FINAL ENVIRONMENTAL ASSESSMENT

CAMPBELL COUNTY WIND FARM

CAMPBELL COUNTY, SOUTH DAKOTA DOE/EA 1955

June, 2015

Prepared by: Western Area Power Administration
Upper Great Plains Region

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Acronyms

AGL	Above Ground Level
AIRFA	American Indian Religious Freedom Act
APE	Area of Potential Effect
BBCS	Bird and Bat Conservation Strategy
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
BMP	Best Management Practice
CCWF	Campbell County Wind Farm
CFR	Code of Federal Regulations
CRP	Conservation Reserve Program
CWA	Clean Water Act
dBA	Decibels
DENR	Department of Environment and Natural Resources
DOE	Department of Energy
EMF	Electromagnetic Field
EO	Executive Order

Acronyms

EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FHA	Federal Highway Administration
FPPA	Farmland Protection Policy Act
FR	Federal Register
FSA	Farm Service Agency
GAP	Gap Analysis Program
GPS	Global Positioning System
kV	Kilovolt
Ldn	Average Sound Level
MBTA	Migratory Bird Treaty Act
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHD	National Hydrography Datasets
NHPA	National Historic Preservation Act
NLCD	National Land Cover Database
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
O&M	Operations and Maintenance
ONAC	Office of Noise Abatement and Control
ROW	Right of Way
RSA	Rotor Sweep Area
SDBWG	South Dakota Bat Working Group
SDGFP	South Dakota Game Fish and Parks
SHPO	State Historical Preservation Office
SRST	Standing Rock Sioux Tribe
SSURGO	Soil Survey Geographic Database
TCP	Traditional Cultural Property
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WUS	Waters of the United States

1.0 Introduction

The Campbell County Wind Farm (CCWF) is a 99 megawatt (MW) wind generation Project being proposed by Dakota Plains Energy, Inc. for the area around Pollock, SD. The proposed Project would be wholly located in Campbell County, South Dakota and would supply up to 99 MW of clean energy to the Upper Great Plains region through an existing US Department of Energy, Western Area Power Administration (Western) 230 kilovolt (kV) transmission line**.** (see Figure 1.0-1) The power generated by the CCWF would be sold locally and distributed to private and commercial end-users throughout the Upper Great Plains region.

The proposed interconnection is a federal action under the National Environmental Policy Act (NEPA), Section 102(2) (1969), the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 CFR Parts 1500-1508), DOE NEPA Implementing Procedures (10 CFR Part 1021), and other applicable regulations. This Environmental Assessment (EA) was prepared by Western under these regulations to describe the analysis of environmental effects of the federal action, the proposed Project and alternatives, including the No-Action Alternative.

2.0 Purpose and Need

Under NEPA, the purpose and need for a proposed action help define the range of alternatives considered. Only "reasonable" alternatives need be considered (40 CFR 1502.14(A)), and reasonable alternatives must accomplish the underlying purpose and need of the applicant or the public that would be satisfied by the proposed federal action (33 CFR Ch. II, NEPA Deskbook p 138). Consequently, it is important to understand the purpose and need for the Project from the perspective of both the applicant and Western as the NEPA lead agency.

2.1 Applicant's Purpose and Need

The demand for new sources of electricity in the Upper Great Plains region continues to grow. The regional service area (Figure 2.1-1) includes western North Dakota and Eastern Montana, which have experienced explosive growth in recent years due to the development of the Bakken oil formation. (Figure 2.1-2) The United States Geological Service estimates recoverable oil reserves in the Bakken formation of more than 7.4 billion barrels. Full development of the oil recovery Projects is expected to take 20-30 years and will result in continued growth in the region and an increasing demand for electricity for residential and commercial customers.

A study conducted by North Dakota State University (Population Estimates for the City of Williston - Nancy M Hodur and Dean A. Bangslund February 26, 2012) concluded that oilfield related employment in the Williston, ND area will exceed 53,000 individuals by 2020. The research team also estimated that for every new job created, a new housing unit will be created.

Figure 2.1-1 – Upper Great Plains Region

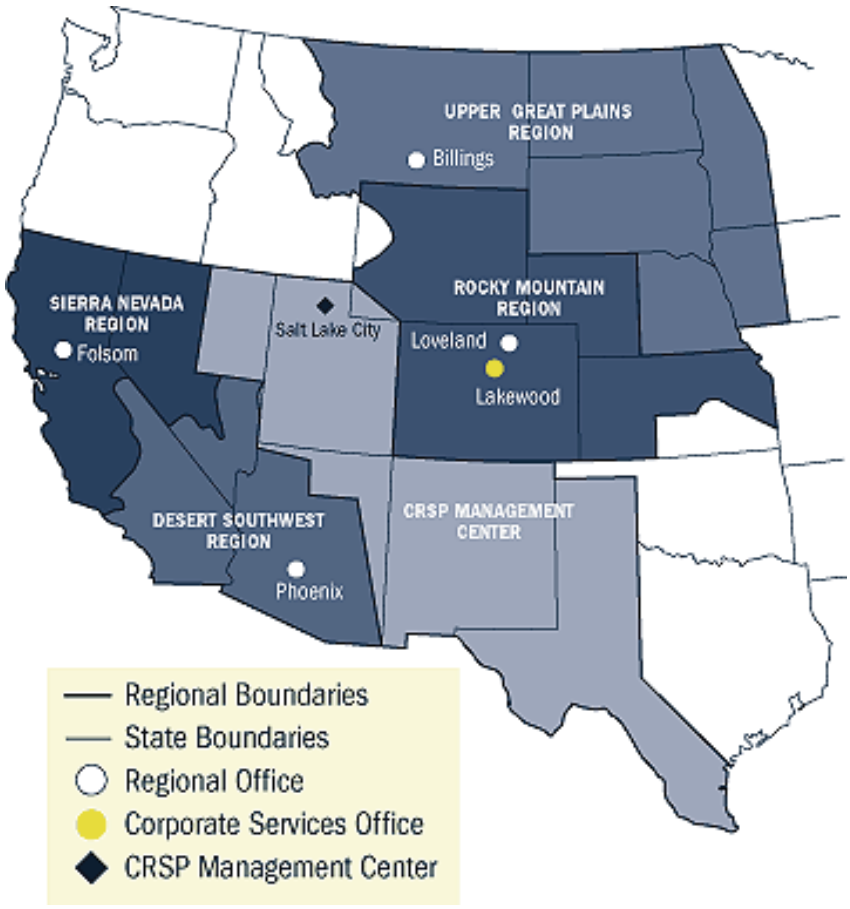
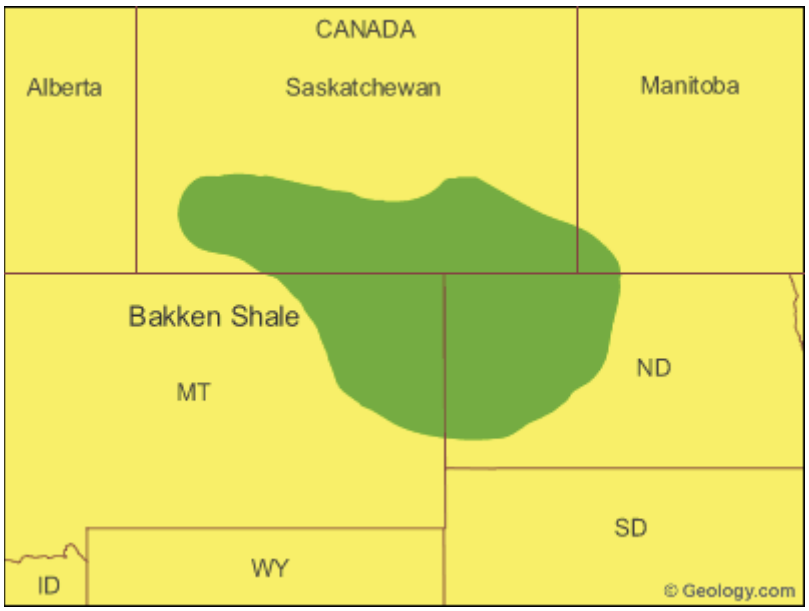


Figure 2.1-2 – Bakken Shale Oil Field



The Campbell County Wind Farm (CCWF) would play an important role in fulfilling the regional energy demands noted above. CCWF would provide 99 MW of renewable electrical energy to both public and private sector end users, contributing to regional growth and energy stability.

