottoms, in eastern redcedar-dominated forestland, and in the planted coniferous forests of the USFS Bessey Ranger District

Central Sandhills Community Wildfire Protection Plan

near Halsey. 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 both pine and deciduous forests. Density in pure eastern redcedar forests can be reduced to levels that provide increased protection from fire.

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 a source 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 wooded settings also apply in non-forested settings.

Central Sandhills Community Wildfire Protection Plan

Five-Year Action Plan for the Central 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)	Indiv. or neighborhood analysis for rural areas	Contractors, FDs.; if funding/staff is available	Ongoing	Checklist/Report	Can do this during fuel reduction projects or other site visits
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, local officials (pub. prop.)	Ongoing	# Acres or Properties Treated	Agency cost share programs available
	Ignition-Resistant buildings	Homeowners, planning officials	Ongoing	# New bldgs to code # bldgs. retrofitted	Retrofits are costly; opp. for new construction
	Jurisdictional Cooperation	Local, state, federal officials	Ongoing	# MA agreements, MOUs, etc.	Explore MOUs with non-trad. partners, NGOs, etc.
Incr. Communications Effectiveness	Review Local Comms. Plans	Local and state officials	Annually	Document changes/updates	n/a
Increase Data Availability	Map Co. roads/bridges w/ weight or width limits; etc.	Local officials, contractors?	2019-2024	Completed maps by jurisdiction	Costly; possibly piggy back data collection with other tasks
	Realtime fire weather information	State, Local	Ongoing	# of units	Retrofit units and establish new to complete network
	Provide early detection systems using technology	State, Local	Ongoing	# of units	May retrofit some units and establish new units
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	2019-2020	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	Media 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

Table 4: Five-Year Action Plan for the Central Sandhills CWPP 2019-2024

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.

Central Sandhills Community Wildfire Protection Plan

Monitoring and Evaluation

The objective of fuels mitigation treatments in wooded 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

The continued involvement of the public 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
6. Number of 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

Central Sandhills Community Wildfire Protection Plan

rules. The CWPP is a coordinating document for activities related to education and outreach, information development, fire protection, and fuels treatment.

Endnotes

- 1 Nebraska Emergency Management Agency. Nebraska State and Local Plans. <https://nema.nebraska.gov/preparedness/nebraska-state-local-plans>. Accessed 10/4/2018.
- 2 Nebraska Emergency Management Agency. State of Nebraska Hazard Mitigation Plan. <https://nema.nebraska.gov/sites/nema.nebraska.gov/files/doc/hazmitplan.pdf>. Accessed 10/4/2018.
- 3 O'Hanlon, Kevin. Prairie fire kills one, evacuates Nebraska Town. Yankton Daily Press and Dakotan. March 18, 1999. https://www.yankton.net/news/article_79ebb606-71cb-581f-bc51-b8ae7ad58da9.html. Accessed 10/1/2018.
- 4 Aber, James S., 2015. Nebraska Sand Hills Physiographic Region. <http://academic.emporia.edu/aberjame/student/allen1/Webpage.html>. Accessed on August 21, 2018.
- 5 Temperature and precipitation data: <https://hprcc.unl.edu/datasets.php?set=CountyData>. Accessed on October 1, 2018. RH data for selected stations 1982-2018 provided by the Nebraska State Climate office, 1/30/2019.
- 6 Wind data: Iowa Environmental Mesonet. Station data and metadata for selected Nebraska stations. 1970-2018. https://mesonet.agron.iastate.edu/sites/windrose.phtml?network=NE_ASOS&station=OGA. Accessed November 7, 2018. Iowa State University.
- 7 USDI US Geological Survey. 2011. NLCD 2011 Land Cover. <https://www.mrlc.gov/data/nlcd-2011-land-cover-conus>
- 8 USDA Forest Service. Amended 2009. Updated Land and Resource Management Plan for the Nebraska National Forests and Grasslands. https://www.fs.usda.gov/detail/nebraska/landmanagement/planning/?cid=fsm9_028050. Accessed 8/22/2018.
- 9 USDA Forest Service. 2006. Bessey II Fuels Reduction Project. Environmental Assessment. Bessey Ranger District, Nebraska National Forest, Thomas County, Nebraska, 35p. Accessed 8/22/2018.
- 10 Estimate provided by Cort Dewing, Nebraska Board of Educational Lands and Funds, 5/11/2018.
- 11 Estimate provided by Julie Bain, District Ranger, 8/23/2018
- 12 Visitation numbers provided by the Nebraska Game and Parks Commission, 10/29/2018
- 13 Estimate provided by Lower Loup NRD, 10/23/2018
- 14 Specific visitor numbers not available from the Nebraska Game and Parks Commission
- 15 Estimate provided by June Stover at Ericson Lake Corporation, 8/23/2018
- 16 USDI Bureau of Reclamation. [Reclamation/Projects & Facilities/Projects](https://www.usbr.gov/projects/index.php?id=367)/North Loup Division. <https://www.usbr.gov/projects/index.php?id=367>. Accessed 8/23/2018.

Central Sandhills Community Wildfire Protection Plan

- 17 Lower Loup Natural Resources District Master Plan 2012-2022.
<https://www.llnrd.org/assets/site/documents/MasterPlan12to22.pdf>. Accessed 8/27/2018.
- 18 Kolar, Lana J., 2018. History of the North Loup River Public Power and Irrigation District. Irrigation district research. Ord, Nebraska, 2 p.
- 19 Information provided by provided by General Manager Mike Wells, Scotia, Nebraska. 8/24/2018.
- 20 Farwell Irrigation District. <https://www.farwellid.org/>. Accessed 8/27/2018.
- 21 Information provided by General Manager Matt Lukasiewicz, Scotia, Nebraska. 8/27/2018.
- 22 Information provided by General Manager Gerry Sheets, Arcadia, Nebraska. 9/4/2018.
- 23 Central Platte Natural Resources District. Fire as a Maintenance Tool. <http://cpnrd.org/prescribed-fire-program/> Accessed 10/3/2018.
- 24 Fire regimes of the conterminous United States. US Forest Service Fire regime information on 256 vegetation communities. This information is taken from the [LANDFIRE Rapid Assessment Vegetation Models \[3\]](#), which were developed by local experts using available literature, local data, and/or expert opinion. This table summarizes fire regime characteristics for each plant community listed. USDA Forest Service Fire Effects Information System, https://www.fs.fed.us/database/feis/fire_regime_table/fire_regime_table.html and <https://www.feis-crs.org/feis/> accessed 10/2/2018.
- 25 Wolfe, Carl W. 1972. Effects of Fire on a Sand Hills Grassland Environment. Research Division, Nebraska Game and Parks Commission, Lincoln, NE. http://talltimbers.org/wp-content/uploads/2014/03/Wolfe1972_op.pdf . Accessed 10/4/2018.
- 26 Guyette, R.P., M.C. Stambaugh, and J.M. Marschall. 2011. A quantitative analysis of fire history at national parks in the Great Plains. A report prepared for the Great Plains Cooperative Ecosystem Studies Unit and National Park Service. 78 pp.
- 27 Nebraska Forest Service. Fire reports database. Accessed 10/3/18.
- 28 Associated Press. Stapleton wildfire under control; new fire erupts. Lincoln Journal Star. October 7, 2011. https://journalstar.com/news/state-and-regional/nebraska/stapleton-wildfire-under-control-new-fire-erupts/article_29068ecd-7dff-55fc-bfe4-ba235de766bb.html. Accessed 10/31/2018.
- 29 Wildland Urban Interface Wildfire Mitigation Desk Reference Guide. (August, 2014). Retrieved from <http://www.nwcg.gov/pms/pubs/pms051.pdf> December 3, 2018.
- 30 Baker County Community Wildfire Protection Plan. (Oregon. February 15, 2006).
- 31 International Fire Chiefs Association. *Community Wildfire Protection Plan: A Fire Service Leader's Guide*. Definitions retrieved from <https://www.iafc.org/topics-and-tools/resources/resource/community-wildfire-protection-plan-leaders-guide>

Central Sandhills Community Wildfire Protection Plan

List of Appendices

Appendix A: Maps..... 47

Appendix B: Nebraska Natural Legacy Project: Biologically Unique Landscapes (map/link) 87

Appendix C: Priority Landscapes 88

Appendix D: Wind Rosettes 91

Appendix E: Emergency Multi-Jurisdictional Hazard Mitigation Plans (links) 93

Appendix F: Statewide List of Mutual Aid Associations 94

Appendix G: Fire Department Equipment and Contact Information 100

Appendix H: Fire Department Survey and Distribution List 115

Appendix I: Public Engagement..... 122

Appendix J: WUI Mitigation Programs and Structural Ignitability Reduction Practices..... 129

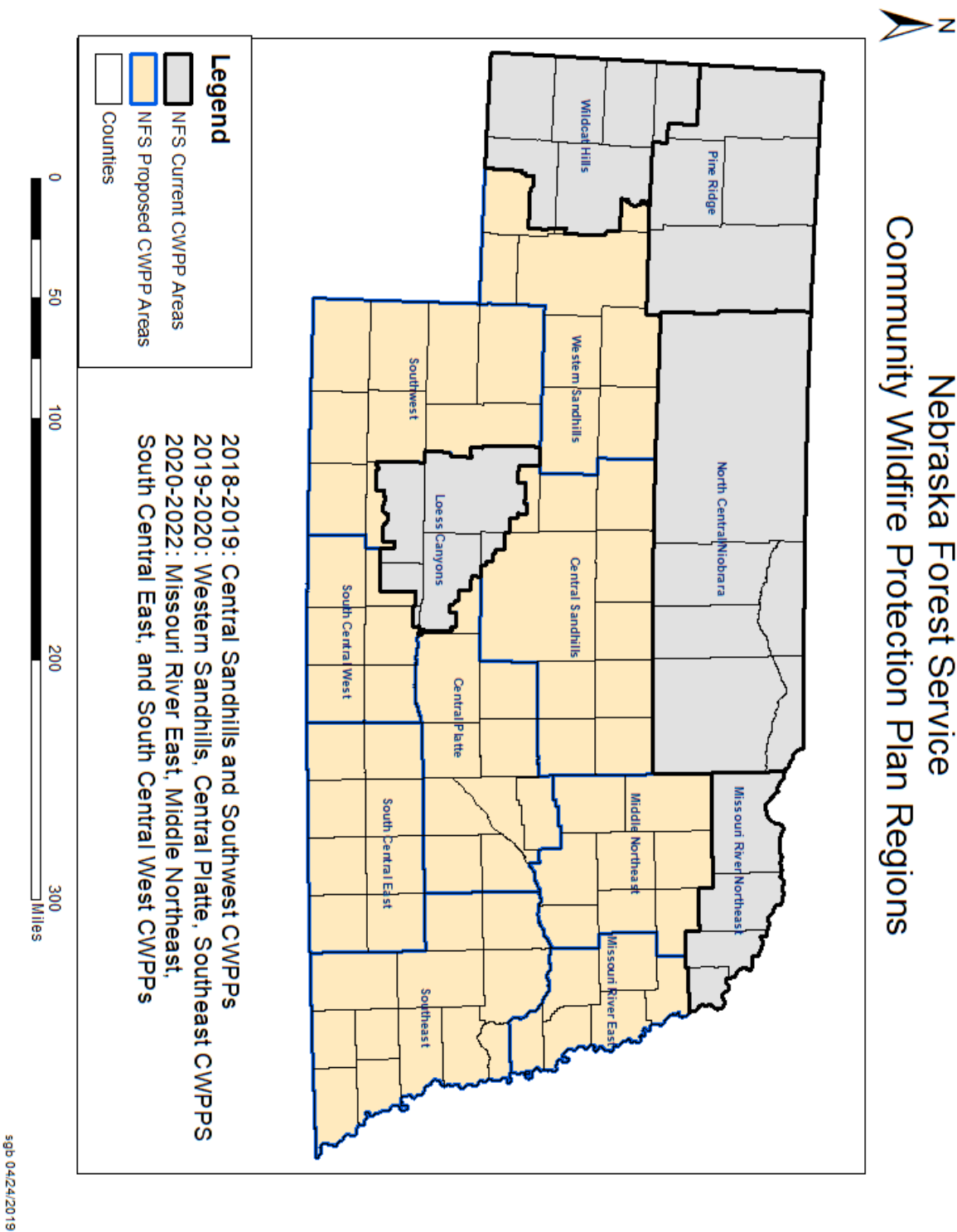
Appendix K: Yellow Book: Emergency Assistance for Wildfire Control (link)..... 134

Appendix A

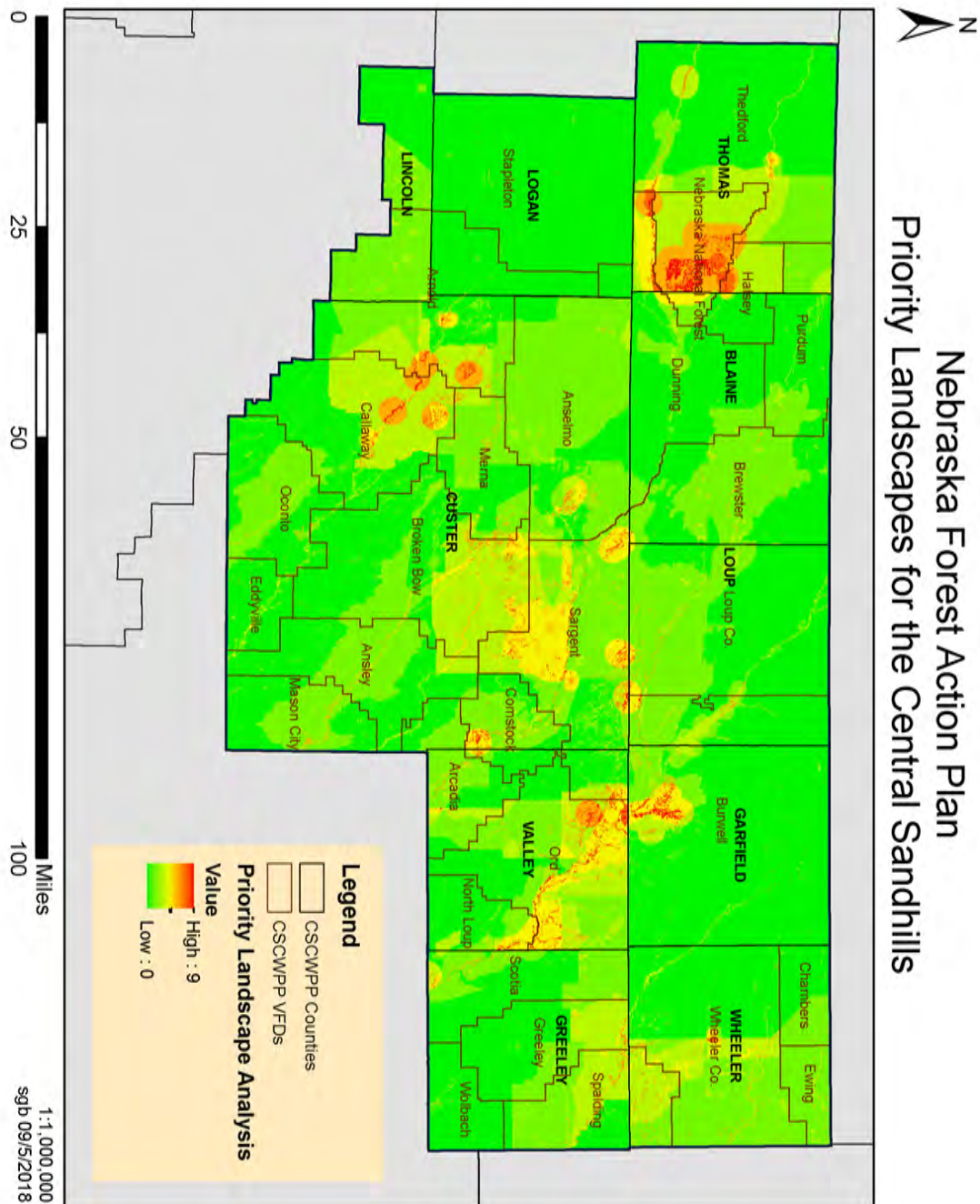
Maps

1. Nebraska CWPP Regions
2. Priority Landscapes
3. Land Cover
4. Fire History
5. Central Sandhills CWPP Local Emergency Management Areas
Nebraska Local Mitigation Planning Areas
6. Central Sandhills CWPP Areas of Special Concern
 - a. Overview
 - b. Calamus Reservoir Area
 - c. Burwell Northeast – Garfield Co.
 - d. Arnold Fire District – Custer Co.
 - e. Arnold Fire District – Lincoln Co.
 - f. Arnold Fire District – Logan Co.
 - g. Callaway-Broken Bow – Custer Co.
 - h. Mason City – Custer Co.
 - i. Comstock-Arcadia – Custer & Valley Counties
 - j. Ord – Valley Co.
 - k. Loup-Garfield-Custer-Valley Counties
 - l. Valley-Greeley Counties
 - m. Thomas County
 - n. Ericson – Wheeler Co.
 - o. Lake Ericson Streets – Wheeler Co.
 - p. Scotia-Cotesfield – Greeley Co.
 - q. Spalding North – Greeley Co.
7. County Mutual Aid Maps
 - a. Blaine
 - b. Custer
 - c. Garfield
 - d. Greeley
 - e. Lincoln (partial)
 - f. Logan
 - g. Loup
 - h. Thomas
 - i. Valley
 - j. Wheeler

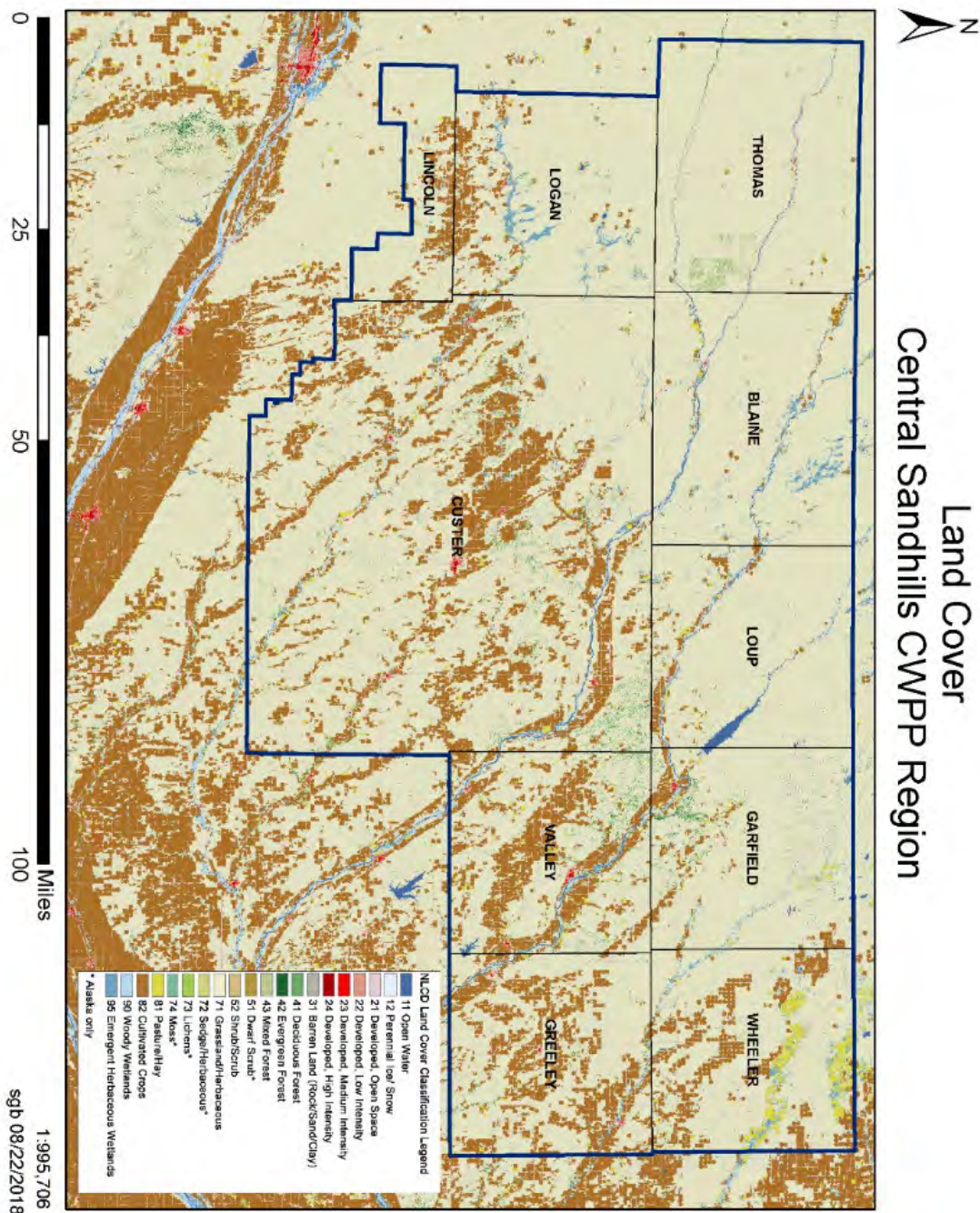
Map 1: Nebraska Community Wildfire Protection Plan Regions



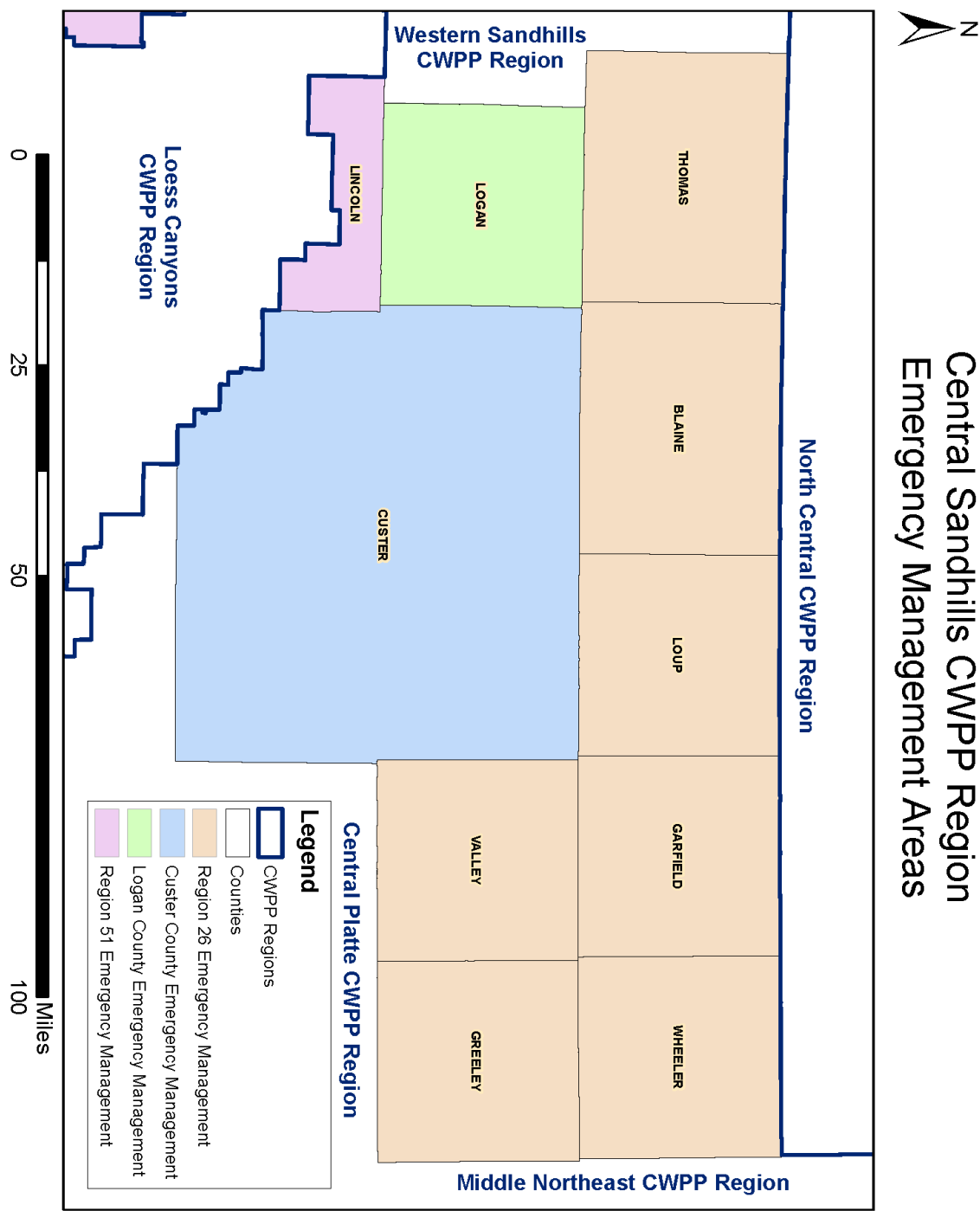
Map 2: Central Sandhills Priority Landscapes