2.2 Agency Purpose and Need

Campbell County Wind requests to interconnect its proposed Project with Western's Bismarck to Glenham 230 kV transmission line. Western's purpose and need is to consider and respond to the interconnection request in accordance with its Open Access Transmission Service Tariff (Tariff) and the Federal Power Act. Western's Tariff is filed with the Federal Energy Regulatory Commission (FERC) for approval.

Under the Tariff, Western offers capacity on its transmission system to deliver electricity when capacity is available. The Tariff also contains terms for processing requests for the interconnection of generation facilities to Western's transmission system. In reviewing interconnection requests, Western must ensure that existing reliability and service is not degraded. Western's Tariff provides for transmission and system studies to ensure that system reliability and service to existing customers are not adversely affected by new interconnections. These studies also identify system upgrades or additions necessary to accommodate the proposed Project and address whether the upgrades/additions are within the Project scope.

2.3 Required Permits and Approvals

Federal, State and local agencies, including Western, have jurisdiction over certain aspects of the proposed action. Table 1.2-1 provides a listing of agencies and their respective permit and approval responsibilities with respect to the proposed Campbell County Wind Farm.

Table 2.3-1 Permit/Authorizing Responsibilities

Authorizing Action/Statute	Responsible Agency
Interconnection Service Agreement	Western
Easement Grants and Road Crossing Permits	SDDOT, Campbell County
National Environmental Policy Act	Western
National Historical Preservation Act	South Dakota State Historical Preservation Officer (SDSHPO), Western
Native American Graves Protection and Repatriation Act	Western
American Indian Religious Freedom Act	Western
Migratory Bird Treaty Act	US Fish and Wildlife Service (USFWS), Western
Bald and Golden Eagle Protection Act	US Fish and Wildlife Service (USFWS), Western
Endangered Species Act	USFWS, South Dakota Department of Environment and Natural Resources (SDDENR) Western
Construction Storm Water Permit	SDDENR
Clean Water Act Compliance	U.S. Army Corps of Engineers
Occupational Safety and Health Act	South Dakota Department of Labor, Occupational Safety and Health Administration (OSHA)
Tower Lighting	Federal Aviation Administration (FAA)

2.4 Public Participation

On March 12, 2013, a public scoping meeting was held in Pollock, S.D. where Project details were laid out to interested parties as well as Project participants. The meeting was attended by Western personnel, Campbell County Wind Farm (Developer) and Fagen Engineering LLC, the Project environmental consultant. The Project was received favorably by all attendees. No official public comments were received.

3.0 Description of Proposed Action and No Action Alternative

3.1 Proposed Action

Western's proposed action is to execute an interconnection agreement with Campbell County Wind Farm (CCWF) to allow the Project to connect to Western's Bismarck to Glenham 230 kV transmission line. The Project would be located on primarily agricultural land near the communities of Pollock and Herreid, South Dakota. The proposed Project would consist of the following components:

- Fifty five (55) 1.715-103 GE turbines
- Approximately 14.3 miles of access roads
- Approximately 32.5 miles of collection and transmission Lines
- Collection Substation
- 0.25 mile long 230 kV transmission line from CCWF substation to Western's switchyard
- Office/Maintenance Building

All facilities would be constructed in conformance with applicable laws, regulations and standards. The following sections provide specific details relating to Project components, pre-construction planning, and construction activities associated with each.

3.1.1 Preconstruction Planning

Preconstruction activities include site surveys and studies, regulatory reviews and consultations, landowner agreements, engineering design, turbine micro-siting and configuring proposed Project facilities.

3.1.2 Preconstruction Surveys and Studies

Preconstruction surveys were conducted to evaluate potential environmental impacts related to the proposed Project. These surveys included:

- Meteorological surveys were conducted for 4 years to determine the characteristics of the wind resource in the Project vicinity. The results of these studies were used to ensure Project feasibility and determine the most efficient locations for the wind turbines.

- A Class I Cultural Resources study (records review) and Traditional Cultural Property (TCP) survey were conducted to evaluate and document the presence or absence of historical resources with respect to the Project.

- A Class III Cultural Resources survey (intensive cultural resources inventory survey) was conducted on all Project areas that may be disturbed during construction and operational activities. The locations of all facilities would be adjusted to avoid cultural or historical resources identified by the TCP and Cultural Resources surveys.

- Wetlands surveys were completed for the Project to determine the presence of jurisdictional and non-jurisdictional wetlands in the Project area. The locations of the facilities would be adjusted to avoid and minimize wetland impacts.

- Grassland surveys were completed for the Project to determine the presence of native grasslands in the Project area. The locations of the facilities would be adjusted to avoid and minimize grassland impacts whenever possible.

- Sharp-tail grouse lek surveys were completed for the Project to determine the presence of sharp-tail grouse leks in the Project area. The locations of the facilities would be adjusted to provide a one mile buffer from any identified sharp-tail grouse leks or nests.

- Wildlife surveys were completed in the vicinity of the Project. These surveys were designed to document wildlife use on the Project site and included avian use and raptor nest surveys. The purpose of the surveys was to ensure that the Project would not be located in an area used extensively by sensitive wildlife species.

3.1.3 Landowner Agreements

The Project developers entered into agreements with landowners in order to secure rights and access to the properties for surveys, testing, construction, operation and maintenance of the Project components. These agreements were developed in consideration of landowner concerns, and include compensation for disturbance and loss of farming access during Project construction, operation and maintenance.

3.1.4 Access Roads and Turbine Pads

Staging and construction activities associated with the Project would require construction of temporary and permanent access roads, along with permanent aprons around the turbine pads. Gravel would be used in construction of most of the roads and aprons to allow for travel and access under all weather conditions. Gravel would be sourced locally from a supplier that is in compliance with South Dakota Department of Transportation requirements for cultural resources clearance.

Table 3.1.4-1 Campbell County Wind Farm Summary of Disturbances

Component	Construction Phase (Temporary)	Operations Phase (Permanent)
Turbines	160' radius around turbine (102 acres)	15' radius around turbine base (1 acre)
Transformers	Area lies within turbine construction area.	6' by 6'
Access Roads	14.3 miles @ 35' wide 61 acres	14.3 miles @ 16' wide (27.7 acres)
Underground Collection System	32.5 miles 30' disturbance corridor 118 acres	Disturbance returned to pre-construction condition. No permanent impact.
Substation & Switchyard	12 acres	12 acres
Laydown Area	7 acres	
O&M Building	10 acres	10 acres

3.2 Proposed Facilities

Project facilities would consist of the following components and are described sequentially from the wind farm to the point of interconnection with Western's transmission line.

- Wind Turbines – Turbines would be used to convert wind energy into electrical energy.
- Access Roads – Gravel roads would be installed to provide access to each turbine location for construction, operation and maintenance activities.
- Electrical Collection System (underground) – The underground sub-transmission lines would be used to transmit electricity from each wind turbine transformer to the electrical collection substation.
- Electrical Collection Substation – The collection substation would be used to step-up the collection voltage to 230 kV for interconnection to Western's 230 kV Transmission Line.
- CCWF 230 kV Transmission Line – The CCWF transmission line would be used to transfer electrical energy from the CCWF substation to the Western switchyard approximately 0.25 miles away.

- Western Area Power Administration Switchyard – The switchyard equipment would provide for interconnection with Western's 230 kV Transmission line

- Laydown Yard – The laydown yard would be used for temporary storage of construction materials and equipment.

- Operations and Maintenance Building – The O&M building would house offices, maintenance equipment and spare parts.

The following criteria were considered by Campbell County Wind Farm during Project planning:

- Establish a one thousand foot radius around turbine locations with respect to residences and other public occupancies for the purposes of safety, noise, vibration and shadow flicker.

- Avoid and minimize impacts to avian species through avoidance of high use areas relative to surrounding areas.

- Avoid unnecessary wetland disturbances, including 50-foot buffer from all wetlands not previously converted to agricultural use.

- Avoid cultural and historic resources.

- Comply with permits and applicable Federal, State and local regulations.

3.2.1 Access Roads

New roads would be constructed and existing roads upgraded prior to installation of the proposed facilities. Roads would be used to move equipment, personnel, and materials during construction, operation, and maintenance of the Project. Heavy equipment related to the construction phase would gain access to the Project site via U.S. Highways 12 and/or 83 and subsequently onto paved and unpaved county roads.