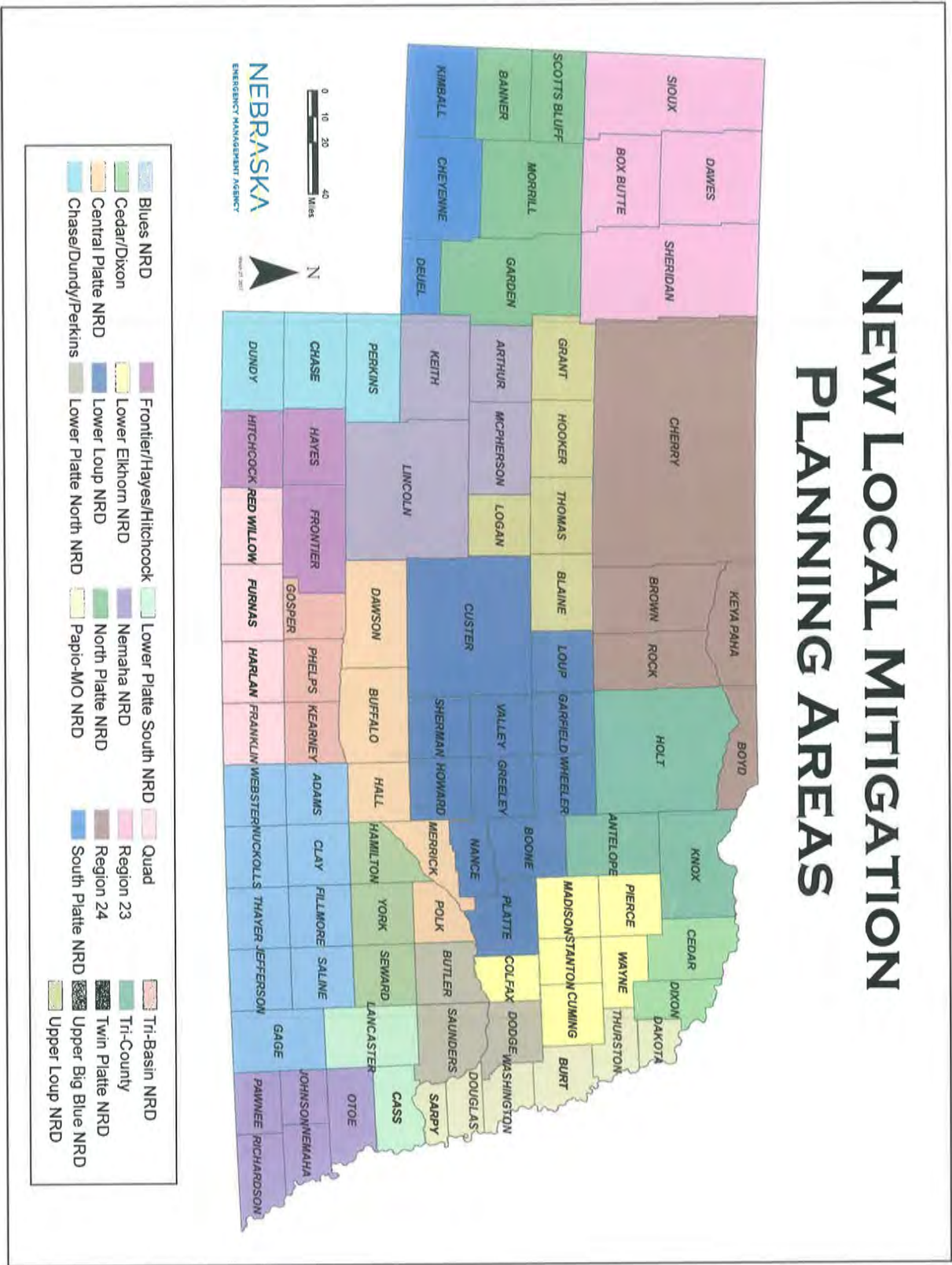
Map 3: Central Sandhills Land Cover



Map 5: Local Emergency Management Areas

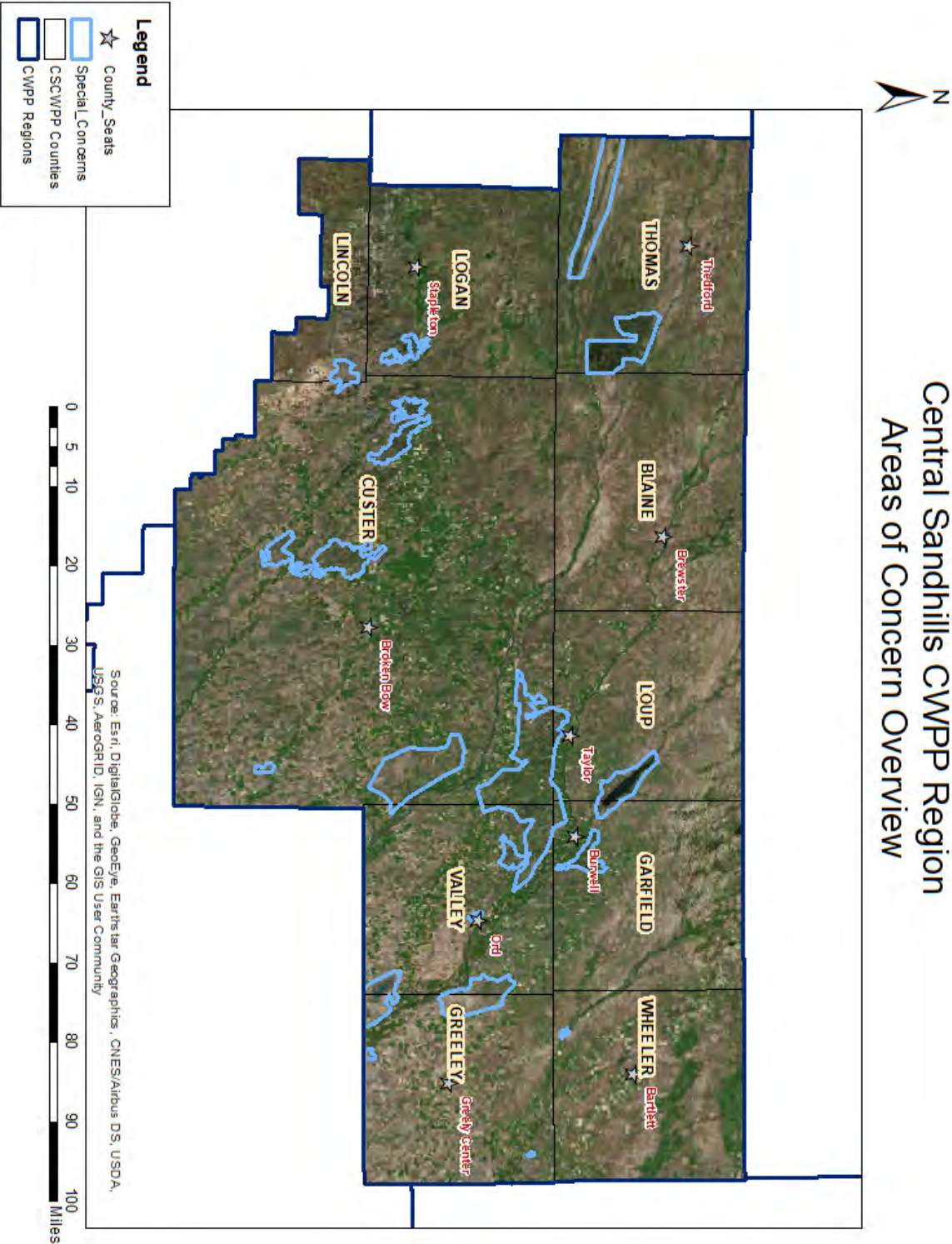


Map 6: Nebraska Local Mitigation Planning Areas



Maps 7a-7q: Central Sandhills Areas of Concern

Map 7a: Overview



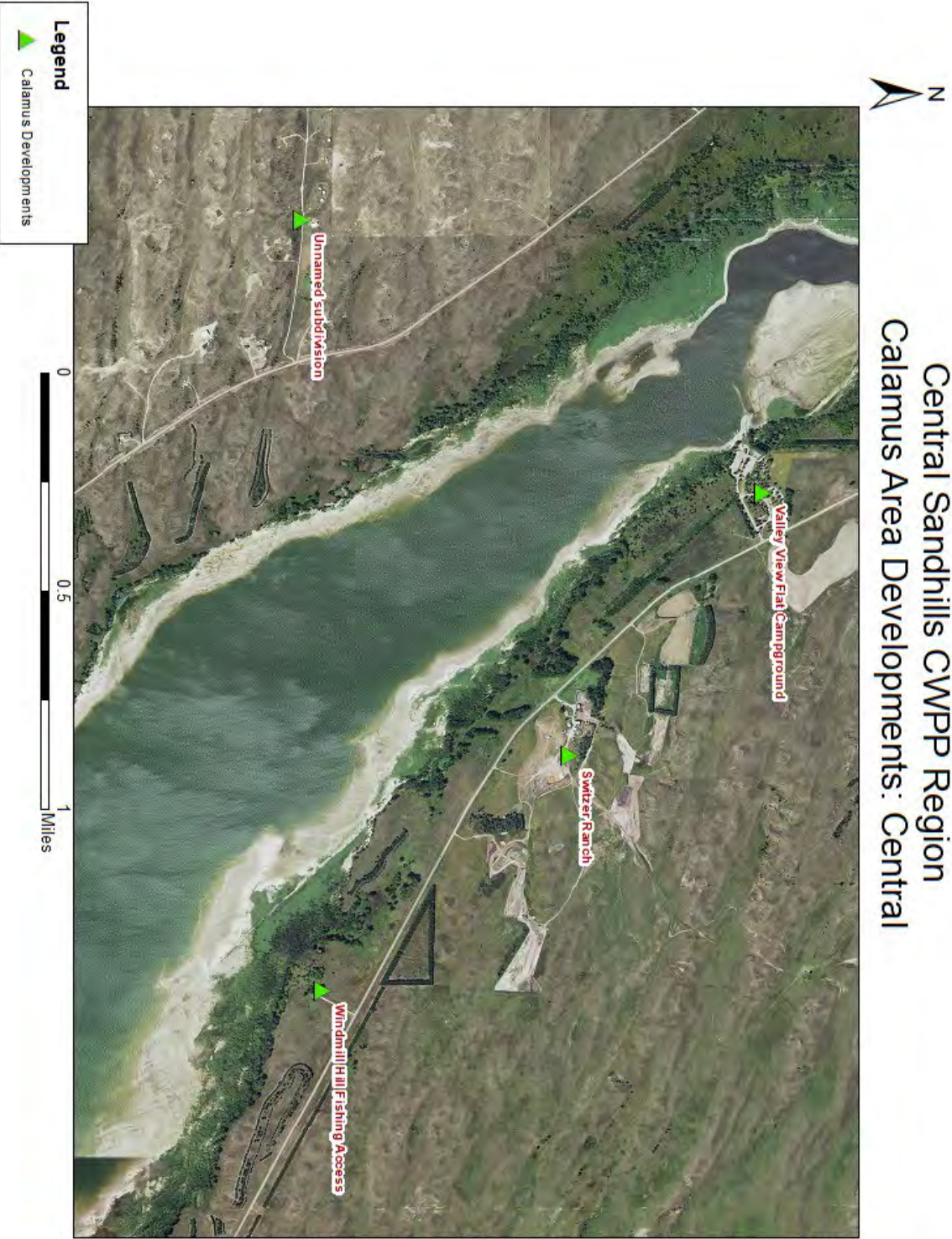
Central Sandhills Comm



Map 7b(i): Calamus North



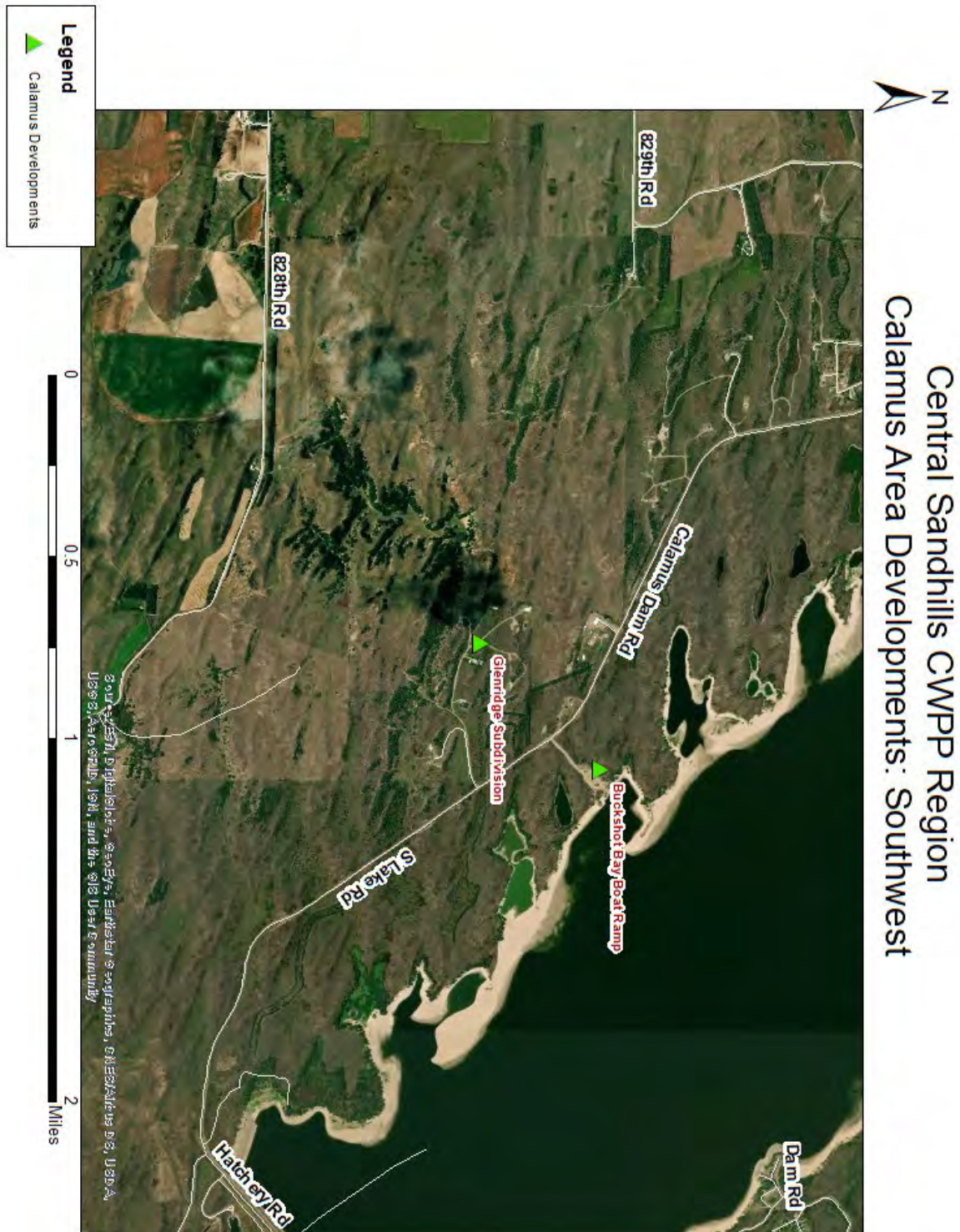
Map 7b(iii): Calamus Central



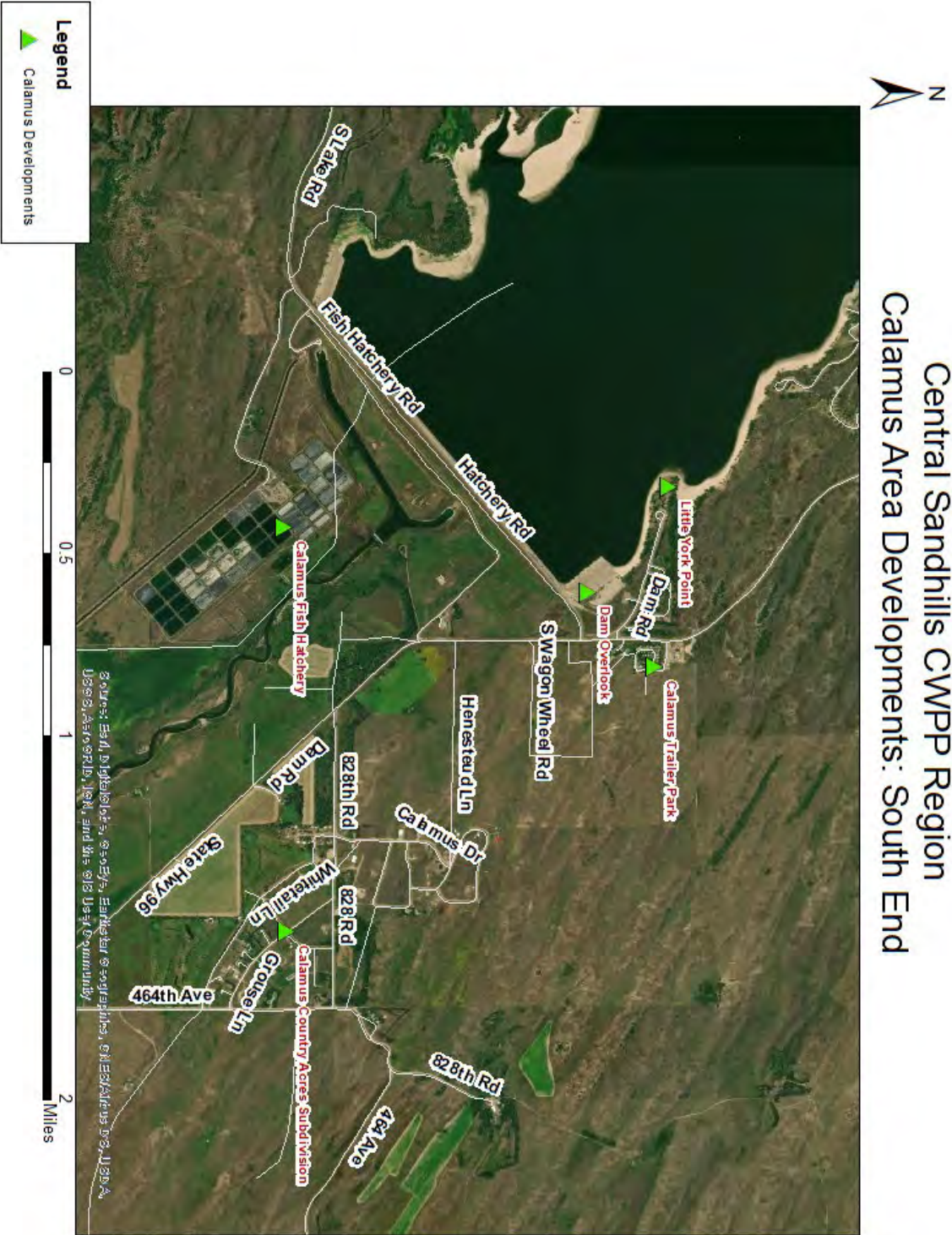
Map 7b(iv): Calamus East Central



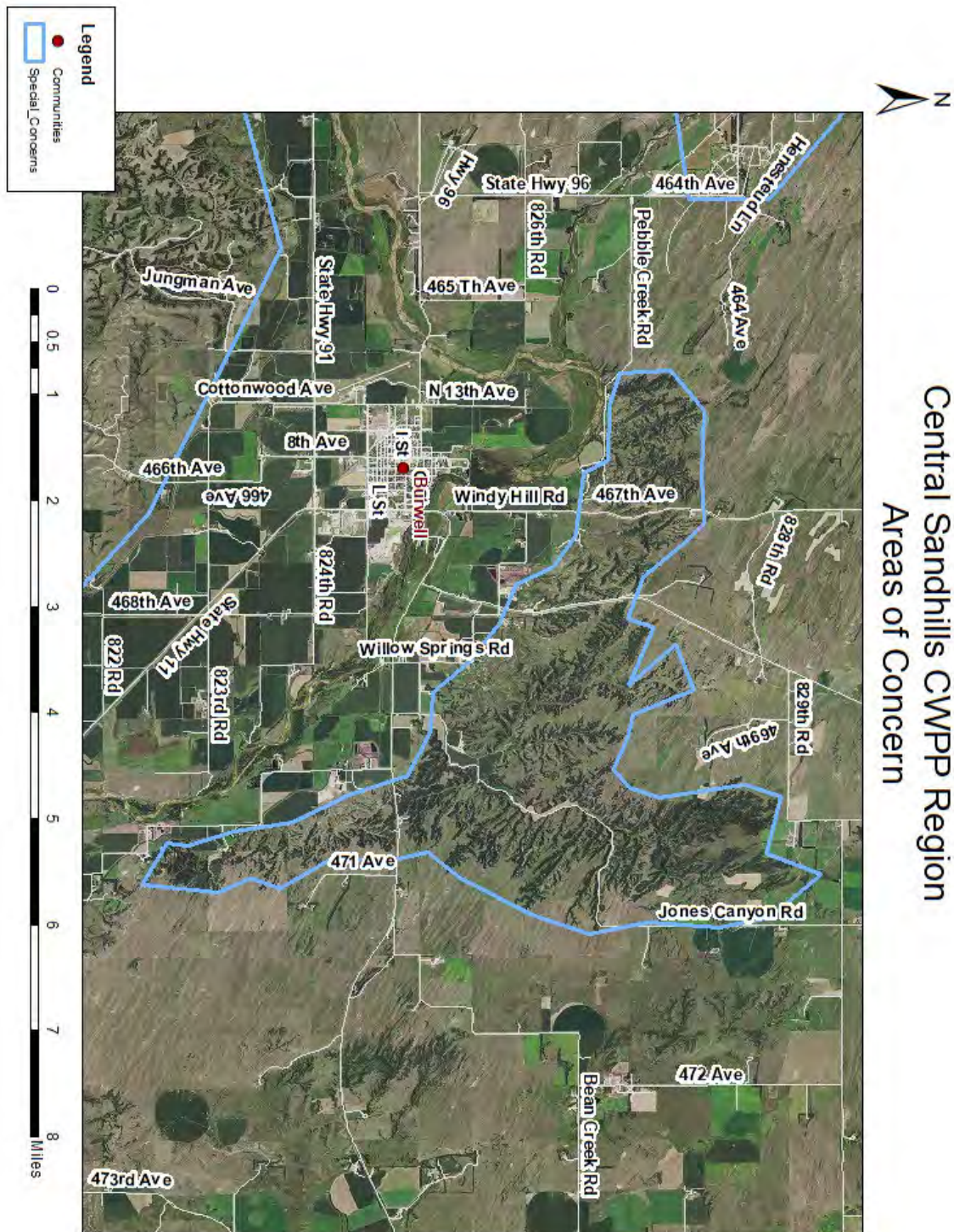
Map 7b(v): Calamus Southwest



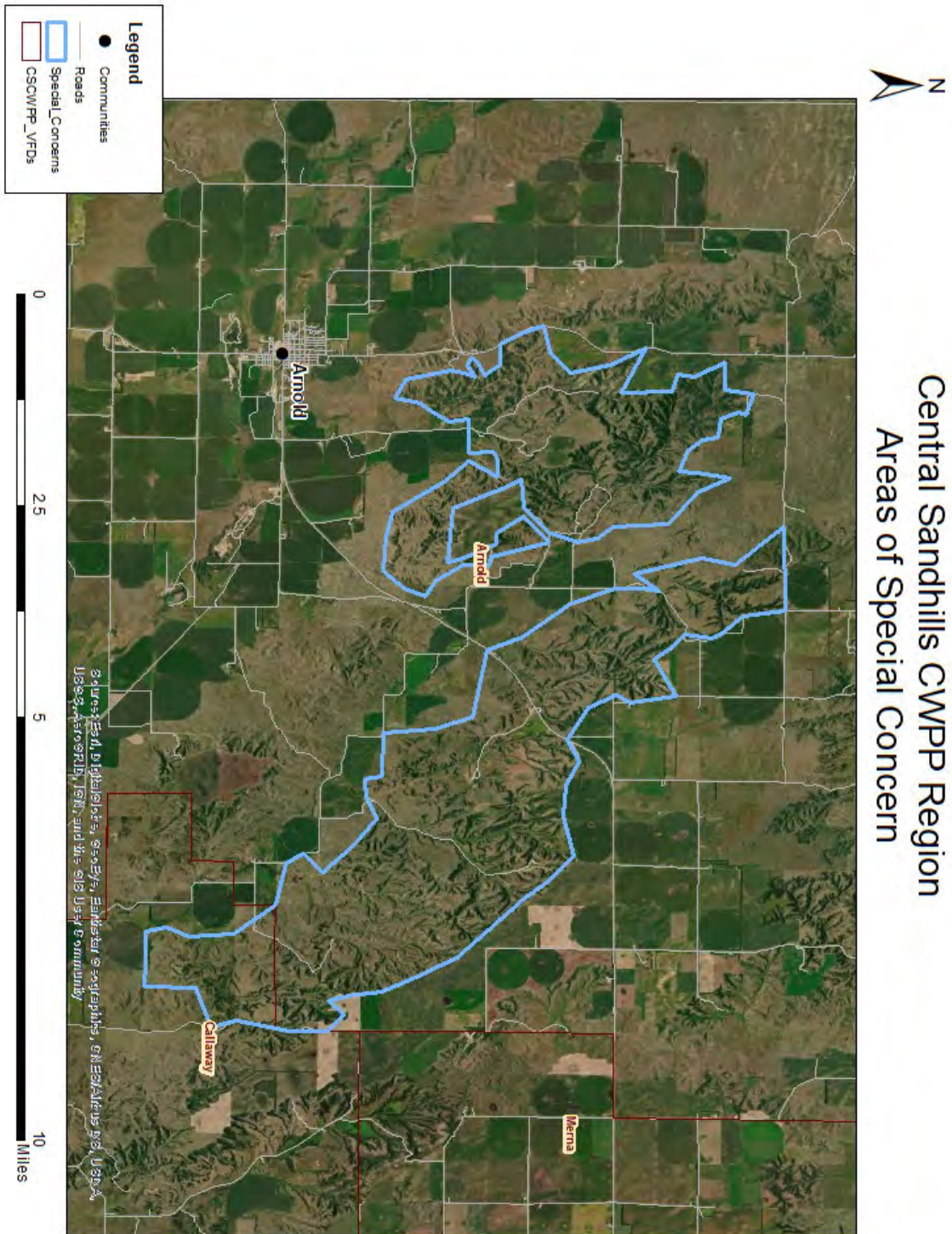
Map 7b(vi): Calamus South



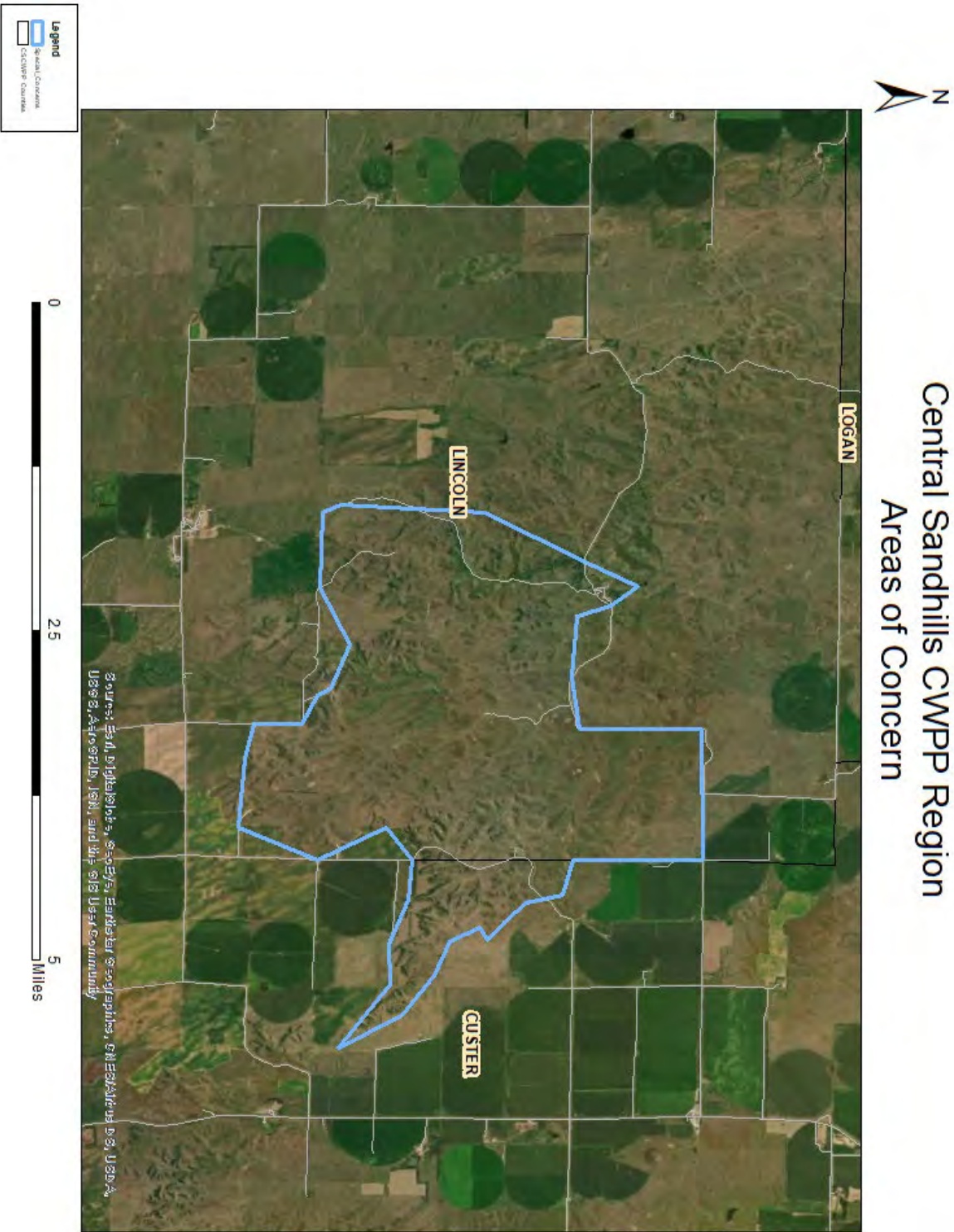
Map 7c: Burwell Northeast (Garfield County)



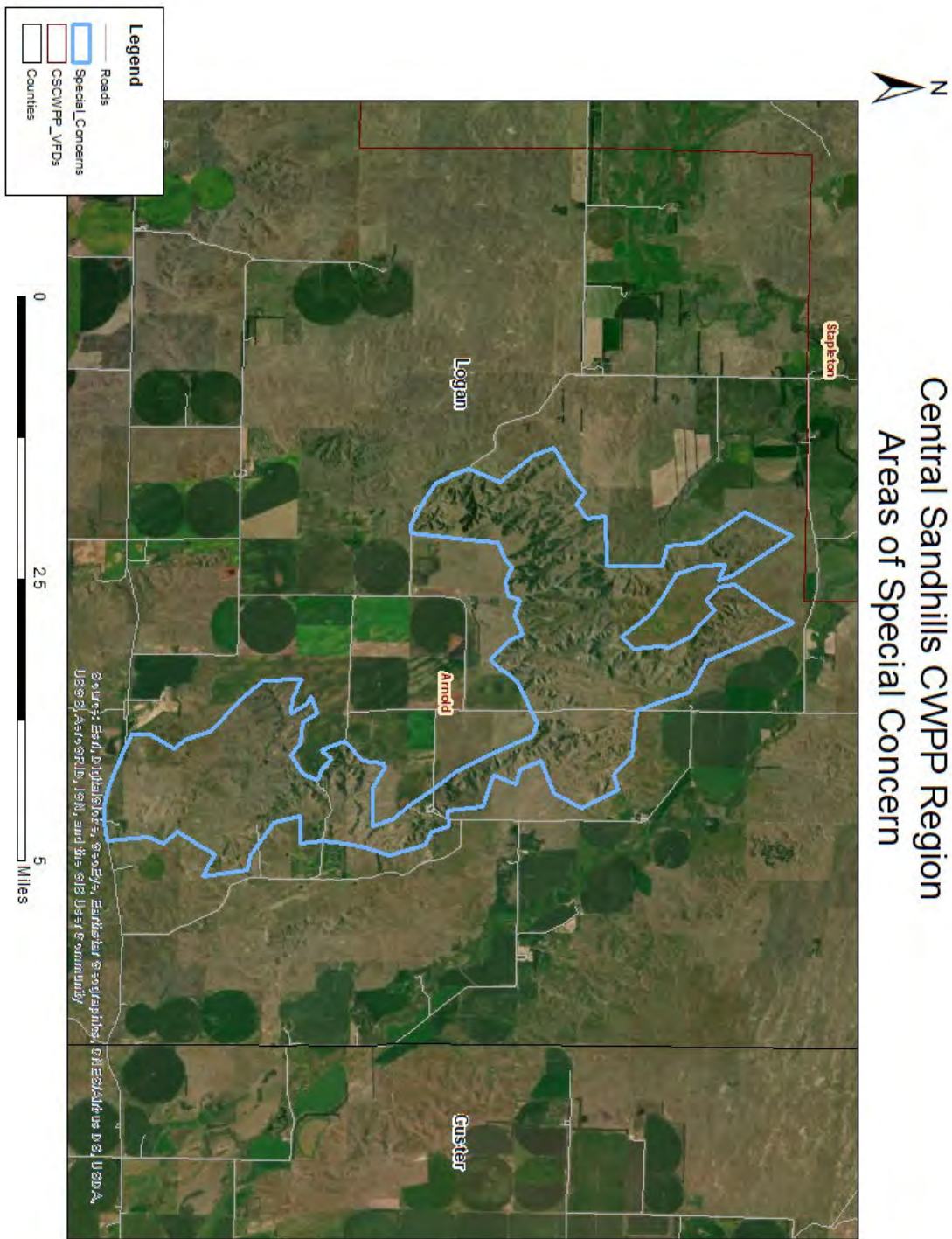
Map 7d: Arnold Fire District (Custer County)



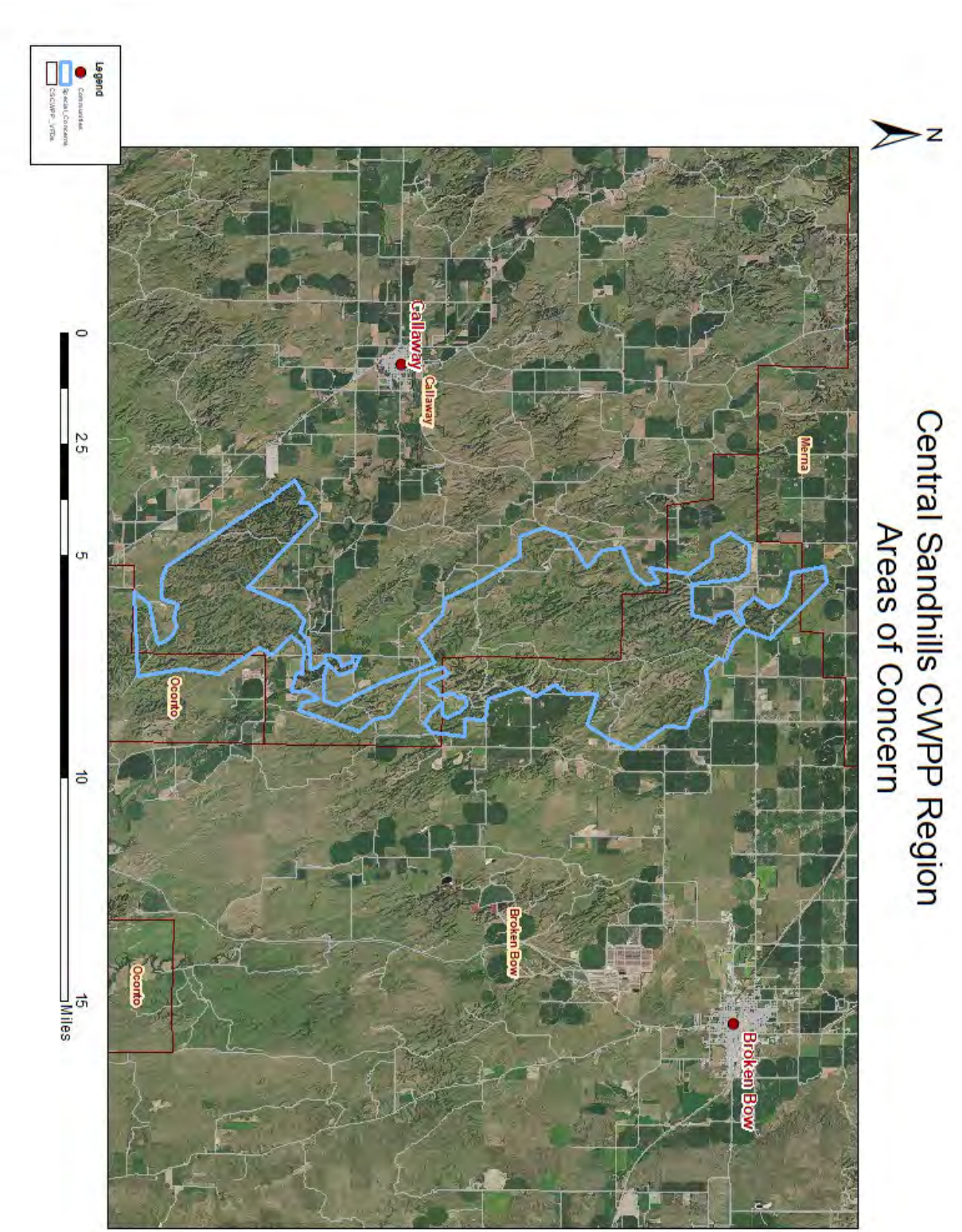
Map 7e: Arnold Fire District (Lincoln County)



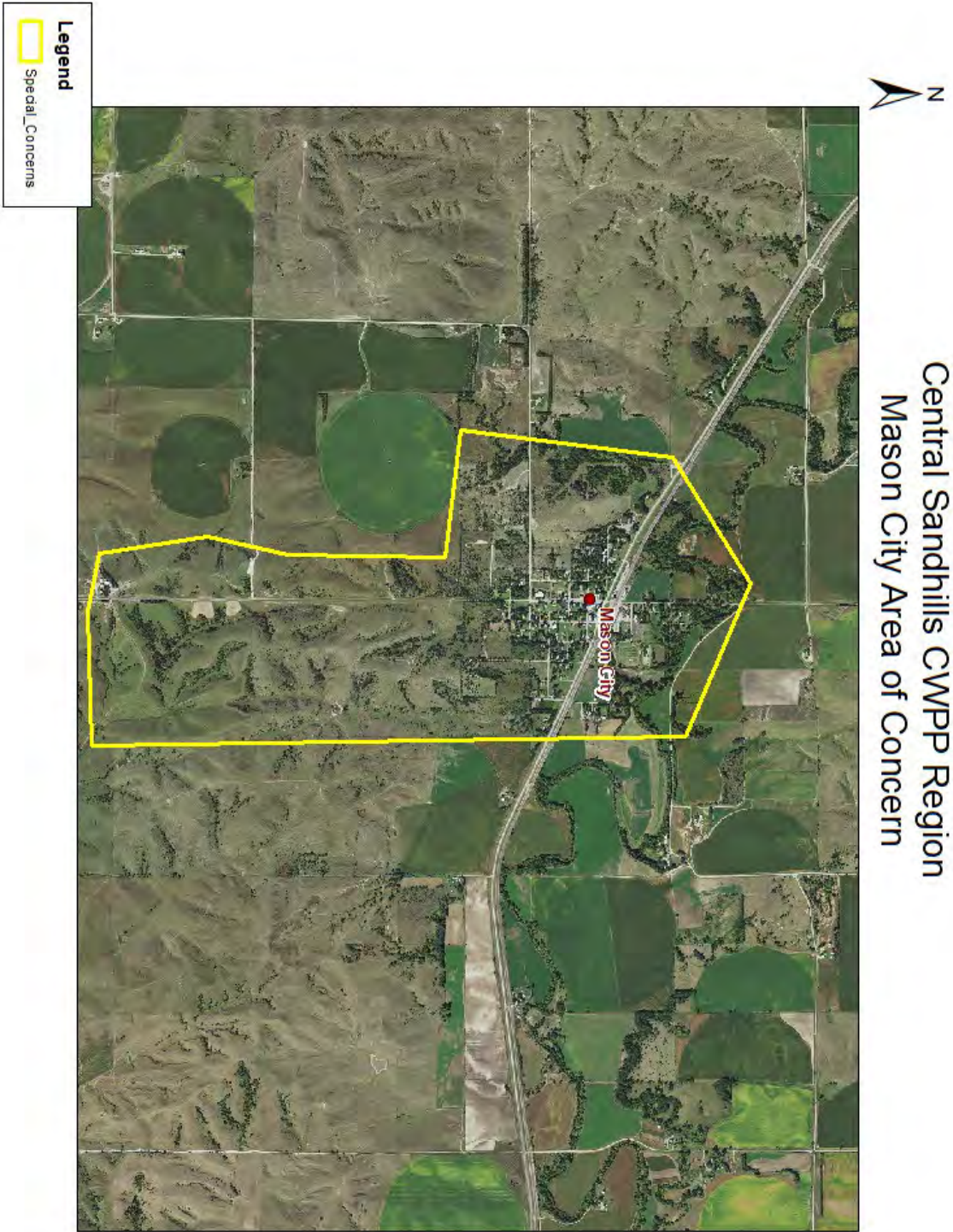
Map 7f: Arnold Fire District (Logan County)