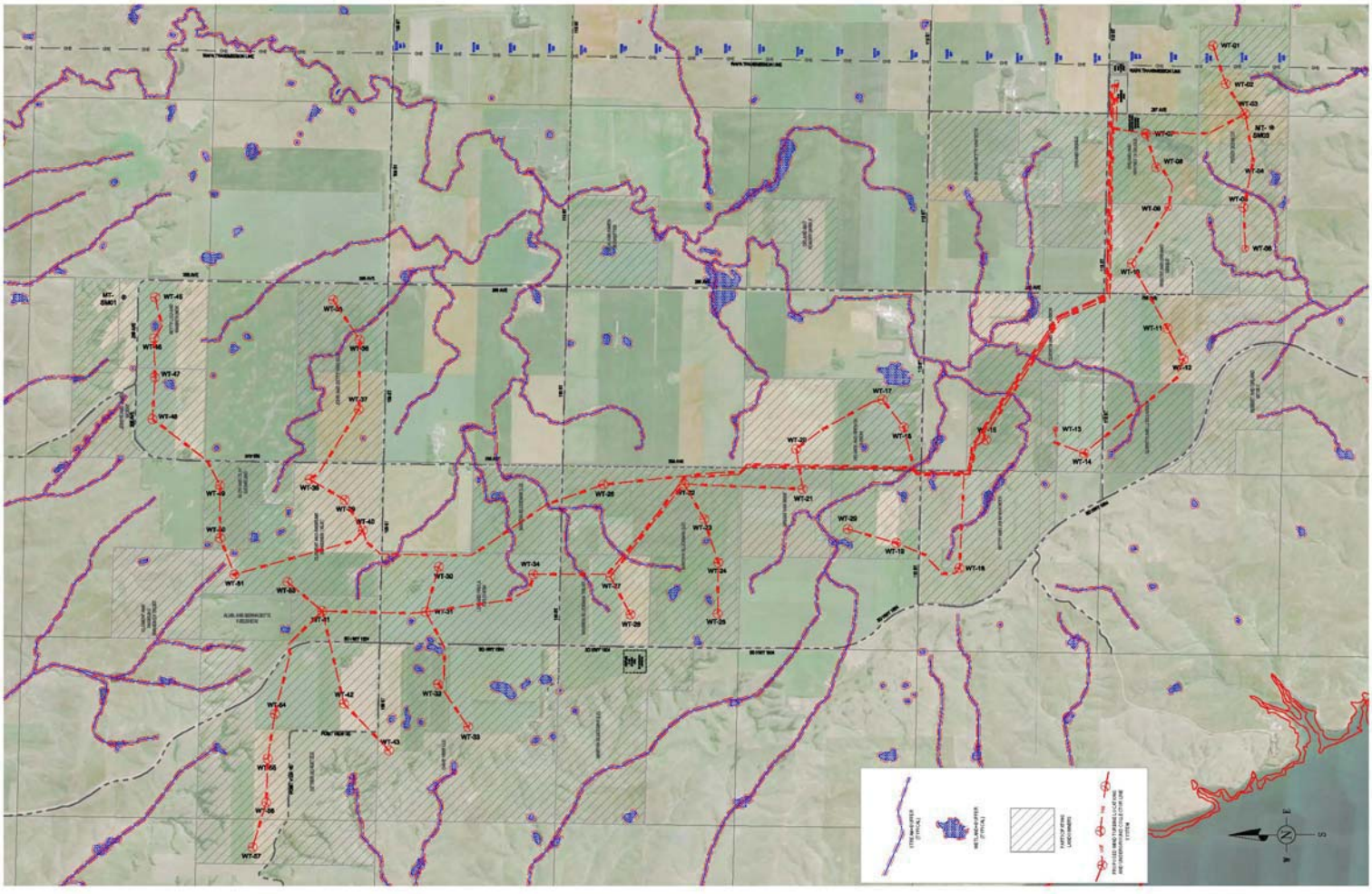
New access roads serving all facilities associated with the Project would be constructed from existing street and avenue routes. Topsoil would be salvaged from road areas and replaced on roadside slopes and other associated areas following construction to provide a reclaimed growth medium. All access roads would be constructed in association with the wind turbines, laydown area and substation. No new access roads are required for the collector or transmission lines.

Roads serving the turbines would be graded and compacted during construction to allow passage of heavy equipment and large materials. After construction the roads would have a permanent width of 16 feet. The length of new and upgraded roads to access the proposed 55 turbines is approximately 14.3 miles.

3.2.2 Wind Turbines

The Project would include construction of 55 wind turbines that would be constructed between the 2nd quarter of 2015 and the 4th quarter of 2016 and put into operation concurrent with construction. The proposed turbine arrangement can be seen in Figure 3.2.2-1. The turbines would have a hub height of 80 meters and a rotor diameter of 103 meters. The bottom of the swept area above the ground would be approximately 30 meters. These heights are established to allow the turbines to take advantage of more consistent and less turbulent winds.

Figure 3.2.2-1 GE 1.715-103 Proposed Turbine Arrangement



3.2.2.1 Site Preparation

Site preparation activities are the first step in the construction process. Site preparation activities include surveying, clearing, grubbing, excavating and constructing turbine foundations.

An area approximately 1.8 acres of ground would be cleared with a bulldozer or road grader and excavated with a backhoe to prepare each concrete foundation. Excess excavated material would be used for road construction or otherwise disposed of in accordance with applicable regulations and permit conditions. A hole would be dug at each turbine site to accommodate a foundation 56.5 feet in diameter and 9 feet deep. An aluminum tube and bolt cage would be installed inside each excavation and each foundation would be finished with approximately 350 cubic yards of concrete. Concrete spoil would be disposed of offsite by the contractor. Once cured, the foundation would be complete and ready to receive the turbine base.

3.2.2.2 Delivery and Access

Major wind turbine components (including rotor assemblies, towers, power cables and transformers) would be delivered to the site by tractor-trailers on existing access roads. A 500 foot wide construction easement would extend along each turbine access road and turbine foundation allowing for rotor assembly, installation of underground and aboveground electrical facilities, and access road construction.

3.2.2.3 Structural

Turbine and tower assembly and erection of the towers onto the turbine foundations would be completed during this task. This work would also include installation of all mechanical and electrical systems associated with the turbines.

3.2.2.4 Testing

The testing period would commence well into the proposed Project, typically following completion of the substation and the first mechanically complete turbine. This phase would include all the testing required for the Project to become commercially operational. Incrementally, this process would entail energizing the collection substation and bringing each turbine online until the commercial operation date.

3.2.2.5 Restoration and Final Project Completion

The final task in the construction process would entail site restoration and cleanup of all Project disturbances. Areas of permanent disturbance at each turbine would include those areas occupied by turbines and access roads. Areas temporarily disturbed during construction would be restored to pre-construction conditions.

3.2.2.6 Operation and Maintenance

The Project would be supported by one full time site manager and a contract maintenance crew during normal business hours. Maintenance activities would occur periodically throughout the year and involve vehicular traffic along the turbine access roads as well as periodic travel to the substation. Equipment to be stored at the CCWF laydown yard and used at the Project for operation and maintenance would include the following:

- Two service trucks
- One payloader that can be used for road repairs and snow removal
- One forklift

To facilitate site operation and maintenance, Project access roads would be graded as necessary. Maintenance activities would be limited to areas accessible by these roads.

Routine maintenance schedules for turbines would be determined by the manufacturer, but would typically include removing the turbine rotor, replacing generators and bearings and servicing parts within the turbine nacelle.

3.2.3 Collection System

An underground 34.5 kV collection system would be used to transmit electricity from each turbine location to the Project substation. The Project substation would be located near the southeast Project boundary. Proposed underground collection line routes and substation location are shown in Figures 3.2.3-1 and 3.2.3-2. Individual wind turbine transformers would be contained within the turbine nacelles and all collection lines would be placed in underground trenches to minimize ongoing aboveground impacts, eliminate exposure to weather and mitigate visual impacts.