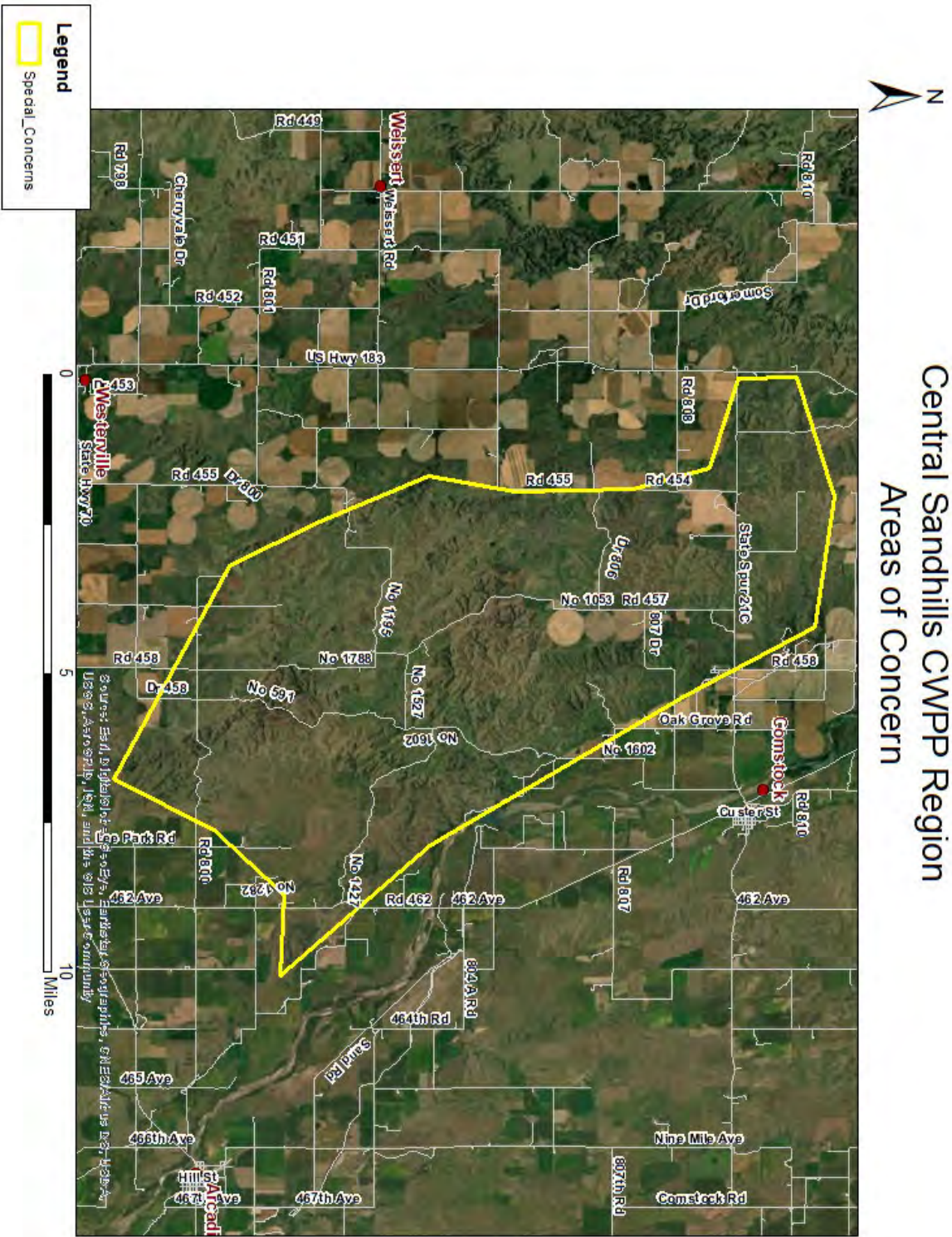
Map 7g: Callaway-Broken Bow (Custer County)



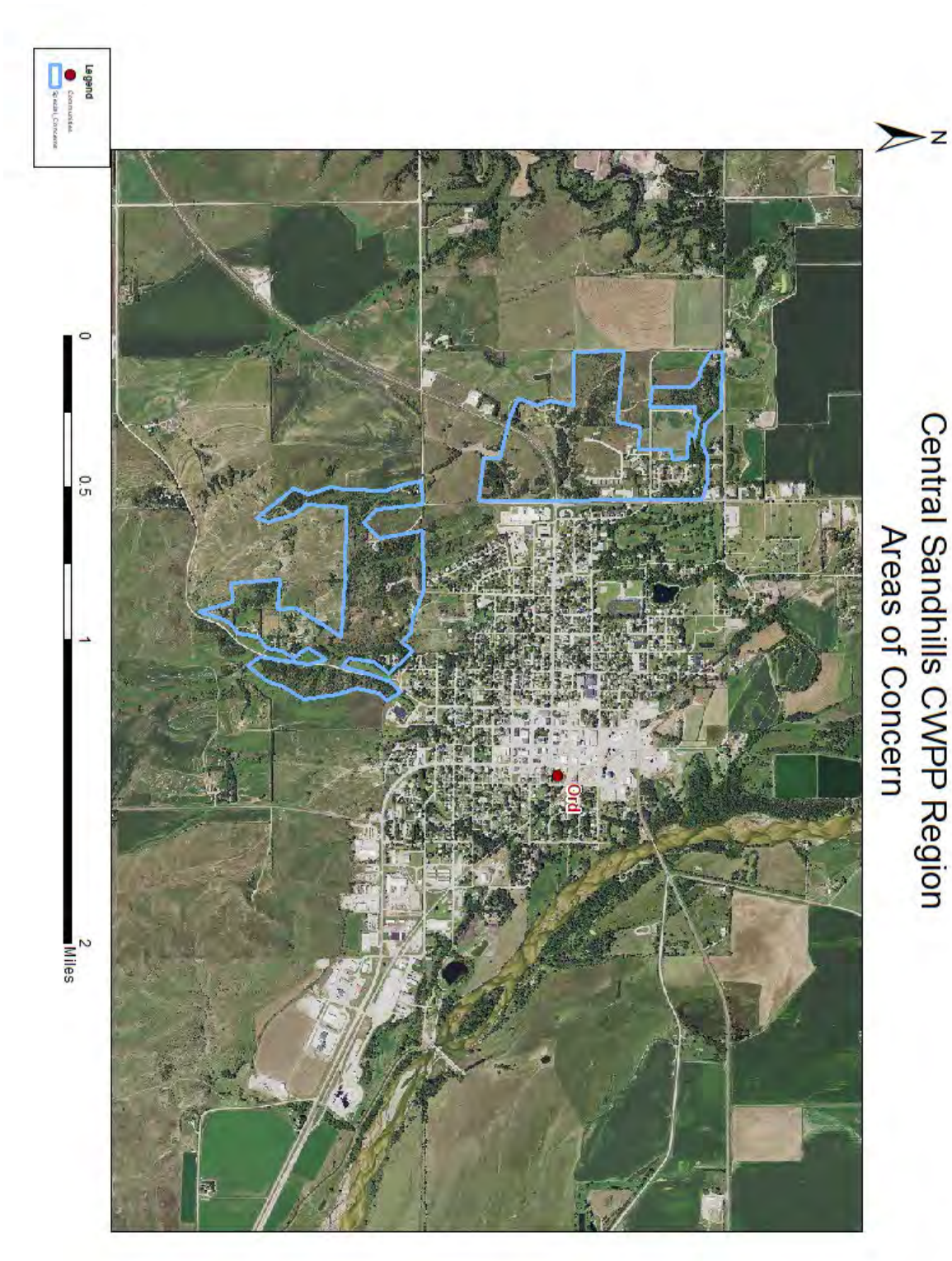
Map 7h: Mason City (Custer County)



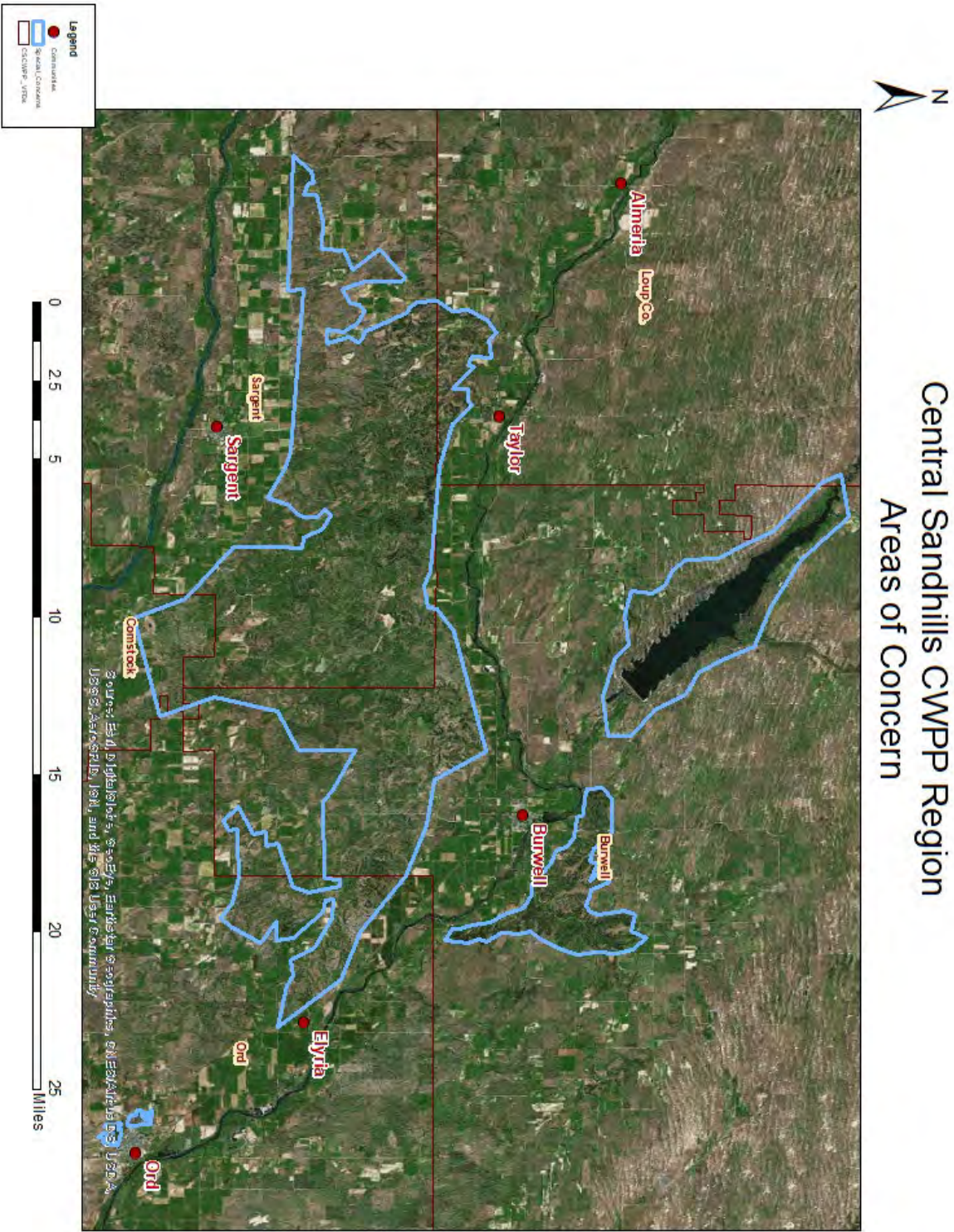
Map 7i: Comstock-Arcadia (Custer County)



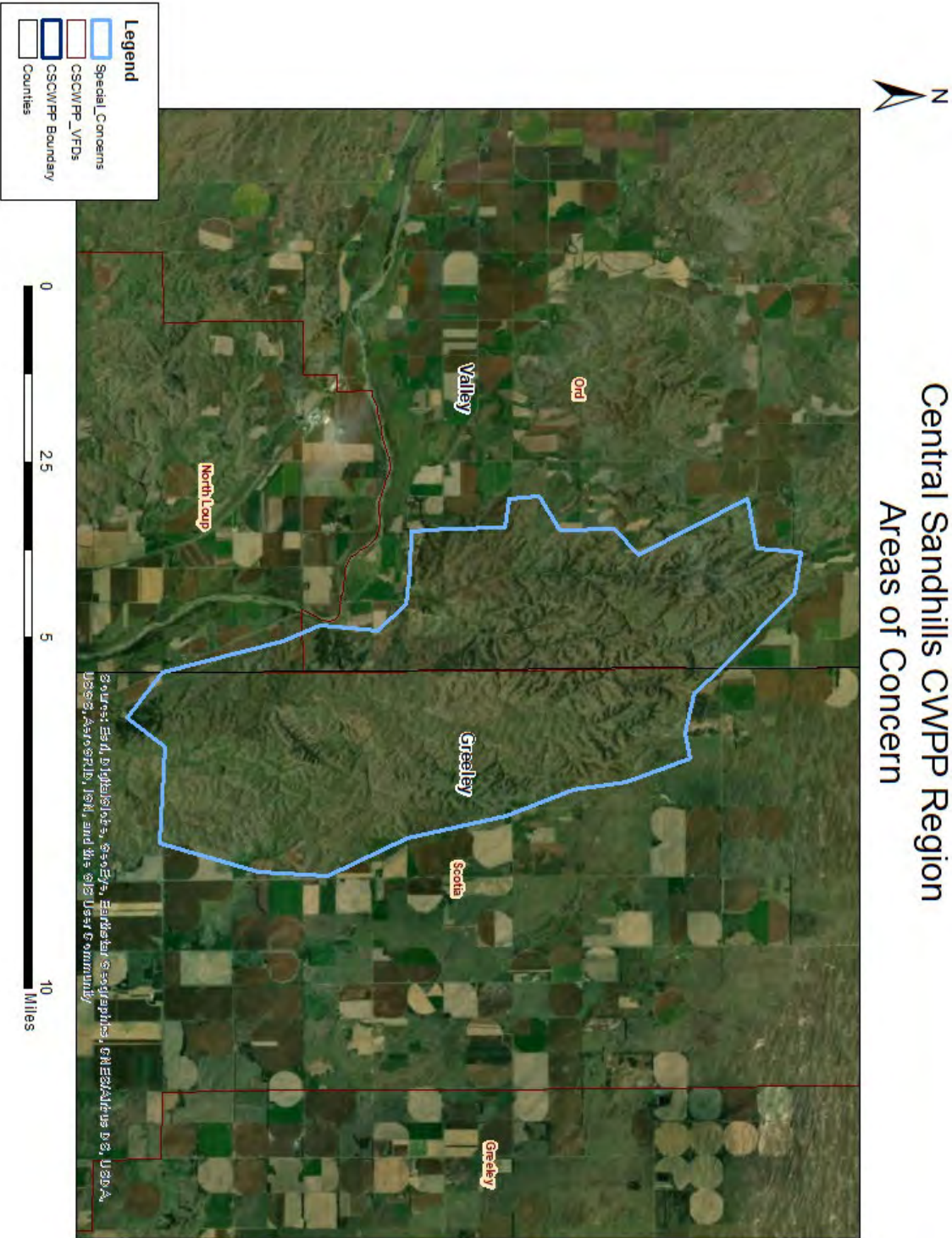
Map 7j: Ord (Valley County)



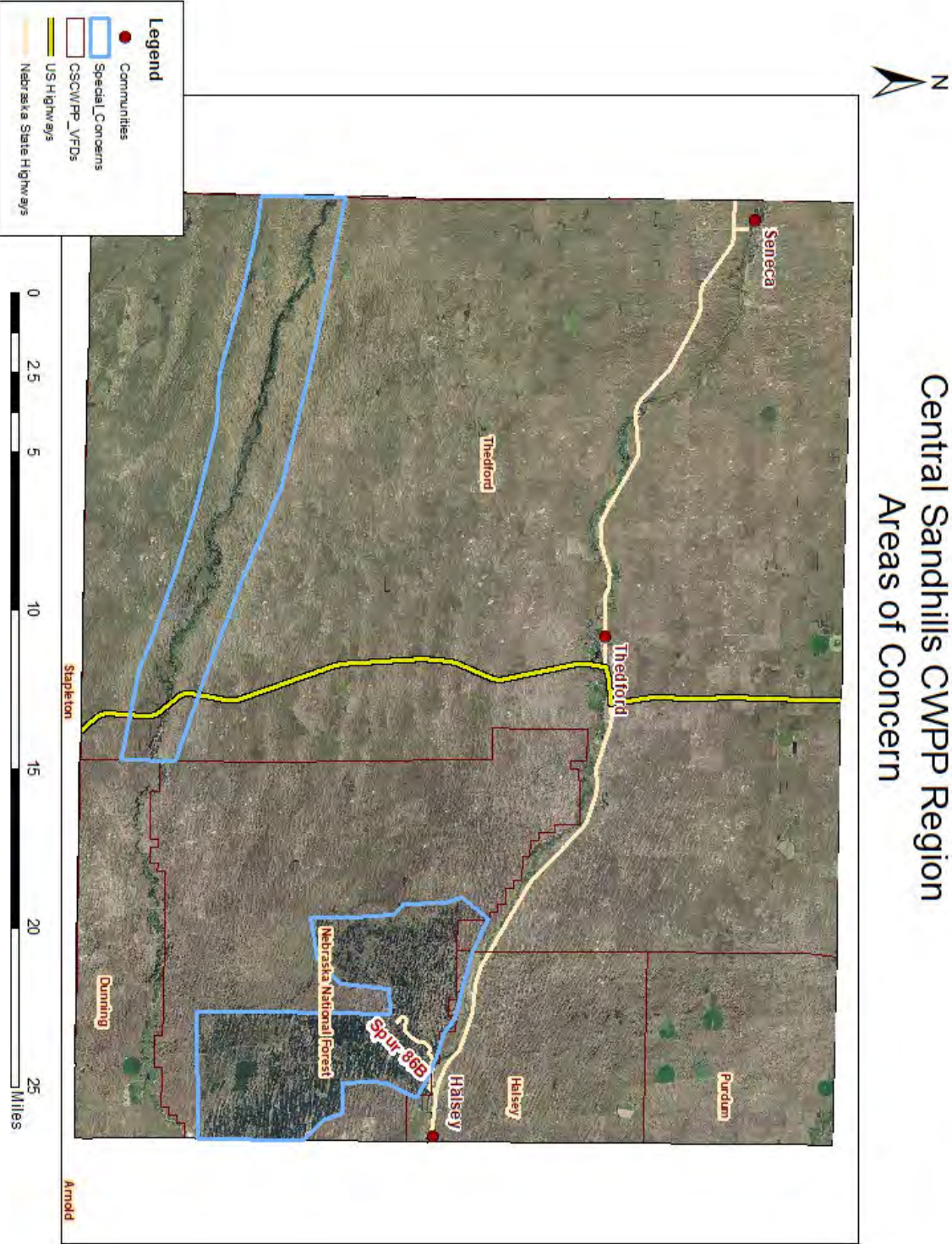
Map 7k: Loup-Garfield-Custer-Valley Counties



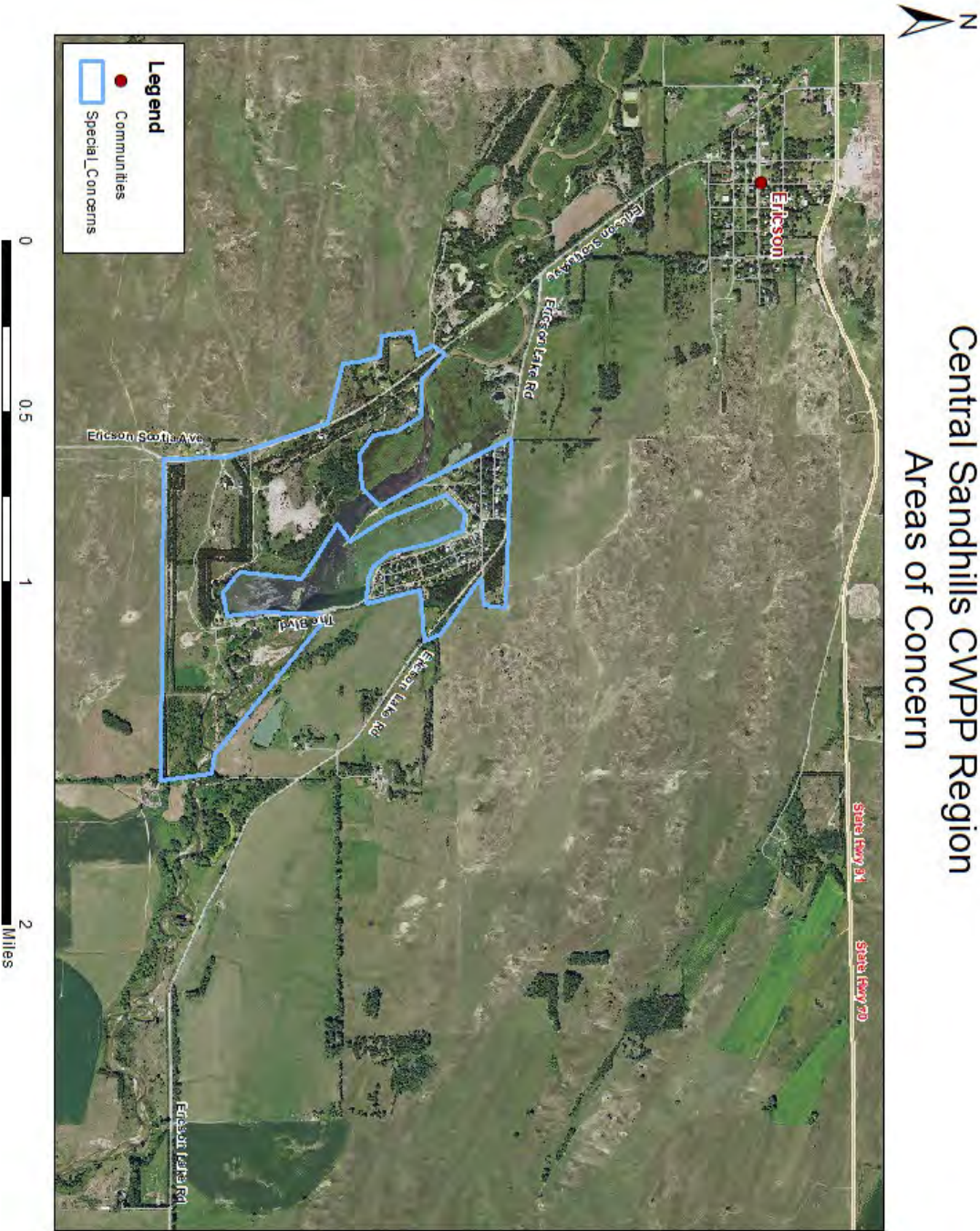
Map 7I: Valley-Greeley Counties



Map 7m: Thomas County



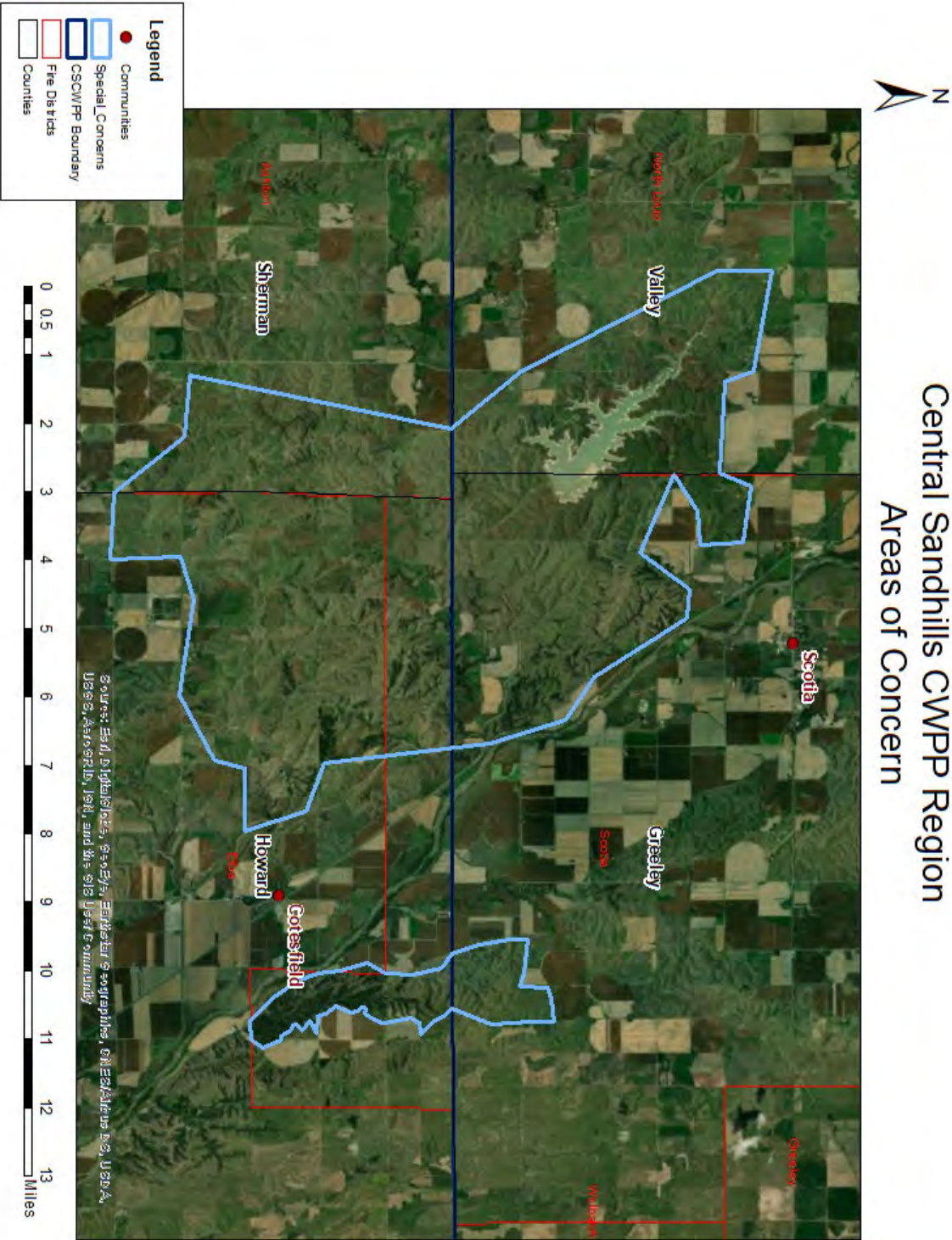
Map 7n: Ericson (Wheeler County)