Figure 3.2.3-1 Campbell County Wind Farm Substation Location

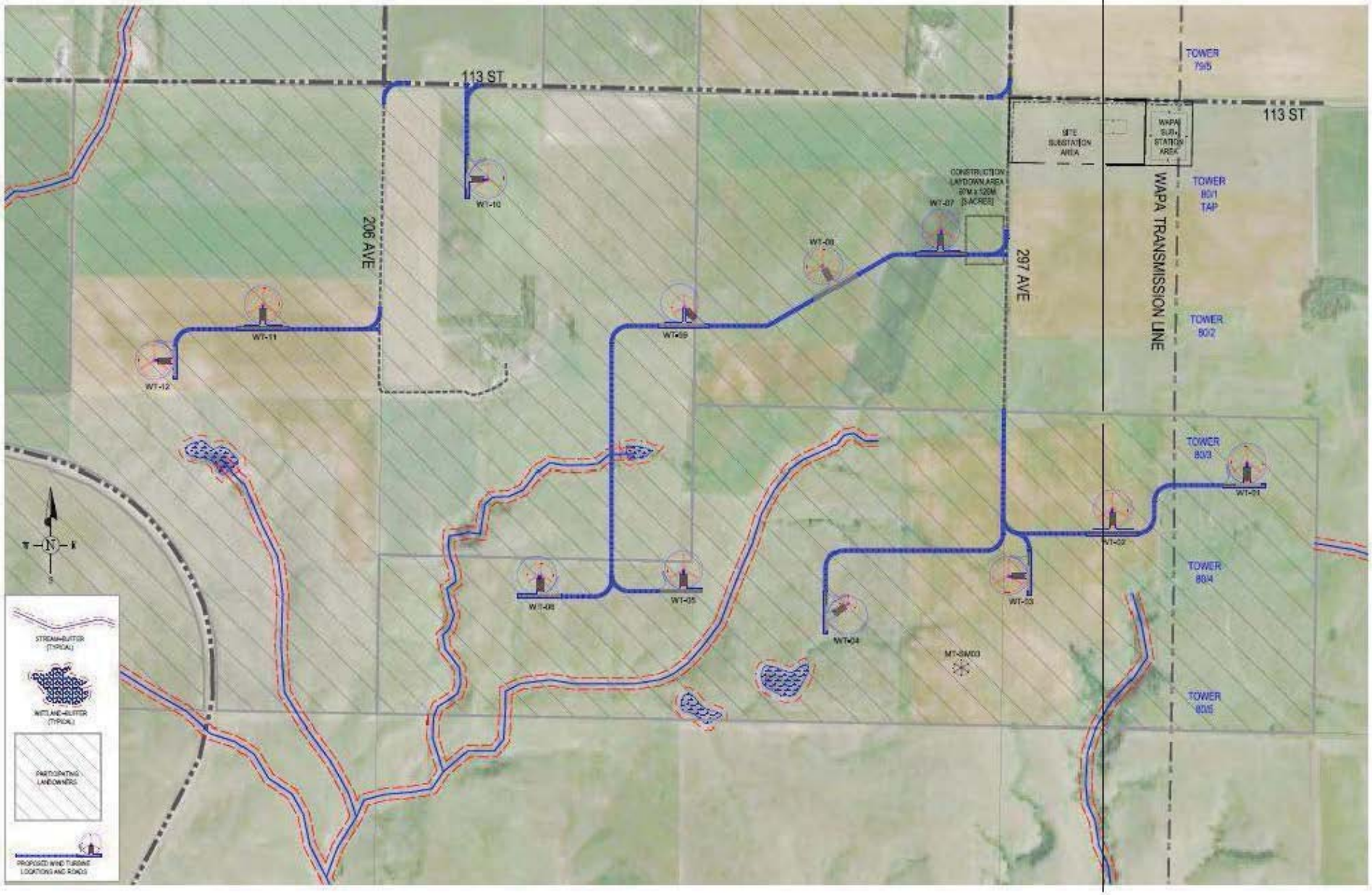
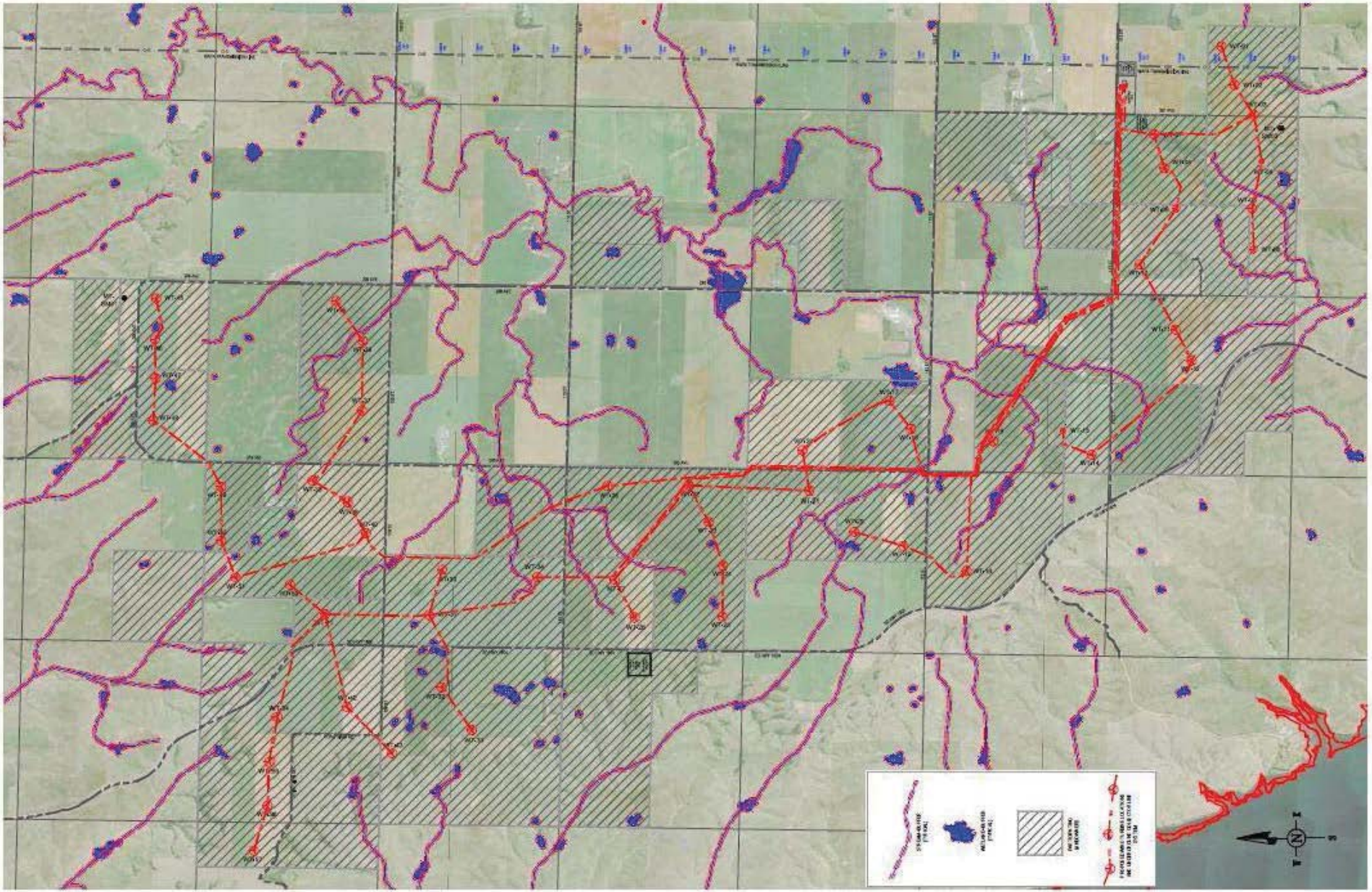


Figure 3.2.3-2 Campbell County Wind Farm Collection Line Map



The Project would connect to Western's 230 kV transmission line with a new 0.25 mile overhead transmission line.

3.2.3.1 Construction

Underground Collection Lines

Approximately 32.5 miles of collection lines would be installed to transmit electrical energy from the individual turbine locations to the Project substation. The collection line cables would be buried at a depth of 42 to 54 inches (nominal depth 48 inches). Trenches are anticipated to be approximately 24 inches wide and 48 inches deep and would generally follow access roads to the extent practicable.

Trenches would be excavated using both a trencher and backhoe. Disturbance associated with all buried collection lines would be confined to a 30' wide construction corridor. Upon completion, all trenches would be filled with compacted material and associated disturbances would be restored to natural contours and vegetative cover. Aboveground utility warning markers would be installed at appropriate intervals along the collection line route.

Overhead Transmission Line

A 230 kV electrical transmission line would be constructed to transfer power from the CCWF substation to the Western switchyard. Wooden poles 90' tall would be set into ground using an industrial auger. Power lines would be supported on an H-frame construction using 795 ACSR conductors. Line stringing and tensioning would be facilitated by specialized trucks and equipment. The exact route for this line has not yet been determined.

3.2.3.2 Operation and Maintenance

Underground Collection Line

Periodic maintenance of underground collection lines would be required during the life of the Project. Maintenance activities are permitted under the landowner agreements and would be conducted within the established easement. Maintenance disturbances would be limited to the 30 foot wide construction corridor. All trenches would be filled with compacted materials and associated disturbances would be restored to natural contours and vegetative cover.