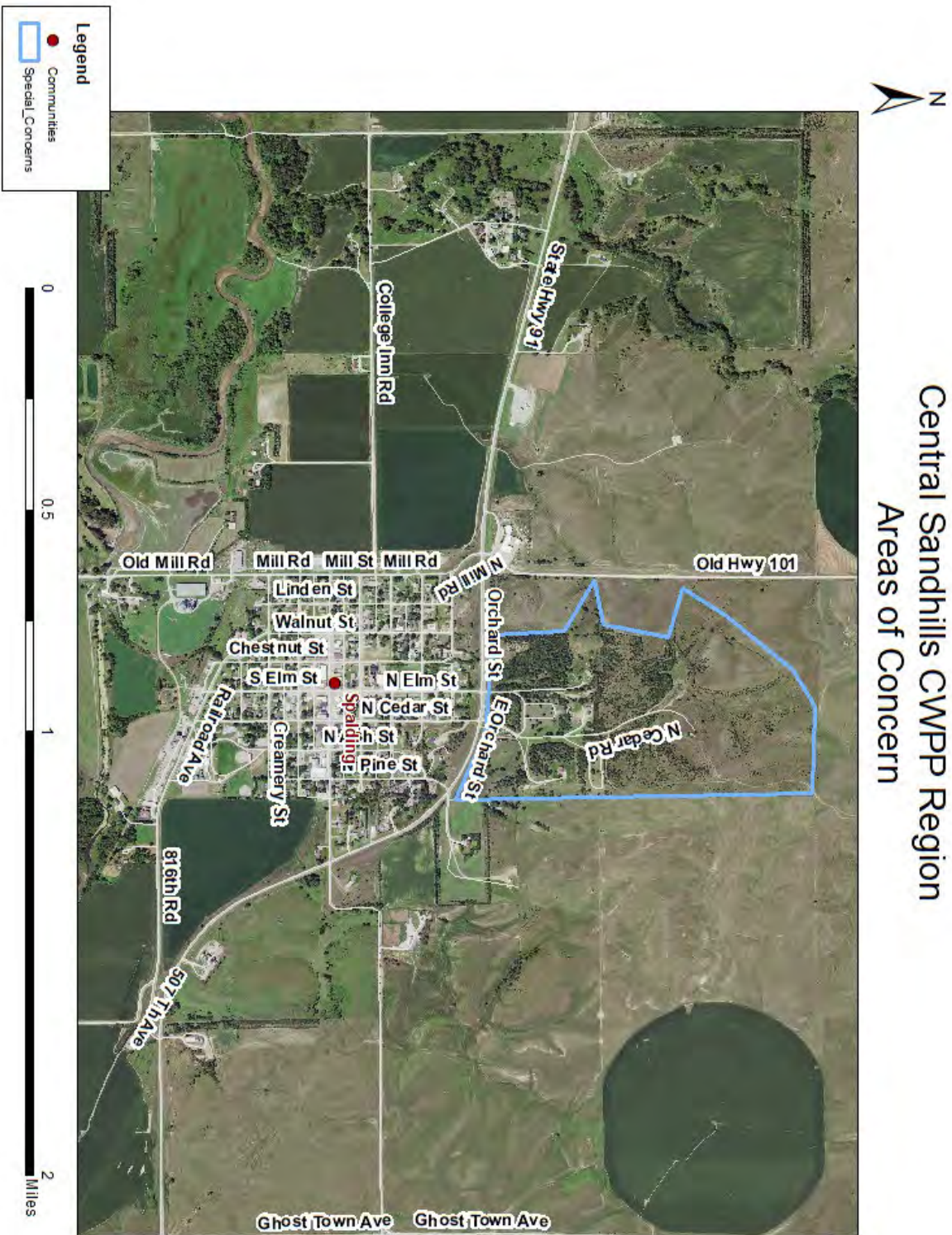
Map 7o: Lake Ericson Streets



Map 7p: Scotia-Cotesfield (Greeley County)

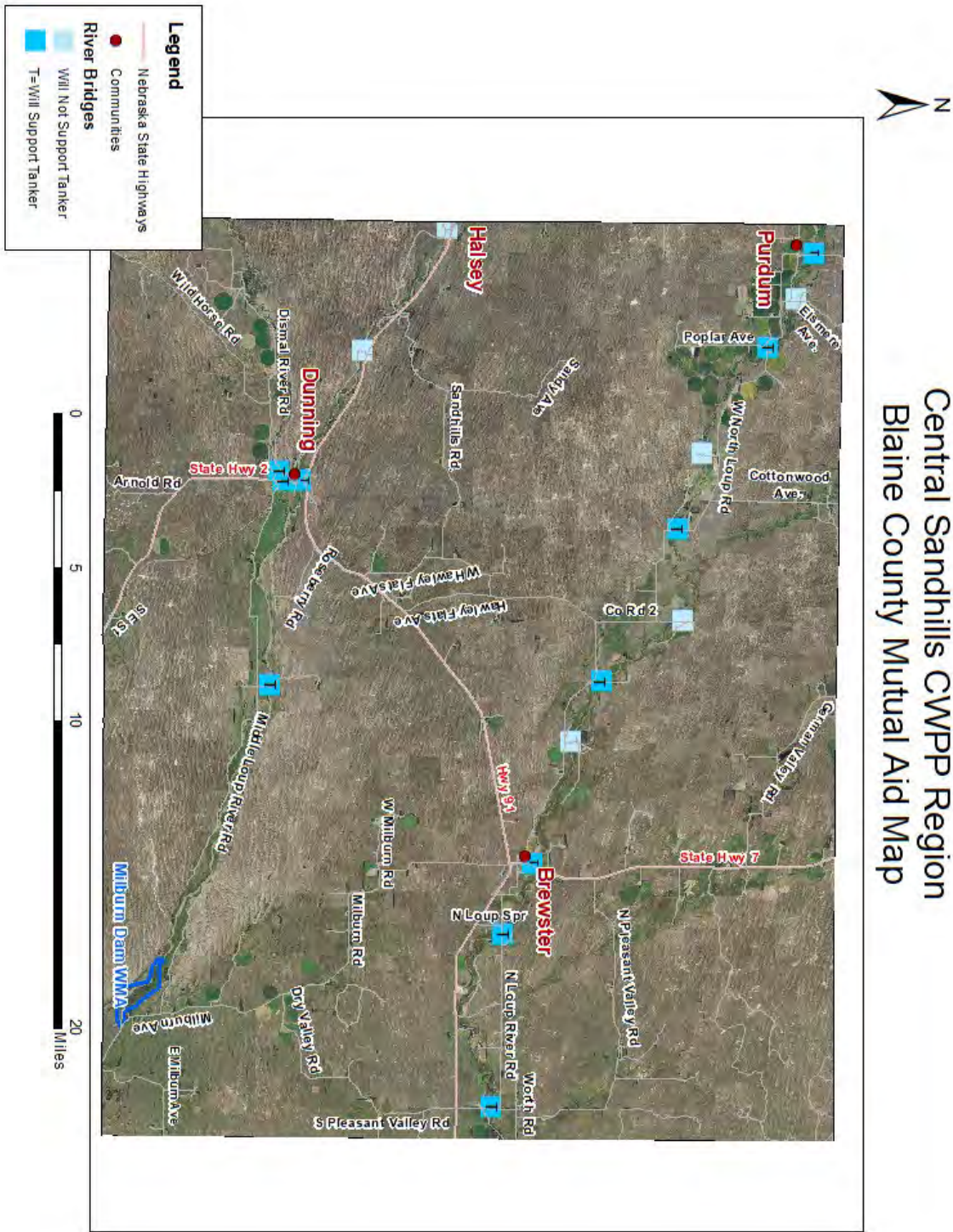


Map 7q: Spalding North (Greeley County)