Underground collection lines are relatively maintenance free and maintenance would be conducted on them on an as-needed basis only.

Overhead Transmission Line

A 230 kV electrical transmission line would be constructed to transfer power from the CCW substation to the Western switchyard. Wooden poles 90 feet tall would be set into

ground using an industrial auger. Power lines would be supported on an H-frame construction using 795 ACSR conductors. Line stringing and tensioning would be facilitated by specialized trucks and equipment. The exact route for this line has not yet been determined.

Periodic maintenance of overhead transmission lines would be required during the life of the Project. Maintenance activities are permitted under the landowner agreements and would be conducted within the established easement. Typical maintenance tasks include, but are not limited to, periodic inspections, structure and hardware replacement, and line maintenance activities.

3.2.4 Collection Substation

An electrical collection substation would be constructed to facilitate collection and transfer of Project energy into the Western transmission system. The substation would be owned by CCWF and designed and built in compliance with federal, state, and local regulations, and prudent industry practices.

The substation would step-up electric power from the wind turbines from 34.5 kV to 230 kV to match Western's transmission line voltage. All Supervisory Control And Data Acquisition (SCADA) programming and communications would follow the requirements of Western's Large Generator Interconnection Agreement (LGIA).

The substation would have a gravel base and would contain circuit breakers, transformers, switches, lightning protection, grounding wires, a control building and emergency lighting system and structures. The substation would be fenced with a 6 foot chain link fence topped with barbed wire.

3.2.4.1 Construction

The location of the substation would be surveyed, cleared and graded prior to construction in order to allow for proper equipment configuration and support and provide adequate storm water drainage and erosion control. The site would be gravel covered and leveled prior to construction of surface equipment.

Substation equipment would be delivered via truck and installed on concrete foundations. All power transformers would be installed within secondary containment for spill prevention in accordance with Spill Prevention, Control, and Countermeasures (SPCC) regulations.

3.2.4.2 Operation and Maintenance

The collection substation would be maintained by Project personnel throughout the year. Some facility circuit breakers would contain sulfur hexafluoride (SF6), a regulated greenhouse gas. These would be sealed units and the facility would be scanned for detection of leaks and repairs made, as necessary. During use, the equipment would be

monitored periodically during substation inspections for indications of leakage. In the event that the SF6 gas must be removed from circuit breakers for maintenance purposes, it would be transferred into sealed gas containment equipment.

3.2.5 Laydown Yard/Operations and Maintenance Building

An approximately 7-acre parcel of cultivated land would be cleared and leveled for use as a laydown area during the construction phase of the Project. The laydown yard would serve as a temporary storage area for construction equipment and supplies.

Following construction completion the laydown yard would be removed, topsoil would be replaced and natural contours restored.

The Operations and Maintenance (O&M) building would be constructed on a 10-acre parcel of land centrally located within the Project boundaries. A steel frame building would be constructed on a concrete slab to serve as an operations office and maintenance building. Along with typical office furniture and equipment, the building would house specialized tools, oils and greases, and spare parts for the GE wind turbines and the collection substation. The O&M building would also house a forklift for moving heavy equipment.

3.2.5.1 Construction

The site of the O&M building would be cleared and graded prior to construction. Final site grading would allow for storm water runoff and erosion control. The steel frame building would be built on a concrete pad and all contained petroleum products would be stored within secondary containment. Soil stabilization would be provided via a graveled surface and vegetated buffers.

3.3 Reclamation And Restoration

Following completion of construction activities, areas not utilized for permanent facilities would be reclaimed for their prior land use. Reclamation would initially consist of restoring natural surface contours and drainage patterns to disturbed areas. Grading would include removal of any temporary crossing or drainage control structures.

Following grading, salvaged topsoil would be spread to match contours of adjacent areas. Soil that has been compacted by equipment operation would be tilled to alleviate compaction and prepare a seed bed. Where natural regrowth of vegetation is not anticipated, disturbed areas would be reseeded in accordance with landowner agreements or with native species.

Trees greater than 6 inches in diameter at breast height removed during construction operations would be replaced within the Project area with saplings at a 3:1 ratio. Noxious weeds would be controlled in accordance with state regulations. Pesticides or herbicides would be used in accordance with label specification and would not be used near aquatic

systems without SDDENR approval. Where possible, farming activities would resume in those areas temporarily disrupted by the construction of the CCWF. In the event farmable land is lost due to Project construction, landowners would be compensated monetarily by CCWF.

3.4 Permits And Compliance Standards

Prior to construction, CCWF would ensure compliance with all applicable federal, state and local environmental permits. Applicable permits include, but are not limited to, those listed in Table 2.6-1 below.

Table 3.4-1 Environmental Permits and Approvals

Permit/Approval	Issuing Agency/Entity
Section 404 Clean Water Act – Nationwide Permits 12 and/or 33 (wetlands disturbance)	US Army Corps of Engineers (USACE)
Spill Prevention Control and Countermeasure Plan (SPCC)	Environmental Protection Agency (EPA) and South Dakota Department of Environment and Natural Resources (SDDENR)
Construction Storm Water Permit and Storm Water Pollution Prevention Plan (SWPPP)	EPA, SDDENR
National Historic Preservation Act	South Dakota State Historic Preservation Office
Native American Graves Protection and Repatriation Act	Affected Western Tribes in Region
Highway Crossing and Hauling Permits	South Dakota Department of Transportation
Zoning, Conditional Use Permit/Approval	Campbell County, Local Townships

3.5 Environmental Protection Measures

The Project would comply with the provisions defined in Western's *Construction Standard 13, Environmental Quality Protection.* The Project would also comply with the guidelines in the Avian Power Line Interaction Committee's (APLIC) *Suggested Practices for Raptor Protection on Power Lines* in the design of the overhead portion of the 230 kV transmission line connecting the CCWF substation to Western's switchyard.

In addition to the above-mentioned guidelines, CCWF would minimize environmental impacts related to construction and operation of the wind farm. Minimization efforts would include the following:

- Unless otherwise permitted or approved, CCWF would avoid all sensitive areas and resources during siting, construction, maintenance and operations.

- CCWF would consult with interested tribes to develop additional measures to protect TCPs, such as protective easements, in agreement with underlying landowners.

- Construction crews would use silt fencing, straw bales, and ditch blocks during access road construction and electrical line trenching on sloped ground or at ephemeral drainage crossings within the Project area to further minimize erosion and related environmental impacts.

- Security lighting for on-ground facilities and equipment would be down-shielded to keep light within the boundaries of the site. This would minimize attracting night-migrating birds to the substation or turbine locations.

- The overhead 230 kV transmission line linking the CCWF substation and the Western switchyard would be marked with state-of-the-art line marking devices to minimize bird collisions.

- Develop and implement a bird and bat conservation plan in cooperation with the US Fish and Wildlife Service, the South Dakota Game, Fish and Parks, and Western.

- Introduction of noxious weeds would be mitigated through prompt revegetation with native species or restoration of prior land use.

- Wetlands would be marked on construction site drawings to avoid unintended impacts during construction.

3.5.1 No Action Alternative

Not executing the interconnection agreement is the no action alternative. Under the no action alternative, Western would not approve an interconnection agreement to its transmission system. If this alternative is chosen, the Project would not contribute 99 MW of renewable energy to the state's renewable portfolio. Environmental conditions within the Project Area, as described in Section 3.0, would be expected to persist in their existing state.

4.0 Affected Environment and Potential Environmental Consequences

This section provides a description of the affected environment and the potential environmental consequences of constructing and operating the Project (see Figure 4.1-1).

The critical elements of the human environment evaluated in this assessment include the following:

- ❖ Land Use
- ❖ Air Resources
- ❖ Water Resources

- Vegetation
- Wetlands
- Wildlife
- Cultural Resources
- Special Status Species
- Visual Resources/Aesthetics
- Noise
- Socioeconomics
- Environmental Justice
- Human Health and Safety
- Native American Religions Concerns

4.1 Land Use

4.1.1 Affected Environment

General Land Use

The Project area encompasses approximately 8000 acres along the east side of Lake Oahe. Roads, trails, signs, windbreaks, fences, homesteads, and agricultural activities are some of the common human features of the landscape. Typical structures in the Project area are residences and farm buildings. Nearby communities include Herreid, Mound City, Pollock and Mobridge. This analysis classifies land within the Project area as: crop land, grassland, wetland, Conservation Reserve Program (CRP) land, or farm/homestead.

- Crop land is characterized by active cultivation of crops such as corn, beans, wheat, alfalfa or sunflowers. Parcels identified as being in the process of cultivation, planting, active growing or harvesting were included in this category.

- Grassland includes lands not characterized as cropland, and includes native prairie grassland and planted grassland used as pasture for livestock.

- Wetland includes those areas observed to be either saturated or populated with wetland vegetation.. Many wetlands listed in the Project area have been cultivated or are man-made (excavated or impounded) ponds for livestock.

- CRP land includes those parcels enrolled in the CRP and on file with the USDA Farm Service Agency.

- Farm/homestead includes parcels containing residences and/or agricultural buildings. Many of the mapped parcels were once inhabited and are now vacant.

Table 4.1.1-1 Pre-Development Land Use Summary

Land Use	Acres	Percent
Crop Land	4879.1	61%
Grass Land	2600.5	32%
CRP Land	312.9	4%
Farm/Homestead	155.0	2%
Wet Land	66.4	1%
Totals	8013.8	100%

Important Farmland, Prime Forestland, and Prime Rangeland

Congress enacted the Farmland Protection Policy Act (FPPA) to implement programs and policies to protect farmland and combat urban sprawl and the waste of energy and resources that accompanies sprawling development. This act resulted in creating a farmland use classification system which includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. Projects are subject to FPPA requirements if they may irreversibly convert farmland to nonagricultural use and are completed by a federal agency or with assistance from a federal agency. The FPPA does not authorize the federal government to regulate the use of private or nonfederal land or in any way affect the property rights of owners.

The following table shows the results from a search of the NRCS Soil Survey Geographic (SSURGO) Database (NRCS 2008) for the Project area. No prime forestland or prime rangeland is located within the Project boundary.

Table 4.1.1-2 Farmland Summary by Classification

Farmland Rating	Acres	Percent
Prime Farmland	232	3%
Prime Farmland if Irrigated	1,313	54%
Farmland of Statewide Importance	1,272	16%
Not Prime Farmland	2,177	27%
Total Project Acreage	7995	100%

Source: NRCS Soil Survey Geographic (SSURGO) Database (NRCS 2008)

Formally Classified Lands

Formally classified lands may include:

- National Parks and Monuments;
- National Natural Landmarks;
- National Battlefield Park Sites;
- National Historic Sites and Parks;
- Wilderness Areas;
- Wild and Scenic and Recreational Rivers;

- Wildlife Refuges;
- National Seashores, Lake Shores, and Trails;
- State Parks;
- Bureau of Land Management (BLM) Administered Lands;
- National Forests and Grasslands; and
- Native American Owned Lands and Leases Administered by the Bureau of Indian Affairs.

There are no Formally Classified Lands within the Project boundary, and will not be discussed further.

Other Lands
Some areas of cropland in the Project Area have been enrolled in CRP. CRP land is removed from crop production for a specific period (usually 10 years) and is planted with a vegetation mix designed to conserve soil and water. Hay production and livestock grazing are not permitted on CRP land unless specifically allowed during droughts. There are approximately 313 acres of CRP land within the Project Area across 7 sections. CRP Land includes only those parcels listed by the USDA Farm Service Agency as being enrolled in the CRP Program. This information was obtained from the FSA office in Mound City, South Dakota.

The Project boundary is adjacent to, but does not contain any lands protected by, the USGS Gap Analysis Program (GAP). Adjacent lands on the northwest and southwest are shown from GAP data to be status 3 areas. The GAP establishes management categories aimed at ensuring that common animal species and plant communities remain common. Gap status 3 areas are subject to logging, mining and other extractive uses, but have permanent protection from conversion of natural land cover. Campbell County Registrar of Deeds has no record of these instruments, whether by easement or by fee. These areas are not within the Project boundary and would not be directly impacted by turbine or road construction; however, special attention would be given to protect these adjacent parcels from impacts during the construction phase.

4.1.2 Direct and Indirect Effects

The proposed development would not displace any residences or existing or planned industrial facilities. Wind turbines would be sited a minimum of 1,000 feet from occupied residences.

Land use impacts would pertain to physical and operational effects of the Project area on existing and future land use. Within the Project boundary, these impacts are primarily related to agricultural practices. A significant impact would occur if: 1) the Proposed Action resulted in the uncompensated loss of crop production; or 2) the Proposed Action resulted in the foreclosure of future land uses.

The Project would include 55 wind turbines, one substation, approximately 32.5 miles of underground collection line, and 14.3 miles of new access roads. Campbell County Wind

Farm would also seek to obtain title to approximately five acres for temporary laydown and contractor staging areas, which would be used for the construction of the operations and maintenance building upon Project completion. Impact calculations are based on the following assumptions:

- 55 turbine pads: 15 foot permanent impact area for each turbine base
- Access roads: 16-foot wide permanent access road impact
- Underground electrical collection lines: 8-foot wide temporary impact
- Project Substation and Interconnection Switchyard: 12 acres of permanent impact
- Access road shoulders, service road shoulders and turnarounds: temporary impacts not currently calculated. Any adjustments to road shoulders and radiuses would be returned to pre-construction condition.
- Construction laydown area: 7 acres of temporary impact.
- Operations and Maintenance Building: 10 acres of permanent impact.

It is estimated that the Project would require the permanent disturbance of 50.7 acres and the temporary disturbance of 310 acres (construction area).

It is possible that landowners may convert non-productive lands, such as CRP or native grasslands into production to offset the loss of acres due to access road and turbine construction.

General Land Use

The area would retain the rural sense and remote characteristics of the vicinity. At other wind developments in the upper Midwest, landowners frequently plant crops and/or graze livestock to the edge of the access roads and turbine pads. The access roads are 16 feet wide and low profile, so they are easily crossed while farming. Campbell County Wind would work closely with the landowners in locating access roads to minimize land use disruptions to the extent possible.

Considerations would be taken in locating access roads to minimize impact on current or future row crop agriculture and environmentally sensitive areas. During the construction, additional areas may be temporarily disturbed for contractor staging areas and underground power lines. These areas would be graded to original contour and returned to pre-construction condition.

Table 4.1.2-1 Temporary Impact Summary by Land Use

Temporary Impacts	Acres Disturbed	Percent of Temporary Disturbance	Percent of Project Site
Crop Land	246.9	75%	3.08%
Grass Land	73.1	22%	0.91%
CRP Land	8.0	3%	0.10%
Homestead	1.9	<1%	0.02%
Wet Land	0.0	0%	0.00%
Totals	329.9	100%	4.11%

Assumes total Project area of 8000 acres.

Table 4.1.2-2 Permanent Impact Summary by Land Use

Permanent Impact Type	Acres Disturbed	Percent of Permanent Disturbance	Percent of Project Site
Crop Land	35.7	70%	0.40%
Grass Land	13.1	26%	0.15%
CRP Land	1.7	3%	0.02%
Homestead	0.2	1%	0.00%
Wet Land	0.0	0%	0.00%
Totals	50.7	100%	0.57%

Assumes total Project area of 8000 acres.

Important Farmland, Prime Forestland, and Prime Rangeland

This facility would result in the permanent conversion of 1 acre of cropland and rangeland to wind facilities due to turbine construction, up to 12 acres of cropland and rangeland for the substation and O&M building areas, and approximately 33 acres of access roads for a total of 46 acres of permanent disturbance. Tables 4.1.2-1 and 4.1.2-2 show the acres disturbed (temporary and permanent) by land use. Tables 4.1.2-3 and 4.1.2-4 detail the temporary and permanent impacts to farmland, by NRCS classification.

Table 4.1.2-3 Temporary Farmland Impact Summary by Classification

Farmland Rating	Acres	Percent
Prime Farmland	2.52	1%
Prime Farmland if Irrigated	217.33	70%
Farmland of Statewide Importance	43.11	14%
Not Prime Farmland	46.81	15%
Total Project Acreage	309.8	100%

Source: NRCS Soil Survey Geographic (SSURGO) Database (NRCS 2008)

Table 4.1.2-4 Permanent Farmland Impact Summary by Classification

Farmland Rating	Acres	Percent
Prime Farmland	0.39	1%
Prime Farmland if Irrigated	35.82	70%
Farmland of Statewide Importance	7.84	16%
Not Prime Farmland	6.66	14%
Total Project Acreage	50.7	100%

Source: NRCS Soil Survey Geographic (SSURGO) Database (NRCS 2008)

Formally Classified Lands
There are no formally classified lands within the Project boundary; therefore, there would be no impacts.