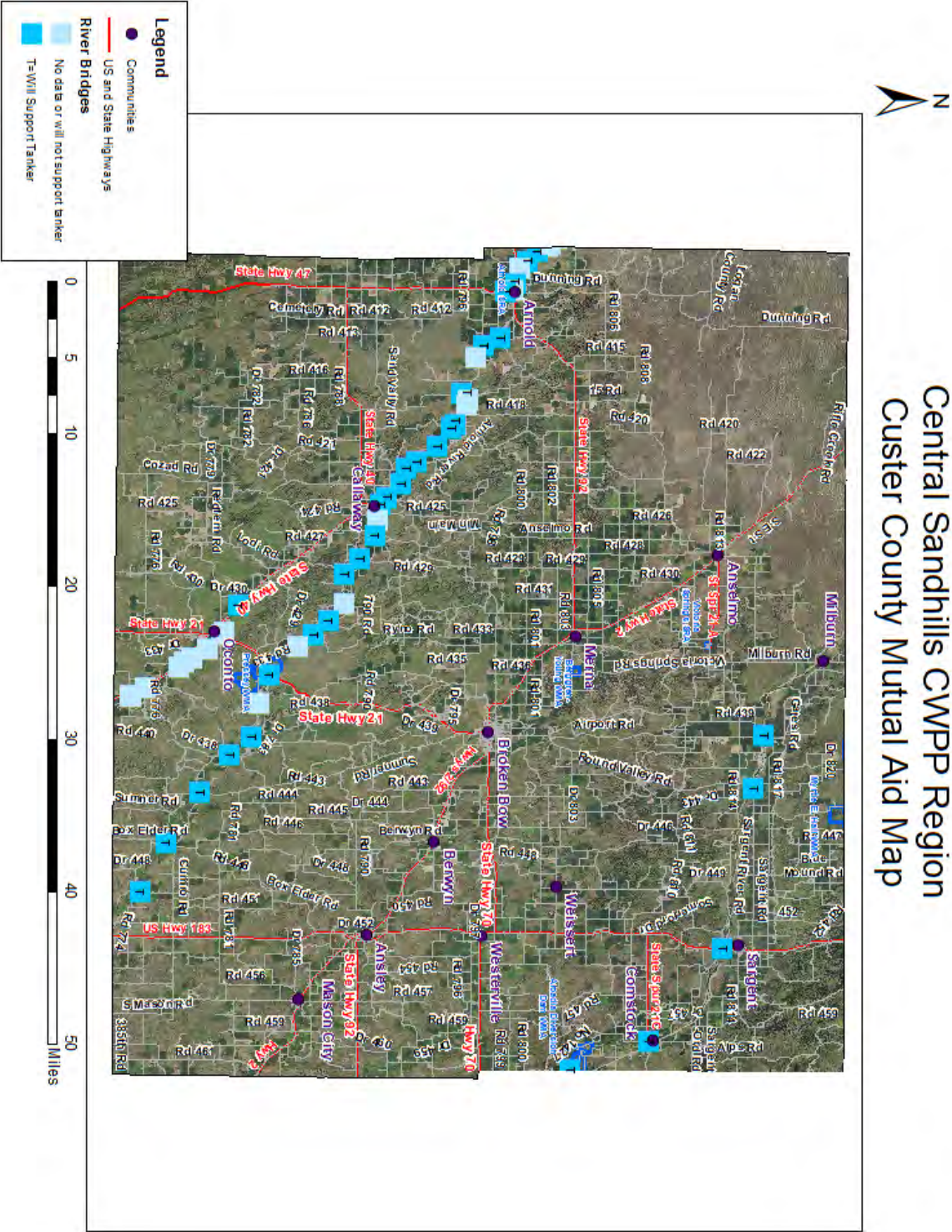


Maps 8a-8j: County Mutual Aid Maps

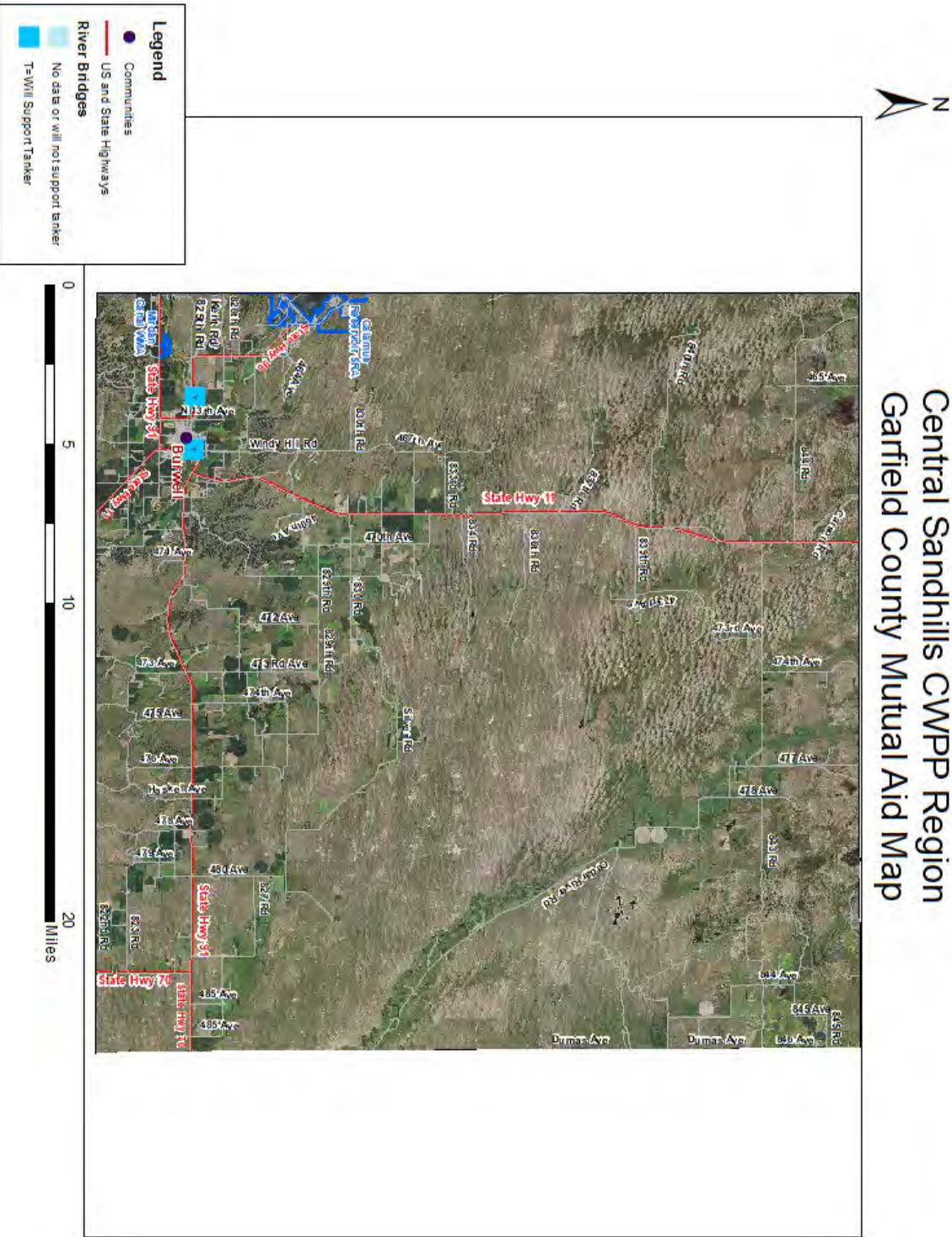
Map 8a: Blaine County



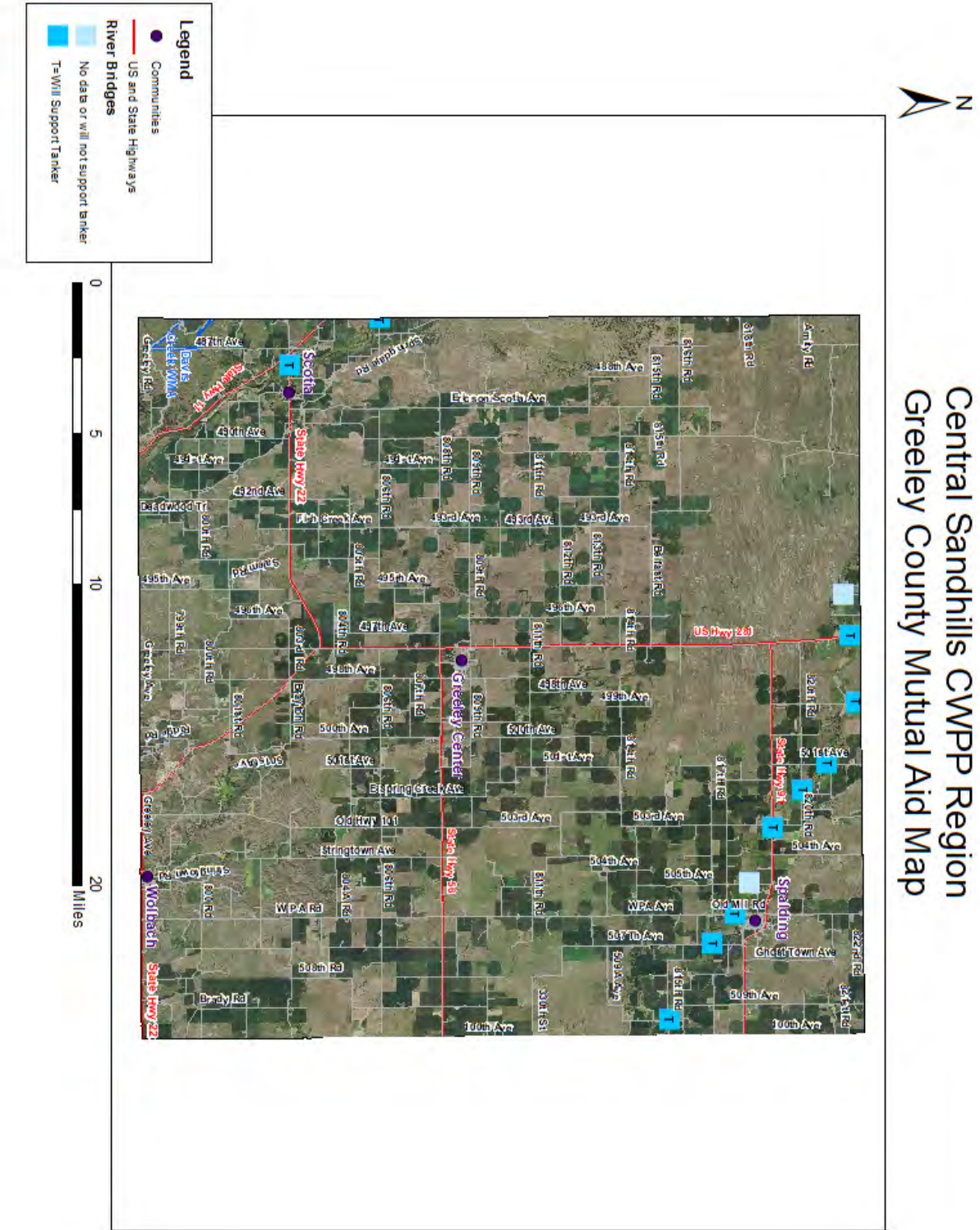
Map 8b: Custer County



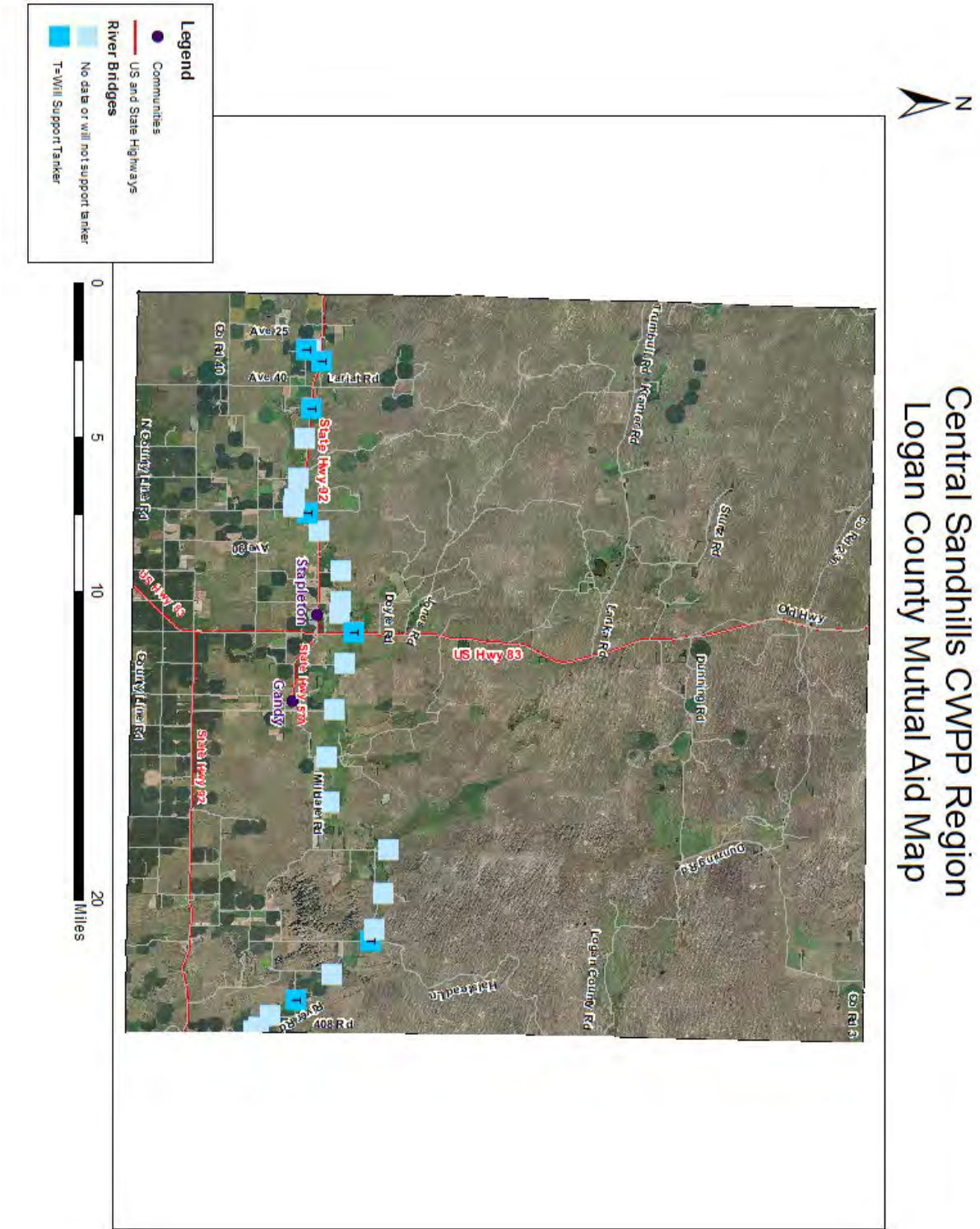
Map 8c: Garfield County



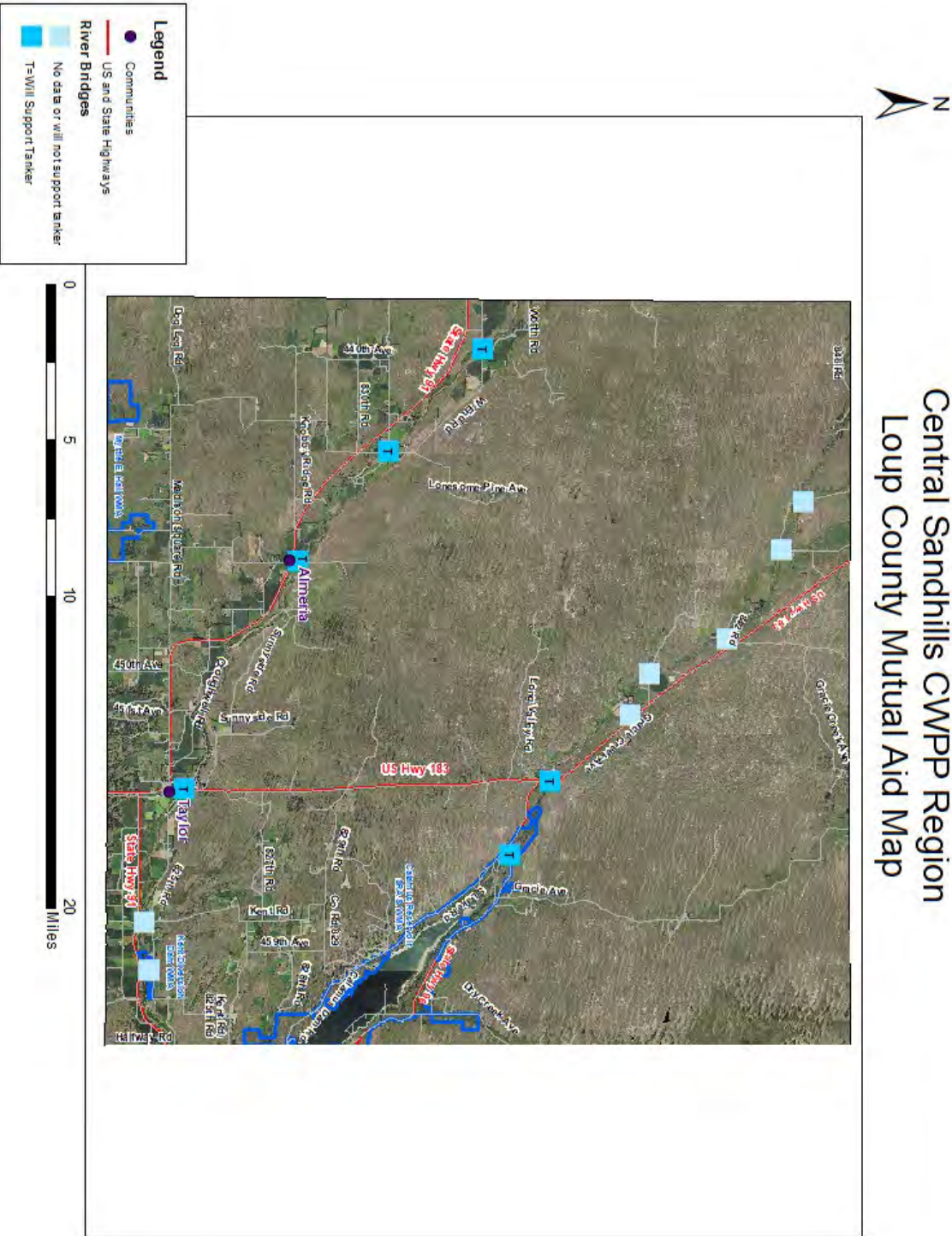
Map 8d: Greeley County



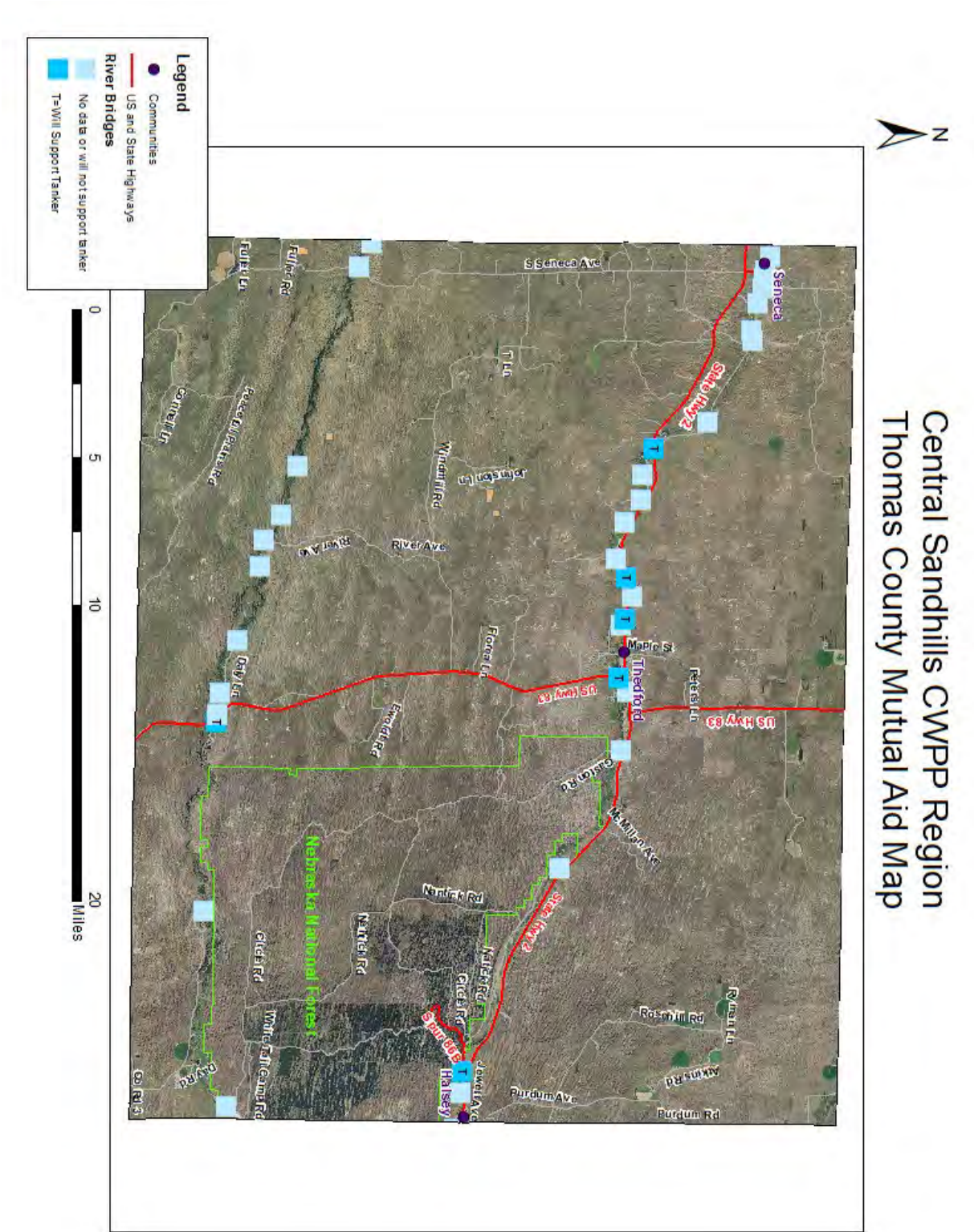
Map 8f: Logan County



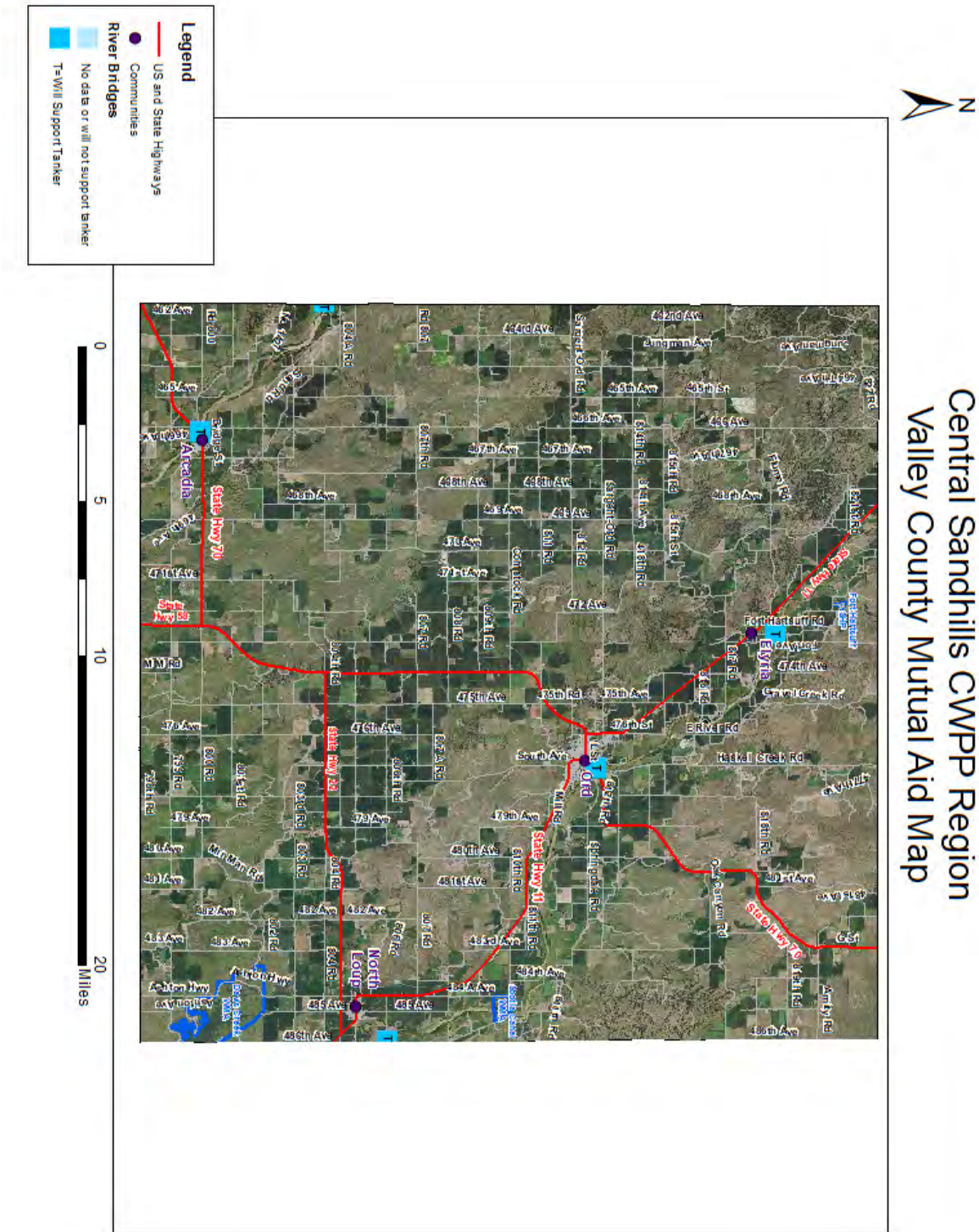
Map 8g: Loup County



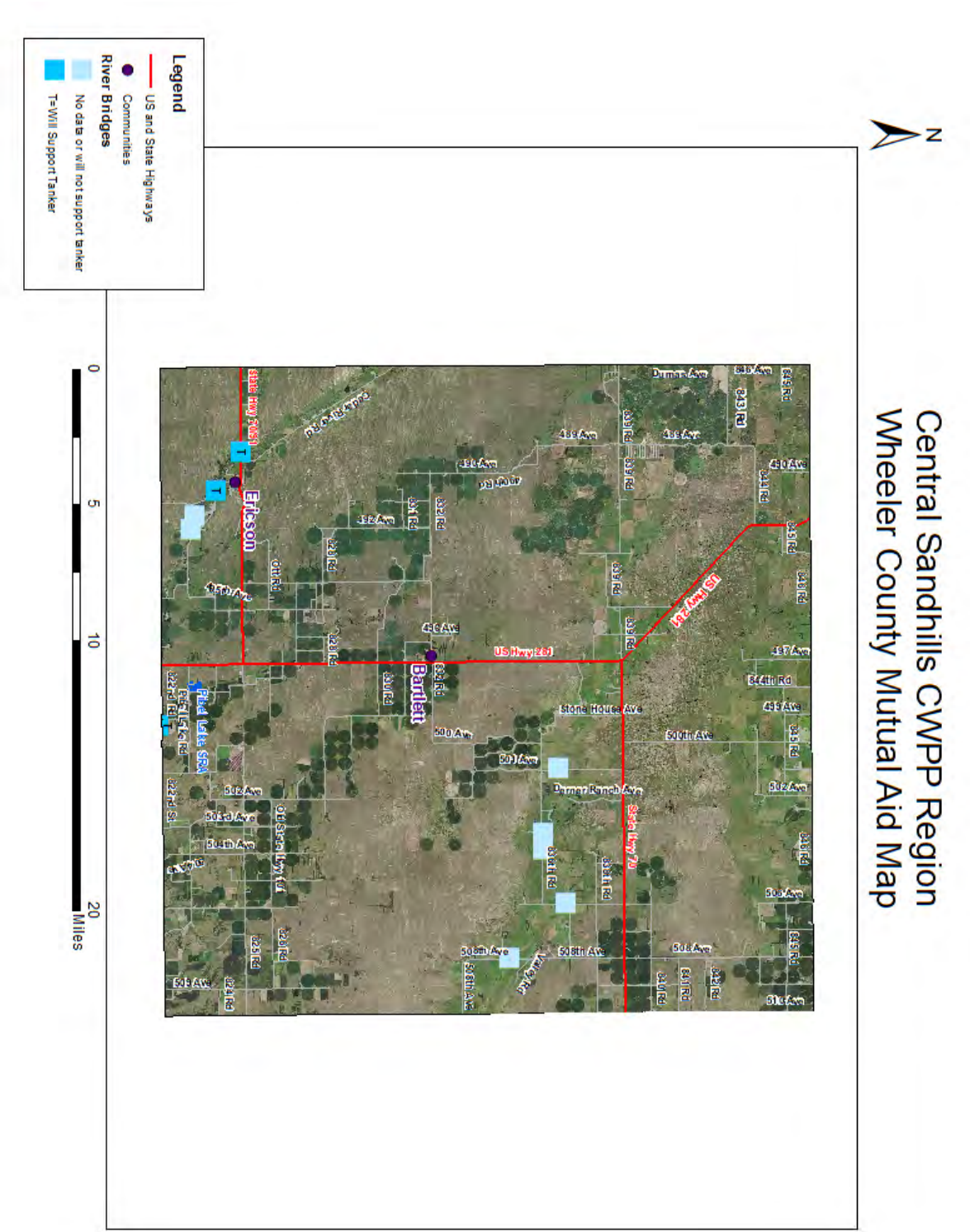
Map 8h: Thomas County



Map 8i: Valley County



Map 8j: Wheeler County



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

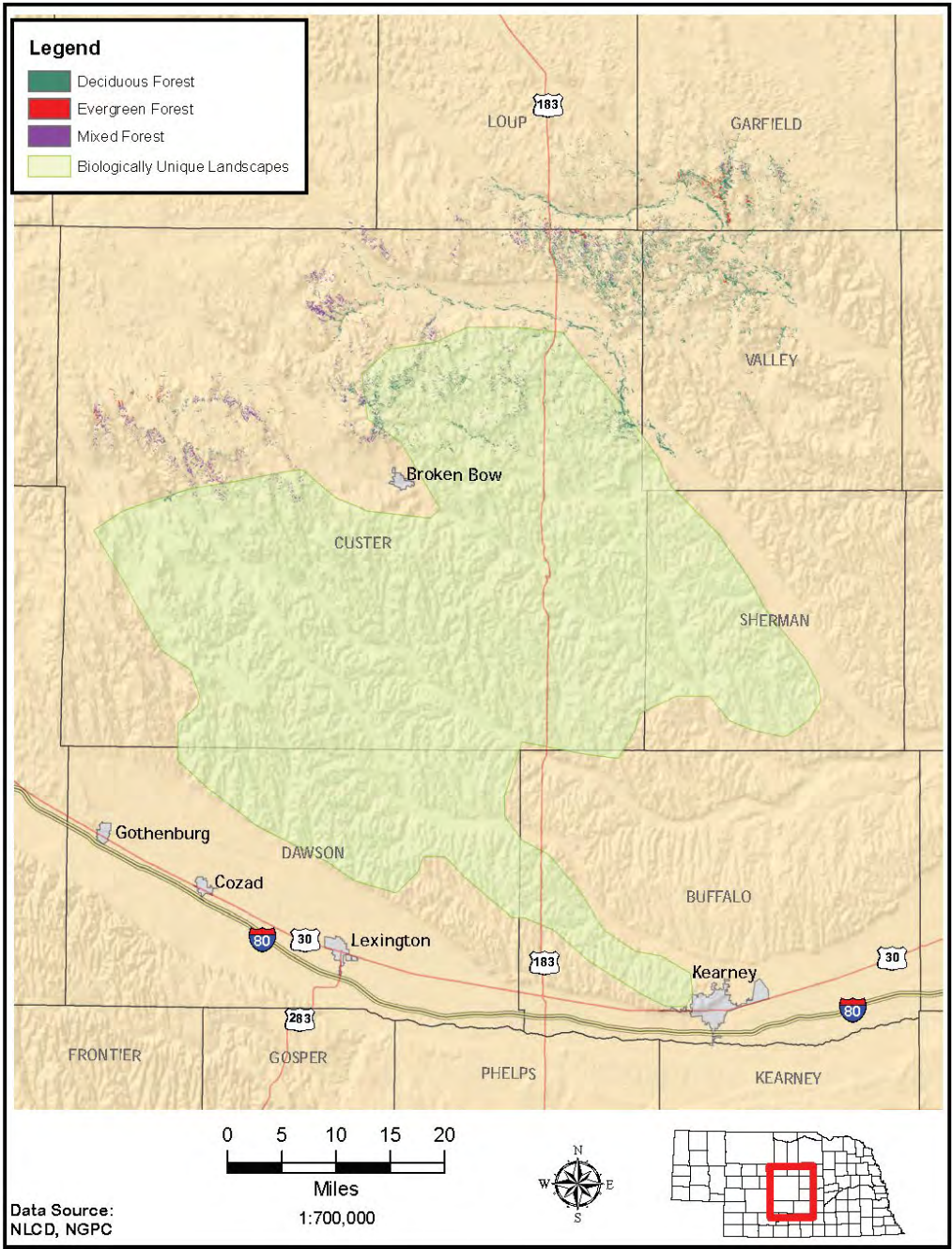
Priority Landscapes in the Central Sandhills CWPP Region
include parts of the
Central Loess Hills and Loup River landscapes