Other Lands
Project planning, turbine siting and access road layout was done keeping environmentally sensitive areas in mind. Temporary and permanent disturbance of CRP lands is expected to be minimal and was calculated based on the preliminary site layout for the site. See Table 3.1.4-1 for impact area details. If Project facilities are proposed for a parcel enrolled in CRP, landowners would consult with the FSA to determine whether the parcel must be removed from the program and if reimbursement is necessary.

4.1.3 Cumulative Effects
Cumulative impacts may be a concern for the rural communities that have historically made their living from agricultural activities. With the increase in land being used for wind energy generation activities and new transmission lines to support the new facilities, farming may decrease slightly. The additional income from wind development on their land, however, may compensate for the loss of income due to farmland conversion. Cumulative impacts from this Project would be insignificant because the proportion of the area permanently disturbed would be a small percentage of the total area (50.7 acres out of 471,038 in the county).

4.1.4 Mitigation Measures
During the Project design phase, previously disturbed areas, such as cropland, were targeted for turbine siting, access road layout and collector line placement. Environmentally sensitive areas, such as grassland, CRP land, wetlands, and surface waters were avoided to minimize impact. Landowners were included in design decisions to minimize effects to agricultural operations.

4.1.5 No Action Alternative
Under the no action alternative, increased disturbance from site clearing, excavation activities, and travel on gravel roads and ROWs would not occur. The overall impacts to land resources would be less under the no action alternative.

4.2 Air Resources
The impact analysis for air resources is limited to the vicinity of the Project area (Figure 3.2.2-1).

4.2.1 Affected Environment
There are no areas in South Dakota in nonattainment for any state or federal air quality standards, according to United States Environmental Protection Agency (EPA) data and the South Dakota Department of Environment and Natural Resources (DENR). In the Project area, effects to air quality may be caused by vehicles or farming activities, particularly during spring planting and fall harvest. These effects are not expected to exceed National Ambient Air Quality Standards (NAAQS).

4.2.2 Direct and Indirect Effects

A significant impact to air resources would result if federal or state air quality standards were exceeded during construction, maintenance, or operation of the Project. Temporary impacts may occur due to vehicle traffic during Project construction. Pollutants would include particulate matter, nitrogen oxides, hydrocarbons, carbon monoxide, and sulfur dioxide from delivery and construction vehicles. These impacts would be short-term, as construction is expected to last approximately six weeks. No pollutants would be emitted at a rate sufficient to cause exceedances of state or national air quality standards. Air quality effects caused by dust would be short-term, limited to the time of construction, and would not exceed NAAQS particulate standards. The DENR Air Quality Program does not require a permit for this Project.

4.2.3 Cumulative Impacts

The limited duration of construction of the Project, along with implementation of the mitigation measures outlined below, is expected to lessen air quality effects so that federal and state standards would not be exceeded. Air quality is expected to return to pre-construction conditions upon completion of the Project. There would be no cumulative effects on air quality.

4.2.4 Mitigation Measures

Complaints regarding fugitive dust emissions, if any, would be handled quickly and efficiently using an established complaint recording and reporting procedure. Mitigation of fugitive dust emissions would be accomplished by dust suppression with water or dust suppressant.

Project equipment, such as transformers, circuit breakers and switch gear would be sealed and certified to appropriate standards prior to installation. All maintenance would be provided by certified contractors.

4.2.5 No Action Alternative

Under the no action alternative, impacts to air quality from site clearing, excavation activities, and travel on gravel roads and ROWs would not occur. The overall impacts to air resources would be less under the no action alternative.

4.3 Water Resources

4.3.1 Affected Environment

Surface Waters

The Project is located within the Southern Missouri Coteau Slope physiographic unit. The Coteau du Missouri is part of the Missouri Plateau of the Great Plains Province, separated from the main body of the Missouri Plateau by the Missouri River. This highland area is covered with glacial deposits and underlain by Pierre shale and older

formations. Several broad sags traverse the Coteau, which mark the positions of former stream valleys of eastern continuations of the Grand, Moreau, Cheyenne, Bad, and White rivers (Flint, 1955). No major stream drains the Coteau du Missouri today.

Surface water resources within the Project boundary are limited and include wetlands, ephemeral drainages (i.e. drainages that only flow for short periods of time during the year), and ponds created by excavation or impoundment for livestock production. The Project is located in three watersheds: Vanderlaan Bay, Spring Creek-Lake Oahe, and Lower Spring Creek Watersheds. These drainages are ephemeral and typically maintain flows in the spring of the year or in response to precipitation events. Overland flow during storm events is low due to undulating topography and permeable soil underlying the Project area.

Few wetlands within the Project boundary offer open water habitat. As mentioned, most are stock ponds, reservoirs and dugouts created for the use of livestock, and are generally less than 1 acre in size. Open water habitats in the vicinity of the Project include Lake Oahe (Missouri River) and various small lakes. Many small, isolated wetlands/lakes known as “prairie potholes” are present in the eastern half of Campbell County, approximately 15 miles east of the Project.

According to the Federal Emergency Management Agency (FEMA), the site is in an area designated as unmapped. As a result, potential floodplains have not been determined (FEMA, 2013). Consideration was given during the design process to site turbines, access roads and collector lines outside of potential floodplains. No direct or indirect effects on potential floodplains are anticipated.

Ground Water

Groundwater occurs in the Project area from 6 to 70 feet. Well logs recorded within the vicinity of the Project area show that the depth to the top of the Grand Aquifer is approximately 50 feet below ground surface (South Dakota DENR Water Well Database). Ten borings were drilled in the Project area in support of the Geotechnical Report. Of the ten, ground water was observed in two of the wells at depths of 13 and 49.5 feet below ground surface. Groundwater was not observed in the remaining boreholes while drilling, or for the short duration that the borings were allowed to remain open. However, this does not necessarily mean the borings terminated above ground water.

Subsurface conditions were analyzed by Midwest Testing on June 10, 2013 and can be generally characterized as follows:

Table 4.3-1 Subsurface Conditions

Stratum	Approximate Depth to Bottom of Stratum (ft)	Material Description	Consistency/Density
1	0.5	Topsoil	N/A
2	4-12	Sand, silt and clay	Loose to medium dense or medium stiff to hard
3	Undetermined[1]	Lean clays and fat clays with various amounts of sand	Medium stiff to hard

1. Borings terminated in this stratum with auger/cone refusal or at the planned depth of 51 feet.
2. Source: Preliminary Geotechnical Engineering Report - Campbell County Wind Farm, Midwest Testing Laboratory, Inc. June 2013

Pockets, lenses and stringers of sand are sometimes encountered in the soils found in the vicinity of the Project. These sand pockets are normally discontinuous and often contain water of variable quality and quantity. Ground water level fluctuations occur due to seasonal variations in the amount of rainfall, runoff, and other factors not evident at the time the borings were performed. Therefore, ground water levels during construction and at other times in the life of the Project may be higher or lower than the levels indicated on the boring logs. (Midwest Testing Laboratories, Inc. 2013)

Well logs listed in the SD DENR database were reviewed for ground water depth as well as water quality. Water samples taken from wells in and around the Project area indicate water quality is typically poor, with high concentrations of total dissolved solids. Samples were taken from the Grand Aquifer as well as the Spring Creek and Selby Aquifers, all located within Campbell County.

4.3.2 Direct and Indirect Effects

Surface Water

Significant impacts to surface waters would occur if construction activities were to cause a loss or degradation of surface water quality. The Project is designed to minimize disturbances to surface waters through implementation of mitigation measures and avoidance of surface waters during turbine, access road and collector line placement. Therefore no direct or indirect effects would occur.

Ground Water

The Project would not include the installation of wells for water extraction; therefore, there would be no impact to ground water

4.3.3 Cumulative Effects

Surface Water
Significant impacts to surface waters would occur if construction activities were to cause a loss or degradation of surface water quality. The Project is designed to minimize disturbances to surface waters through implementation of mitigation measures and avoidance of surface waters during turbine, access road and collector line placement. Therefore no direct or indirect effects would occur.

4.3.4 Mitigation Measures

Best management practices (BMPs) proposed in the construction storm water pollution prevention plan would be implemented during construction and continued during the operations phase. This would minimize topsoil erosion and protect adjacent surface waters. BMPs may include establishing a protected buffer zone, containing excavated material, use of silt fences, protecting exposed soil, stabilizing restored material, and re-vegetating disturbed areas with native species.