Maps of these areas appear on the following pages

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>

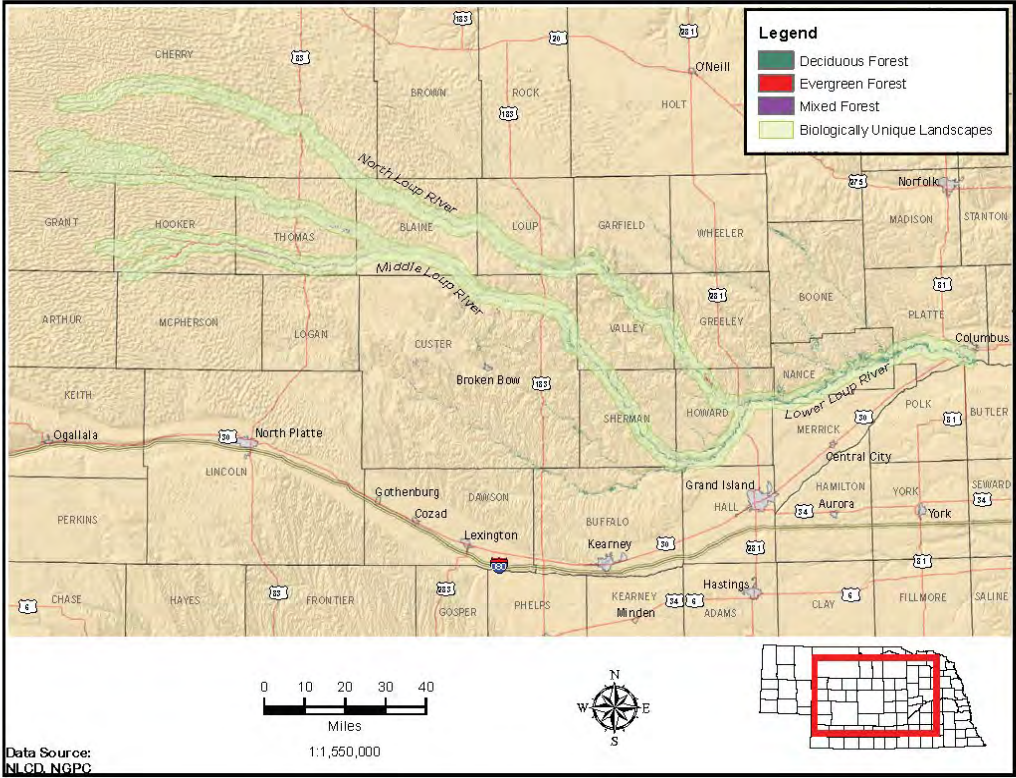
Central Loess Hills Priority Landscape

Figure 42. Priority Forest Landscape: Central Loess Hills



Loup River Priority Landscape

Figure 51. Priority Forest Landscape: Loup River



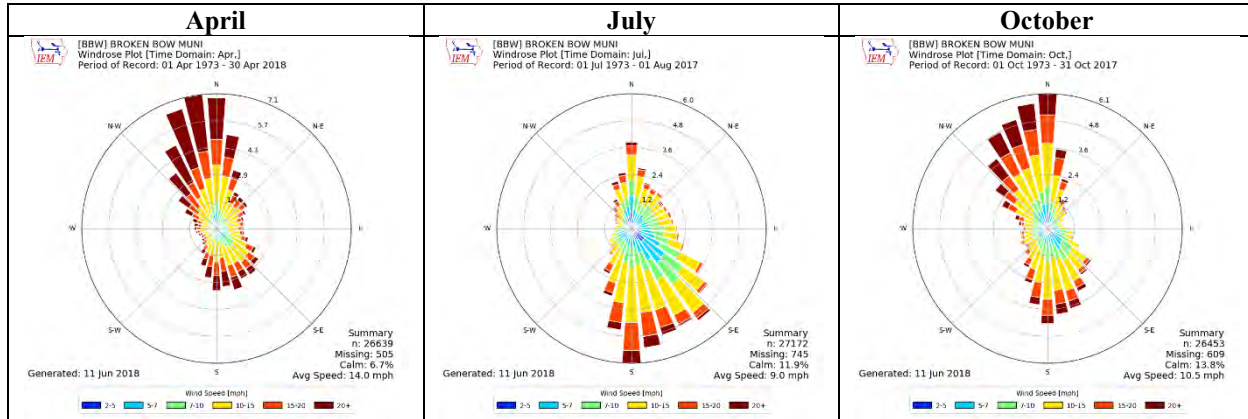
Appendix D

Wind Roses For Selected Cities in the Central Sandhills CWPP Region

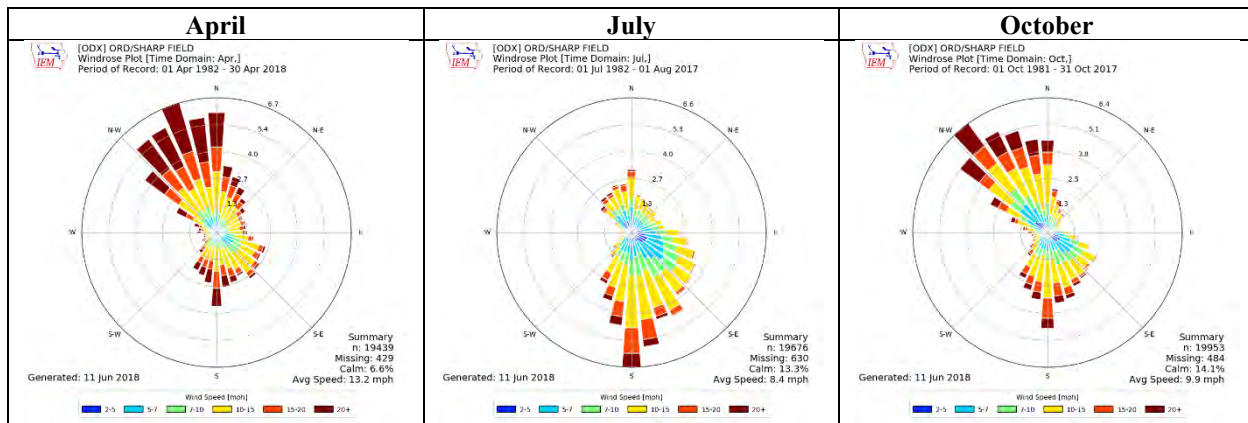
- a. Broken Bow
- b. Ord
- c. Thedford

Central Sandhills Community Wildfire Protection Plan

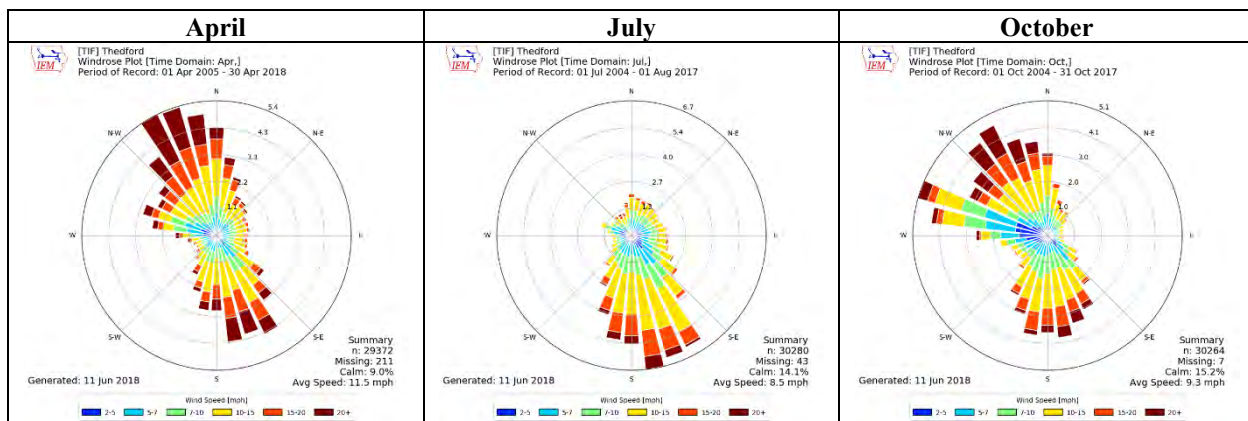
Broken Bow, Nebraska Wind Direction and Speed 1973-2018



Ord, 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 Central Sandhills CWPP counties can be viewed at the following online locations:

a. Upper Loup NRD:

<https://jeo.com/sites/default/files/inline-files/Upper-Loup-NRD-Hazard-Mitigation-Plan-Final-.pdf>

b. Lower Loup NRD:

https://jeo.com/sites/default/files/inline-files/1.-Upfront_2.pdf

c. Twin Platte NRD:

<http://www.tpnrd.org/wp-content/uploads/1.-Upfront.pdf>

Appendix F

Nebraska Mutual Aid Districts

Central Sandhills Community Wildfire Protection Plan

Nebraska Mutual Aid Associations

Updated 1/11/2019

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

Central Sandhills Community Wildfire Protection Plan

Cherry 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	Colfax County MA Clarkson Howells Leigh Schuyler	Cuming County MA Bancroft Beemer Pilger West Point Wisner	Custer County MA Anselmo Ansley Arnold Broken Bow Callaway Comstock Mason City Merna Oconto Sargent
Dodge County MA Dodge Fremont Fremont Rural Hooper Nickerson North Bend Scribner Snyder Uehling	Elkhorn Valley MA Battle Creek Carroll Hadar Hoskins Madison Meadow Grove Norfolk Pierce Stanton Wayne Winside	Fillmore County MA Bruning Exeter Fairmont Geneva Grafton McCool Junction Milligan Ohiowa Shickley Sutton	Frenchman Valley MA 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 Aurora Giltner Hampton Hordville Marquette Phillips Hamilton County EMS	Hastings Area MA 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	KBR&C MA Ainsworth Bassett Calamus Johnstown Long Pine Newport Raven Springview Wood Lake	Lancaster County MA 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

Central Sandhills Community Wildfire Protection Plan

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

Central Sandhills Community Wildfire Protection Plan

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

Central Sandhills Community Wildfire Protection Plan

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

Appendix G

Fire Department Equipment and Contact Information and Non-Fire Department Resources in the Central Sandhills CWPP Region

This section includes Fire Department information from Annex F of county Local Emergency Operations Plans, additional information from the departments that responded to the CWPP questionnaire, and a partial listing of resources not associated with rural fire departments.

Central Sandhills Community Wildfire Protection Plan

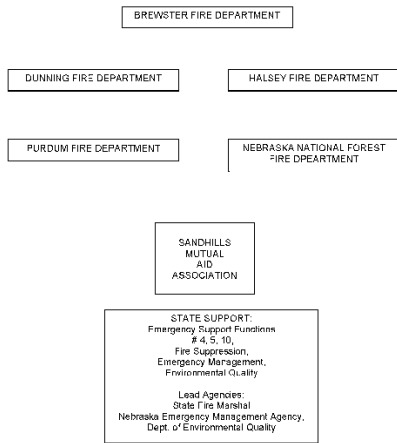
Blaine County

Information from Blaine Co. LEOP, Annex F:

BLAINE COUNTY LEOP

ANNEX F

FIRE SERVICES



F-1

2015

F-11
2015

BLAINE 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	KINDS/TYPES SPECIAL EQUIPMENT Yes / No	RADIO EQUIPMENT Yes / No
Dunning	308 942-3435		1	1		6	1			Air Packs	No	
Brewster	308 942-3435		1	1		7		1		Jaws of Life	No	
Purdum	308 942-3435			1		7						
Nearest HAZMAT Response Team	North Platte											

BLAINE COUNTY LEOP

ANNEX F
ATTACHMENT 1

Survey Responses from Blaine County Fire Departments:

Halsey: See Thomas County section

Purdum Rural Fire Department:

Municipality	Purdum		
County	Blaine, Cherry, Thomas		
Station Location	84363 Harvest Ave.	Purdum 69157	
Dept. phone & email	308-834-3267	kcox@neb-sandhills.net	
Chief	Shane L. Keller	402-376-5831	slkeller88@gmail.com
Asst. Chief/Sec.	Chris Higgins	402-389-1235	402-376-1557 chrishiggins8392@yahoo.com
Treas.	Ronald K Cox	308-972-1046	308-834-3267 kcox@neb-sandhills.net

Personnel

Number	Type
43	Volunteer

Equipment

PURDUM VOLUNTEER FIRE DEPARTMENT									
Radio No.:	Year, Make and Type	Pump Size	Tank Size	SCBA Packs	Fire Hose - No. of Feet:				
					1"	1 1/2"	2 1/2"	3"	5"
Own 21	02 Ford 4x4 Grass Tk	40	500	2		50'			
Own 22	78 Chev 4x4 Grass Tk	10	200		50'				
Own 23	09 Ford 4x4 Grass Tk	40	400			50'			
Own 24	74 Chev 4x4 Grass Tk	40	225		15'	50'			
Own 25	71 IHC 4x4 Grass Tk	40	225		15'	50'			
Own 26	73 Ford 4x4 Grass Tk	40	200			50'			
Own 28	86 Chev 4x4 Grass Tk	40	300		15'	50'			
Forest Service Agreement 40	6x6 Tanker	250	1500			50'		20'	
27	6x6 Grass	40	700			50'			
EMERGENCY MEDICAL UNITS:									
Radio No.:	Year and Make:	Patient Capacity:	Radio No.:	Year and Make:	Patient Capacity:				

GIS layer available for housing, infrastructure, bridge limits, hydrants/water sources? **NO**

Mutual Aid District(s): **Sandhills and Cherry Co.**

Central Sandhills Community Wildfire Protection Plan

Custer County

Information from Custer Co. LEOP, Annex F:

CUSTER COUNTY LEOP

ANNEX F

FIRE SERVICES

ARNOLD FIRE DEPARTMENT	ANSELMO FIRE DEPARTMENT
ANSLEY FIRE DEPARTMENT	BROKEN BOW FIRE DEPARTMENT
CALLAWAY FIRE DEPARTMENT	COMSTOCK FIRE DEPARTMENT
MASON CITY FIRE DEPARTMENT	MERNA FIRE DEPARTMENT
OCONTO FIRE DEPARTMENT	SARGENT FIRE DEPARTMENT

CUSTER 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,

CUSTER COUNTY FIRE RESOURCES

(List numbers of equipment)

FIRE DEPARTMENT	PHONE	AERIAL	PUMPER	TENDER	PUMP/BU/ TENDER	GRASSFIRE TRUCK	UTILITY TRUCK	RESCUE UNITS	ROPE TEAM	SPRINKLER SYSTEMS	EXTRICATION EQUIPMENT	EXTRICATION AIR BAGS	LOGICAL EMERGENCY YES/NO
Arnold		0	2	1	0	3	1	2	Rope Team		Extrication	Air Bags	NO
Anselmo		0	1	3	0	5	2	0					NO
Ansley		0	3	2	0	3	1	2			Extrication	Air Bags	NO
Broken Bow		0	2	1	0	3	1	2	Rope Team	Thermal Imager	Extrication	Cascade Gator	NO
Callaway		0	1	2	1	4	0	2			Extrication		NO
Comstock		0	1	1	0	2	0	1					NO
Mason City		0	1	1	0	3	1	2					NO
Merna		0	1	1	0	2	1	1			Cascade	Cribbing Gator	NO
Oconto		0	1	1	0	2	0	1			Extrication	Air Bags	NO
Sargent		0	2	1	0	2	1	2			Extrication	Air Bags	NO
North Platte HAZ-MAT Response Team	308-535-8785								Haz-Mat Truck and Trailer		Decon Unit		YES

CUSTER COUNTY LEOP

ANNEX F
ATTACHMENT 1

Survey Responses from Custer County Fire Departments:

Callaway Rural Fire Department:

Municipality	Callaway		
County	Custer		
Station Location	PO Box 73	City Callaway 68825	
Dept. phone & email	308-836-2898	Dan-trumbull@hotmail.com	
Chief	Daniel L. Trumbull	308-870-2127	Dan-trumbull@hotmail.com
Asst. Chief	Adam Peterson	308-870-5256	
Sec./Treas.	Frank Potter	308-870-1832	

Personnel

Number	Type
29	Volunteer

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

Number	Type
3	Engine Type 6: minimum 50 GPM, 200 gal. cap., 2 crew members
2	Equipment Trucks
2+	Road Dept. Equipment (describe): Dozers, maintainers
3	Other (describe): 2 tankers, 1 pumper

Areas of concern: **None**

Areas isolated from water sources: **None**

Areas of high density homes, infrastructure, other high-risk resources: **None**

One way in/out: **McKinley Rd.** Areas needing fuels projects: **No**

Bridges that won't support equipment weight: **Yes, at various locations**

GIS layer available for housing, infrastructure, bridge limits, hydrants/water sources? **No**

Rank:

Housing

Infrastructure

1 Bridge limits

Hydrants

Other water sources

Mutual Aid District(s): **Custer**

Central Sandhills Community Wildfire Protection Plan

Comstock Volunteer Fire Department:

Municipality	Comstock			
County	Custer			
Station Location	105 E Main	Comstock 68828		
Dept. phone & email	308-215-0232	Fax 308-628-4340		
Chief	Perry D. Erikson	308-215-0232	308-628-4340	Erik1husker@nctc.net
Asst. Chief	Will Kirwan	308-215-0294	308628-4282	

Personnel

Number	Type
23	Volunteer

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

Number	Type
1	Engine Type 2: minimum 500 GPM, 400 gal. cap., 3 crew members
2	Engine Type 3: minimum 120 GPM, 300 gal. cap., 2 crew members
1	Tender Type 2: minimum 2,000 gal. cap.
1	Equipment Trucks
1	Other (describe): Ambulance

Areas isolated from water sources: **Pastures can be 5 miles from water**

Areas of high density homes, infrastructure, other high-risk resources: **No**

One way in/out: **No**; Bridges that won't support equipment weight: **No**

GIS layer available for housing, infrastructure, bridge limits, hydrants/water sources? **Yes**

Mutual Aid District(s): **Custer Co. and Loup Valley**

Mason City Rural Fire Protection District #4:

Municipality	Mason City			
County	Custer			
Station Location	495 Main St.	Mason City 68855		
Dept. phone & email	308-870-3054			
Chief	Jonathan Hawkins	308-870-3054		
Asst. Chief	Ron Beck	308-732-3363		
Sec.	Brian Hawkins	308-870-0693		
Treas.	Jonathan Hawkins	308-870-3054		

Personnel

Number	Type
14	Volunteer

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

Number	Type
1 NFS truck	Engine Type 2: minimum 500 GPM, 400 gal. cap., 3 crew members
1 NFS truck	Engine Type 3: minimum 120 GPM, 300 gal. cap., 2 crew members
1	Engine Type 6: minimum 50 GPM, 200 gal. cap., 2 crew members
1	Tender Type 2: minimum 2,000 gal. cap.
1	Equipment Trucks
1	Road Dept. Equipment (describe): Maintainer
1	Other (describe): Ambulance

Equipment (housed remotely on ranches or elsewhere)

Number	Type
1	Unit 29: 1997 GMC 3500 w/300 gal. tank & pump

Central Sandhills Community Wildfire Protection Plan

Areas of concern: **None**

Areas isolated from water sources: **All of the district's pasture ground.**

Areas of high density homes, infrastructure, other high-risk resources: **Mason City.**

One way in/out: **No**

Bridges that won't support equipment weight: **Majority of township roads in district**

Other comments/concerns: **No**

GIS layer available for housing, infrastructure, bridge limits, hydrants/water sources? **No**

Rank:

4 Housing

2 Infrastructure

3 Bridge limits

5 Hydrants

1 Other water sources

Mutual Aid District(s): **Custer Co., Loup-Platte, Central Nebraska**

Areas needing fuels projects: **No**

Sargent Volunteer Fire Department:

Municipality	Sargent			
County	Custer			
Station Location	301 W Della (POB 276)	Sargent 68874		
Dept. phone & email	308-527-4200, fax 308-527-3745	cityofsargentreece@nctc.net		
Chief	Reece L Jensen	308-214-0059	308-527-3633	cityofsargentreece@nctc.net
Asst. Chief	Dan Mankle	308-215-0042	308-527-3782	Djmankle67@gmail.com
Sec./Treas.	Gerry Sheets	308-214-0182	308-527-3627	gerrysheets@hotmail.com

Personnel

Number	Type
35	Volunteer

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

Number	Type
2	Engine Type 1: minimum 1,000 GPM, 400 gal. cap., 4 crew members
1	Engine Type 2: minimum 500 GPM, 400 gal. cap., 3 crew members
2	Engine Type 3: minimum 120 GPM, 300 gal. cap., 2 crew members
1	Engine Type 4: minimum 70 GPM, 750 gal. cap., 2 crew members
1	Equipment Trucks
1+	Road Dept. Equipment (describe): Maintainers
2	Other (describe): 1-4x4 pumper truck & 2WD pumper truck

Areas isolated from water sources: **16 miles**

GIS layer available for housing, infrastructure, bridge limits, hydrants/water sources? **Yes**

Other: **We just have a lot of area in our district where access is really hard to get to because of canyons and trees. Being able to stay in line with a fire can be difficult at times.**

Mutual Aid District(s): **Custer**

Central Sandhills Community Wildfire Protection Plan

7	2 Type 4 and 5 Type 6 engines
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Areas of concern:

- **Calamus Lake** – many houses with minimal roads.
- **Most of sections in 16W & 17W; 22N, 23N:** state campsites, boat docks, 50+ homes with 2 new ones a month; fine fuels, minimum roads, narrow roads, several windbreaks; ingress and egress issues; rolling Sandhills; lacks water within effective distance; fast growing area with limited access and a lot of big homes

Areas isolated from water sources: **Most pasture land could be several miles to the nearest stock tank, if filled.**

Areas of high density homes, infrastructure, other high-risk resources: **All around Calamus Lake**

One way in/out: **Most state campsites, several subdivisions 1+ miles ling with 10+ houses**

Bridges that won't support equipment weight: **Hwy. 96 North Loup River bridge being repaired**

Other comments/concerns: **Communications – set up command structures**

GIS layer available for housing, infrastructure, bridge limits, hydrants/water sources? **We believe Region 26 EM has something**

Rank:

- 1 Housing
- 3 Infrastructure
- 4 Bridge limits
- 5 Hydrants – no hydrants in area
- 2 Other water sources

Other: **We tend to jump on a fire fast to try and catch it before they get too big. We are proficient at backburning and our area ranchers are great with their equipment.**

Mutual Aid District(s): **Loup Valley**

Central Sandhills Community Wildfire Protection Plan

Greeley County

Information from Greeley Co. LEOP, Annex F:

Greeley County Fire		Attachment	
FIRE SERVICES		GREELEY COUNTY FIRE RESOURCES (List numbers of equipment)	
Greeley Fire Department	Scotia Fire Department	Spalding Fire Department	Wolbach Fire Department
Loup Valley Firemen's Mutual Aid Association	Greeley County Mutual Aid Association	State Support: Emergency Support Functions 1-2, 5-10 Fire Operations Emergency Management Environmental Quality Local Agencies State Fire Marshal Nebraska Emergency Management Agency	

Survey Responses from Greeley County Fire Departments:

Scotia Rural Fire Protection District:

Municipality	Scotia			
County	Greeley			
Station Location	304 S Main (POB 191)		Scotia 68875	
Dept. phone & email	308-245-3310		cj2mo4u@yahoo.com	
Chief	Jay T. Meyer	308-750-0673	cj2mo4u@yahoo.com	
Asst. Chief	Donald Roy	Cell	308-750-5328	
Sec./Treas.	Rick Vlach	308-219-0072		

Personnel

Number	Type
32	Volunteer

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

Number	Type
1	Engine Type 2: minimum 500 GPM, 400 gal. cap., 3 crew members
2	Tender Type 2: minimum 2,000 gal. cap.: 1-2,000 gal. & 1-1,200 gal.
1	Equipment Trucks
3+	Road Dept. Equipment (describe): Motor graders, loaders, water truck
4	Other (describe): 3 pickups w/250 gal. skids, 1 Jeep w/70 gal. tank & pump

Areas isolated from water sources: **Northern part of district 10 miles min.**

Areas of high density homes, infrastructure, other high-risk resources: **Will's Washout – 2 northeast of Cotesfield – Howard Co.: homes, hazard, ingress/egress issues, topography, lack of water within effective distance.**

GIS layer available for housing, infrastructure, bridge limits, hydrants/water sources? **No**

Rank:

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

Mutual Aid District(s): **Loup Valley**

Central Sandhills Community Wildfire Protection Plan

Logan County

Information from Logan Co. LEOP, Annex F:

LOGAN COUNTY LEOPANNEX F

FIRE SERVICES

STAPLETON
FIRE DEPARTMENT

MID PLAINS
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-12014

LOGAN 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
Stapleton Fire Dept	911		1	1		4	1	2		ATV 3-generators Cascade System Light Tower	NO
Nearest HAZMAT Response Team											
North Platte											

F-11

2014

LOGAN COUNTY LEOPANNEX F
ATTACHMENT 1

Central Sandhills Community Wildfire Protection Plan

Loup County

Information from Loup Co. LEOP, Annex F:

LOUP COUNTY LEOP

ANNEX F

FIRE SERVICES

LOUP COUNTY FIRE
DEPARTMENT

MUTUAL
AID
SUPPORT FROM

BLAINE COUNTY FIRE
DEPARTMENT

BURWELL RURAL FIRE
DEPARTMENT

SARGENT RURAL 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,

F-1

2016

LOUP COUNTY FIRE RESOURCES (List numbers of equipment)

FIRE DEPARTMENT	PHONE	AERIAL	PUMPER	TANKER	PUMPER/ TANKER	GRASS-FEED TRUCK	UTILITY TRUCK	RESCUE UNITS	KINDS/TYPES/ SPECIAL- TEAMS	KINDS/TYPES SPECIAL EQUIPMENT	RADIO- LOGICAL EQUIPMENT Yes / No
Loup County	942-3435			2		10	1	1			
Location of Grass Trucks											
1. Tel Miller Chad Buell	402-389-0428 402-273-4566					1					
2. James Sheldon Kenneth Kraus	308-942-6074 308-942-6118					1					
3. John Taylor Summer Time Only	308-942-3148					1					
4. Deane Meeks	308-942-3170					1					
5. Alan Ralls (2 Trucks)	308-214-0336			1		1					
6. Pat Morgan	308-214-0772					1					
7. Loup Co. (Taylor) Fire Department				1		4	1	1			
8. Bruce Switzer (Burwell Fire District)	308-346-5481										
9. Don Brown (Burwell Fire District)	308-942-5451										

LOUP COUNTY LEOP

ANNEX F
ATTACHMENT 1

F-11

2016

Central Sandhills Community Wildfire Protection Plan

Thedford:

Municipality	Thedford			
County	Thomas & Cherry			
Station Location	39253 Hwy. 2		Thedford 69166	
Dept. phone & email	Phone			
Chief	Russ A. Reiser	402-322-0760		russ@pearsonlivestockeg.com
Asst. Chief	Dan DeNaeyer	308-539-0744		
Sec./Treas.	Kevin Hood	308-645-9597		k.hood@ne.usda.gov

Personnel

Number	Type
50	Volunteer

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

Number	Type
1 FEPP	Engine Type 1: minimum 1,000 GPM, 400 gal. cap., 4 crew members
6 FEPP	Engine Type 3: minimum 120 GPM, 300 gal. cap., 2 crew members
2 FEPP	Tender Type 2: minimum 2,000 gal. cap.
1	Equipment Trucks
1	Other (describe): Extrication/Command

Equipment (housed remotely on ranches or elsewhere)

Number	Type
2	Grass rigs housed at Seneca
2	Grass rigs housed at Brownlee

Areas of concern: **Dismal River Valley (grass and rough terrain)**

GIS layer available for housing, infrastructure, bridge limits, hydrants/water sources? **Yes**

Mutual Aid District(s): **Sandhills**

Central Sandhills Community Wildfire Protection Plan

Non-VFD Resources Reported within the Central Sandhills CWPP Region

Custer Burn Association

The Custer Burn Association has a prescribed fire trailer located south of Berwyn. They would need their board's approval to use on wildfire. The association also has access to a Pheasants Forever prescribed fire trailer stationed in Ord, which also requires board approval to use. Contact Chairman Allen Vavra for further information.

Individuals

Paul Michalski, Custer Burn Association vice-chair, has a skid and access to more; all are removed from personal vehicles during the off season. He also has drip torches, flappers (swatters), fire broom, Kestrel, transfer water pumps, and portable water tanks. Other burn association members have more equipment but have not granted permission to include their equipment lists in this document. Paul works for the Twin Loups Reclamation Irrigation District and they customarily grant permission to use canal water for emergency wildfire use.

Jerry Smith is on the LLNRD board of directors. He has a side-by-side with sprayer, a skid, 1,000 gallon tank, and a 2,000 gallon tanker truck.

Adam Switzer has an informal burn group in the Calamus Lake area. They have an 1,800 gallon tanker, a 1,000 gallon grass rig, and a 300 gallon grass rig.

Allen Vavra is president of the Custer Burn Association. He has a water refill point in Valley County. It is a 2000 to 3000 gallon underground tank with opening in the top for larger hoses. The open well filling has no pressure tank, so grass rigs will have to be able to draw water it themselves. "You will have to cut fence to get into pasture and follow path. But cutting fence is not a problem. Just a barbed wire fence. 3 wire at this time." The refill point is included on the Valley Co. mutual aid map. Zoom of point is below.



Appendix H

Fire Department Survey and Distribution List

Central Sandhills Community Wildfire Protection Plan

Fire Department Survey

Distributed to all departments in the CWPP Region 5/1/2018

Volunteer Fire Department

Fire Department: _____
Municipality: _____
County: _____
Street Address: _____
City: _____ Zip Code: _____
Email: _____
Phone: _____
Fax: _____

Contact Information

Chief

First: _____ MI: _____ Last: _____
Email: _____
Phone: _____
Cell phone: _____

Assistant Chief

First: _____ MI: _____ Last: _____
Email: _____
Phone: _____
Cell phone: _____

Secretary

First: _____ MI: _____ Last: _____
Email: _____
Phone: _____
Cell phone: _____

Treasurer

First: _____ MI: _____ Last: _____
Email: _____
Phone: _____
Cell phone: _____

Central Sandhills Community Wildfire Protection Plan

Resources

Personnel

How many personnel are available to respond to fires (Full-time): _____

How many personnel are available to respond to fires (Part-time): _____

How many personnel are available to respond to fires (Volunteer): _____

Engines

Type	# FEPP*	# FFP*	# Owned Outright
Type 1			
• 1,000 GPM, 400 gallon Capacity, four crew members (MINIMUM)			
Type 2			
• 500 GPM, 400 gallon Capacity, three crew members (MINIMUM)			
Type 3			
• 120 GPM, 300 gallon Capacity, two crew members (MINIMUM)			
Type 4			
• 70 GPM, 750 gallon Capacity, two crew members (MINIMUM)			
Type 5			
• 50 GPM, 500 gallon Capacity, two crew members (MINIMUM)			
Type 6			
• 50 GPM, 200 gallon Capacity, two crew members (MINIMUM)			
Type 7			
• 20 GPM, 125 gallon Capacity, two crew members (MINIMUM)			

Tenders

Type	# FEPP	# FFP	# Owned Outright
Type 1			
Type 1 (tactical)			
• 5,000 gallon Capacity(MINIMUM)			
Type 2			
Type 2 (tactical)			
• 2,000 gallon Capacity(MINIMUM)			

* FEPP (Federal Excess Personal Property) and FFP (Fire Fighter Property) are NFS Equipment Programs

How many Equipment Trucks do you have? _____

How many types of vehicles (other)? _____

Please describe: _____

Any equipment housed on ranches/not at main fire barn? Yes ☐ No ☐

Please describe: _____

Central Sandhills Community Wildfire Protection Plan

Mutual Aid Agreements

What mutual aid district do you belong to? _____

Risk Assessment

Have you identified one or more 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? _____

Have you identified one or more areas in your District that is your 'nightmare' if a wildfire were to start? Yes ☐ No ☐

If yes, please describe:

Where? _____

Range: _____ Township: _____ Section: _____

Resources at risk? _____

Infrastructure? _____

Homes? _____

Hazard? _____

Ingress/egress issues? _____

Topography? _____

Lack of water within effective distance? _____

Comments: _____

Additional

If yes, please describe:

Where? _____

Range: _____ Township: _____ Section: _____

Resources at risk? _____

Infrastructure? _____

Homes? _____

Hazard? _____

Ingress/egress issues? _____

Topography? _____

Lack of water within effective distance? _____

Comments: _____

Central Sandhills Community Wildfire Protection Plan

Risk Assessment (continued)

Does the local Roads Department have equipment to assist the Fire District in case of emergencies?

Yes ☐ No ☐

If Yes, please describe? _____

Is there an area isolated from water sources that may hinder initial response? Yes ☐ No ☐

If Yes, please describe and distance by road (miles) to nearest water? _____

Do you know of an area(s) with a high density of homes, any infrastructure or other resources at high risk from wildfire? Yes ☐ No ☐

If Yes, please describe? _____

Are there subdivisions/areas with one-way in/out? Yes ☐ No ☐

If Yes, please describe? _____

Are there any bridges that won't support equipment weight? Yes ☐ No ☐

If Yes, please describe? _____

Any other comments or concerns if a wildfire were to start or head into your jurisdiction?

Potential Fuels Reduction Project Areas

Have you identified one or more areas for fuel hazard reduction projects? Yes ☐ No ☐

If yes, please describe

Location? _____

Range: _____ Township: _____ Section: _____

Current fuels? _____

Resources at risk? _____

Acres (if known)? _____

Additional

Location? _____

Range: _____ Township: _____ Section: _____

Current fuels? _____

Resources at risk? _____

Acres (if known)? _____

Central Sandhills Community Wildfire Protection Plan

Geographic Information System Data

Does your jurisdiction have GIS layer(s) that would show housing, infrastructure, bridge limits, hydrants and other water sources, etc...? Yes ☐ No ☐

If Yes, please describe/who we should contact to acquire the data?

Name: _____

Email: _____

Phone: _____

If no, please rank these data layers according to greatest need in your jurisdiction

_____ Housing

_____ Infrastructure

_____ Bridge limits

_____ Hydrants

_____ Other water sources

Is there anything else that you think we should know? _____

Thank you for providing this information.

Please return completed form to sbenson4@unl.edu or mail a hard copy to:

Nebraska Forest Service (Sandy Benson)

113 N. Woodward St. Suite A

Ainsworth, NE 69210

Central Sandhills Community Wildfire Protection Plan

Fire Department Survey Distribution List

Anselmo
Ansley
Arcadia (Parts of district are in Valley & Custer Counties)
Arnold (District includes parts of Custer, Lincoln, & Logan Counties)
Bartlett
Brewster
Broken Bow
Burwell
Callaway
Chambers (Part of district is in Wheeler Co.)
Comstock
Dunning
Eddyville (Part of district is in Custer Co.)
Ewing (Part of district is in Wheeler Co.)
Halsey
Loup Co.
Mason City
Merna
North Loup
Oconto (Part of district is in Custer Co.)
Ord
Purdum (Part of district is in Thomas & Blaine Counties)
Sargent
Scotia (Part of district is in Greeley Co.)
Spalding (Parts of district are in Greeley & Wheeler Counties)
Stapleton
Thedford (Parts of district are in Thomas and Blaine Counties)
Wolbach (Part of district is in Greeley Co.)

Appendix I

Public Engagement

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

Central Sandhills Community Wildfire Protection Plan

Outreach Documents

1. County Boards and Emergency Managers

(sent via e-mail 4/25/2018)

To: County Clerks and Emergency Managers

Subject line: Community Wildfire Protection Plan - Please respond!

My name is Sandy Benson and I am a forest fuels specialist with the Nebraska Forest Service (NFS). I work with communities and landowners in wildfire preparation efforts throughout the state. After the destructive fire season of 2012, the NFS began developing coordinated plans to help obtain funding for wildfire mitigation, improve communications and safety between local and state resources, and help communities understand the evolving role fire plays in Nebraska's landscape.

Developing a Community Wildfire Protection Plan (CWPP) is a transparent process that engages community members. The attached document explains the details of this process; however, we don't expect this to require any board action initially, beyond recommending steering committee members.

It is important, however, to have local officials aware of the planning process and be on board with it. Most county boards are pleased to find out that there is no cost to the counties associated with CWPP preparation. The primary reasons for having a CWPP are these:

- Create a wildfire-specific resource that coordinates with 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

PDF Attachment:

To: County Boards in the Central Sandhills Region

From: Sandy Benson, Nebraska Forest Service

The Nebraska Forest Service is in the early stages of preparing a **Community Wildfire Protection Plan (CWPP)** for the central sandhills region of Nebraska, which includes your county. This plan is a wildfire-specific resource that coordinates with local emergency plans and allows local fire departments, the Nebraska Forest Service, and others to apply for federal and state cost-share funds for vegetative fuels reduction and other hazard mitigation efforts within the CWPP region.

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 the community, measures necessary to mitigate those risks, and a plan of action to implement these measures.

The collaborative CWPP process is effective in improving 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 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, 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 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 and central Niobrara regions in 2014 and 2015, which enabled them to participate in cost-share programs. In 2016, we completed CWPPs for the Loess Canyons, Wildcat Hills, and Missouri River Northeast. Now we are preparing CWPPs for the 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

Central Sandhills Community Wildfire Protection Plan

- Establishes a collaborative relationship among entities BEFORE a fire occurs
- Develops a pre-attack plan to improve firefighter readiness and safety
- Documents planning and projects for successful grant applications

Community benefits

- Define planning boundaries that address local concerns
- Identify and prioritize areas for hazardous fuel reduction treatments
- Recommend treatment methods
- Influence how federal funds for projects on non-federal lands may be obtained
- 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 shouldering 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 be inviting 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, but it ensures local input and guidance for the planning process.

Please send steering committee recommendations to sbenson4@unl.edu or by calling Sandy Benson at 402-684-2290.

2. Fire Departments and Emergency Managers

(This was sent via e-mail during July, 2018. The survey in Appendix H was sent to fire departments on June 14, 2018.)

To: Central Sandhills Area Fire Departments and Emergency Managers
From: Sandy Benson, Forest Fuels Management Specialist, Nebraska Forest Service
Re: Community Wildfire Protection Plan

The Nebraska Forest Service is preparing a Community Wildfire Protection Plan (CWPP) for the Central Sandhills area, which includes most of the Region 26 Emergency Management Area, part of Lincoln County (Region 51), plus Logan and Custer Counties. A CWPP can help emergency responders effectively prepare for and manage wildfire and improve communication among the various agencies responding to wildfire. A CWPP may facilitate increased opportunities for individual landowners, counties, municipalities, and fire districts to seek grant funding for activities related to fire protection.

- 1) **The plan serves a broad area that extends beyond any individual county. It is part of a statewide network of Community Wildfire Protection Plans.** It provides readily-accessible information useful to emergency responders from outside of your county. The CWPP consolidates/relays critical information needed for responders in unfamiliar terrain. The CWPP is tailored by each county to include details that are vital to safe firefighting operations. In other CWPPs, this has included:
 - Bridge weight limits
 - Residential areas with ingress/egress issues
 - Infrastructure/utility issues, and other concerns such as staging areas
 - Equipment availability and locations, and emergency contact information.
- 2) **Having a CWPP in place makes individual landowners eligible to participate in vegetative fuels reduction projects.** These projects focus on protecting structures and emergency access routes and can include fuel breaks, firebreaks, and the removal of flammable eastern redcedar from woodlands. The cost share can offset up to 75% of the total cost of the work. In other parts of Nebraska this

Central Sandhills Community Wildfire Protection Plan

landowner cost share program has boosted the local economy by increasing the number of private contractors who do this work. Fuels reduction makes the firefighters' job easier when fighting fire in woody and brushy areas that have been cleared or thinned.

- 3) **Having a CWPP in place does not remove any control from local officials.** It does not obligate public officials, emergency managers, fire departments, or others to take any actions they do not deem to be in the best interests of their constituents. It is simply information for them to use, if they choose, when faced with wildfires that require a multiple county or agency response. Although the same tools are not used for every job, responders need to know all the resources that are at their disposal. There is no financial cost or obligation to the counties or fire departments.

Volunteer fire departments provide leadership and expertise in a wildfire situation. We ask that VFD personnel review the following information and provide feedback to help strengthen the CWPP.

The CWPP will include a fire mitigation plan for each county that will contain the following information:

- Community profile (description of area, roads, land use, location of at-risk areas)
- Wildfire risk assessment (fire history, fire hazard, protection capabilities and infrastructure)
- Structure analysis (fire risk rating and ignitability)
- 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 (see questionnaire)

Information about the following topics is instrumental in helping make the CWPP a useful tool:

- Ingress / egress routes and safe zones for citizens
- Structures and critical infrastructure (highways, cell towers, bridges, schools, etc.)
- Wildland urban interface (WUI) 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 the priorities listed here. All ideas are welcome. All suggestions will be included in a draft CWPP, which will be shared with the public. Everyone interested will have an opportunity to provide input before the document is finalized.

Questions may be directed to Sandy Benson, 402-684-2290. Please email your suggestions and comments to sbenson4@unl.edu or by mail to PO Box 369, Bassett, NE 68714.

3. Cities and Villages

(sent via e-mail 5/1/2018)

Subject line: Community Wildfire Protection Plan - Please respond!

The Nebraska Forest Service is in the early stages of preparing a Community Wildfire Protection Plan (CWPP) for the central sandhills region of Nebraska, which includes your community. This plan allows local fire departments, the Nebraska Forest Service, and others 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 establish a steering committee 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.

Please recommend individuals who may be willing 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.

Central Sandhills Community Wildfire Protection Plan

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 July 18, 2018:

Local input needed for community wildfire protection plan

Local counties are collaborating with the Nebraska Forest Service to create a Community Wildfire Protection Plan (CWPP) to effectively prepare for and manage wildfire and to improve communication among agencies that respond to wildfire in the central Sandhills. It is vital that everyone who works with land management, fire, and community preparedness has an opportunity to provide input.

The CWPP area includes all of Blaine, Garfield, Greeley, Logan, Loup, Thomas, Valley, and Wheeler Counties, most of Custer County, and the northeast corner of Lincoln 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 boundaries. 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 readily-accessible information useful to emergency responders from outside the area. The CWPP consolidates and relays critical information needed for responders in unfamiliar terrain. Each county can include details vital to protecting 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 and infrastructure)
- Structure analysis (fire risk rating and ignitability)
- Fuel reduction recommendations
- Emergency operations (responsibilities, capabilities, partners, mutual aid agreements)
- Recommendations for improving community preparedness
- Updated contact information and equipment lists for rural fire departments

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 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.

Central Sandhills Community Wildfire Protection Plan

Flyers Posted

On July 18, 2018 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

402-684-2290

sbenson4@unl.edu



Central Sandhills Community Wildfire Protection Plan

Online Outreach

A CWPP planning page was added to the NFS website: <https://nfs.unl.edu/community-wildfire-protection-plan> on November 26, 2018.

A Nebraska CWPP Facebook page was created: <https://www.facebook.com/groups/451134565293952/> on November 15, 2018.

Stakeholders List

Fire Districts	County Boards	Municipalities
Anselmo	Blaine	Anselmo
Ansley	Custer	Ansley
Arcadia	Garfield	Arcadia
Arnold	Greeley	Arnold
Bartlett	Lincoln	Bartlett
Brewster	Logan	Berwyn
Broken Bow	Loup	Broken Bow
Burwell	Thomas	Burwell
Callaway	Valley	Callaway
Chambers	Wheeler	Comstock
Comstock		Dunning
Dunning	Natural Resources Districts	Elyria
Eddyville	Central Platte NRD	Ericson
Ewing	Lower Loup NRD	Gandy
Greeley	Twin Platte NRD	Greeley Center
Halsey	Upper Loup NRD	Halsey
Loup County		Mason City
Mason City	State Agencies	Merna
Merna	Nebraska Game and Parks Commission	North Loup
North Loup	Nebraska Forest Service	Oconto
Oconto	Nebraska State Fire Marshal's Office	Ord
Ord	Board of Educational Lands and Funds	Sargent
Purdum		Spalding
Sargent	Federal Agencies	Stapleton
Scotia	USFS - Halsey	Taylor
Spalding	NRCS - Grand Island, North Platte, Ord, Thedford	Thedford
Stapleton	BLM – Casper, WY Dist. Office handles all Nebraska	Wolbach
Thedford	FSA – Broken Bow, North Platte, Ord, St. Paul	
Wheeler County		
Wolbach	501(c)3 Organizations & Other NGOs	State Legislators
	Pheasants Forever	District 36
Emergency Mgmt.		District 41
Local & State	Prescribed Fire Associations	District 42
Region 26	Custer Burn Association	District 43
Region 51		
Custer County	Homeowner Associations	Federal Legislators
Logan County	Ericson Lake Corporation	Sen. Deb Fischer
Valley County		Sen. Ben Sasse
NEMA		Rep. Adrian Smith (Dist. 3)

Appendix J

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

Central Sandhills Community Wildfire Protection Plan

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/>

Central Sandhills Community Wildfire Protection Plan

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.

Central Sandhills Community Wildfire Protection Plan

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.

Central Sandhills Community Wildfire Protection Plan

Firewise Plants for Nebraska

Perennials & Groundcovers

Bergenia
Blanket flower, *Gaillardia*
Bugleweed, *Ajuga*
Candytuft, *Iberis*
Catmint, *Nepeta*
Coneflowers, *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*
Snow-in-summer, *Cerastium*
Violets, *Viola*
Virginia creeper, *Parthenocissus*
Wild ginger, *Asarum*
Wild strawberry, *Fragaria*
Yarrow, *Achillea*

Shrubs

Buffaloberry, *Shepherdia*
Cherry and plum, *Prunus*
Cinquefoil, *Potentilla*
Coralberry, snowberry, *Symphoricarpos*
Cotoneaster
Currant and gooseberry, *Ribes*
Dogwood, *Cornus*
Lilac, *Syringa*
Mahonia
Mock orange, *Philadelphus*
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*

It's always a good idea to consult with a local natural resources professional for specific local plant recommendations.

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