4.3.5 No Action Alternative

Under the no action alternative, impacts to surface water and ground water would not occur. The overall impacts to water resources would be less under the no action alternative.

4.4 Vegetation

4.4.1 Affected Environment

The Project lies within Ecoregion 9.3.1: Northwestern Glaciated Plains, which covers portions of southwestern Saskatchewan, southeastern Alberta, northern Montana, all along the Missouri River in the central Dakotas, and a small portion of northern Nebraska. The landscape terrain ranges from gently undulating to steeply rolling and hilly plains, with elevations ranging from 2,000 feet to about 1,850 feet above sea level within the Project boundary.

This ecoregion has mostly a dry, mid-latitude steppe climate. It is marked by warm to hot summers and cold winters. The mean annual temperatures range from 36.5°F in the north to 44.6°F in the south. The mean summer temperature hovers around 60°F and the mean winter temperature is about 14°F. The frost-free period ranges from 95 days to 170 days. The mean annual precipitation ranges from 9.8 inches to 13.8 inches in drier areas and from 13.8 inches to 21.7 inches in moist areas.

Historically, spear grass, blue grama grass, and wheat grass were dominant native grasses that covered many parts of the landscape. A variety of shrubs and herbs were also common. Scrubby aspen, willow, cottonwood, and box elder occur to a limited extent on

shaded slopes of valleys and river terraces. The region can be classified as mixed grass prairie; however alterations to the natural landscape have resulted from human use throughout the Project area.

Currently, local vegetation in the area is predominantly pasturelands with corn, beans, small grains, and forage crops, creating a low uniform cover. A mix of deciduous and coniferous trees planted for windbreaks typically surround farmsteads, and are found along some field boundaries. In the swales, there is occasional riparian growth of native willows, cattails, sedges, and rushes associated with wetlands and/or intermittent and permanent streams. Figures 4.4-1 through 4.4-4 shows typical landscape views within the Project area.

Figure 4.4-1

Figure 4.4-2

Figure 4.4-3

Figure 4.4-4

4.4.2 Direct and Indirect Effects

The Project is designed to minimize disturbances to grassland through avoidance of grassland during turbine, access road and collector line placement. Therefore direct and indirect effects would be minor.

The Project would result in both temporary and permanent impacts to vegetation (See Table 4.1-3 and 4.1-4). The area of permanent vegetation loss is small given the size of the Project area. Approximately 0.42 percent of the Project area would be permanently impacted as a result of construction. These impacts would be associated with clearing, grading, and other associated activities.

Temporary disturbance and removal of vegetation would have the greatest impact. Temporary impacts would be most significant within crop land and grassland. These two communities represent approximately 96 percent of the entire temporary disturbance within the Project area.

The vegetation communities that would experience the greatest loss as a result of Project implementation would be crop land and the grassland community. Cropland would comprise 70 percent (35.7 acres) of the permanently impacted acres while grassland would represent 26 percent (13.1 acres).

All areas temporarily disturbed would be returned to pre-construction condition within two growing seasons. Invasive species would be controlled during the recovery period with BMPs and weed treatment.

Development of the Project would avoid impacts on plant species of concern. Based on the available information on known distribution, the Project would not affect these resources.

4.4.3 Cumulative Effects

Most of the sites have already had disturbance of native vegetation and CRP in the form of agriculture and development. The Project was designed to minimize disturbances to grassland through avoidance of grassland during turbine, access road and collector line placement. Cumulative impacts from this Project would be insignificant because the proportion of the area permanently disturbed would be a small percentage of the total area (50.7 acres out of 471,038 in the county). Of these, only 13.1 acres of grassland would be impacted.

4.4.4 Mitigation Measures

During the Project design phase, previously disturbed areas, such as cropland, were targeted for turbine siting, access road layout and collector line placement. Environmentally sensitive areas, such as grassland, CRP land, wetlands, and surface waters were avoided to minimize impact.

Construction activities such as clearing and grading would not occur in grasslands during the breeding season to minimize impacts to ground-nesting avian species.

The following mitigation measures would be implemented to avoid and reduce impacts to vegetation and sensitive plants:

- Temporarily disturbed areas would be reclaimed by replacement of topsoil and seeding;
- Re-vegetation would occur as soon as possible to establish vegetative cover and avoid establishment of weeds. Agricultural lands would be returned to their original use;
- Noxious weeds would be controlled using appropriate weed control measures;
- Dust emissions would be minimized during clearing, grading, and other construction activities to avoid adversely affecting vegetation.
- Obtain native plant seed stock from seed sources within 250 miles of the Project area to ensure success of re-vegetation effort.

Appropriate erosion and sediment control BMPs would be used during construction to protect topsoil and nearby wetland resources and to minimize soil erosion. Practices would include stockpiling and re-use of topsoil, use of silt fences, protecting exposed soil, stabilizing restored material, and re-vegetating disturbed areas.

4.4.5 No Action Alternative

Under the no action alternative, impacts from site clearing and excavation activities to native grasslands would not occur. The overall impacts to native grassland would be less under the no action alternative.

4.5 Wetlands

4.5.1 Affected Environment

Wetlands
Wetland resources were evaluated within the Project area. The majority of wetlands present within the Project area are semipermanently flooded (either diked or excavated) and temporarily or seasonally flooded, palustrine emergent wetlands (Cowardin et al. 1979). Water regimes of these wetlands are highly variable, depending on seasonal climatic conditions, topography, and location. Some of these wetlands form in shallow depressions, although most are located in drainages with minimal flow. The wetlands that are located within drainage bottoms may be connected to the jurisdictional waters of the U.S. (WUS).

The NWI database indicates 7 wetland classification types (Table 4.5.1-1), covering approximately 66.8 acres (0.84%), mapped on the site based on the hydrogeomorphic system.

Table 4.5.1-1 Wetland Summary by Classification

System	Class	Modifiers	Special Modifiers	Acres	Percent
Palustrine	Aquatic Bed	Semipermanently Flooded	Diked/Impounded	22.80	0.29%
Palustrine	Aquatic Bed	Semipermanently Flooded	Excavated	1.92	0.02%
Palustrine	Emergent	Seasonally Flooded	Diked/Impounded	0.23	0.00%
Palustrine	Emergent	Seasonally Flooded		24.16	0.30%
Palustrine	Emergent	Temporarily Flooded	Partially Drained/Ditched	1.16	0.01%
Palustrine	Emergent	Temporarily Flooded		12.17	0.15%
Palustrine	Forested	Seasonally Flooded		1.49	0.02%
Palustrine	Shrub-Shrub	Seasonally Flooded	Diked/Impounded	2.84	0.04%
			Total Project Wetlands	66.75	0.83%

Source: National Wetland Inventory (NWI)

The occurrence of USACE jurisdictional features across the site was estimated by overlaying the NWI (USFWS 1977) and National Hydrography Dataset (NHD). The NHD provides geographical data for perennial and intermittent drainages, which for the purposes of this analysis were assumed to represent all of the WUS across the site. It was then assumed that each NWI (USFWS 1977) wetland that intersects NHD drainage represents a hydrologically connected wetland, thus identifying the subset that may qualify as jurisdictional wetland WUS. Predominantly, these wetlands are classified as semi permanently flooded (either diked or excavated) and temporarily flooded, palustrine emergent wetlands. This analysis identified 32 NWI wetlands that may be considered jurisdictional wetland WUS (see Table 3.5-2), resulting in an estimated 23.7 acres (less than one percent of the Project area). This estimate of USACE jurisdictional wetlands is based on assumptions; therefore, formal wetland delineations are required to confirm the determinations, should a wetland be impacted.

Table 4.5.1-2 Estimated Waters of the US Summary by Classification

System	Class	Modifiers	Special Modifiers	Acres	Percent
Palustrine	Aquatic Bed	Semipermanently Flooded	Diked/Impounded	11.37	0.14%
Palustrine	Aquatic Bed	Semipermanently Flooded	Excavated	1.06	0.01%
Palustrine	Emergent	Seasonally Flooded	Diked/Impounded	0.23	0.00%
Palustrine	Emergent	Seasonally Flooded		3.51	0.04%
Palustrine	Emergent	Temporarily Flooded	Partially Drained/Ditched	1.16	0.01%
Palustrine	Emergent	Temporarily Flooded		3.54	0.04%
Palustrine	Shrub-Shrub	Seasonally Flooded	Diked/Impounded	2.84	0.04%
			Estimated Project Jurisdictional Wetlands	23.72	0.34%

Source: National Wetland Inventory (NWI) and National Hydraulic Dataset (NHD)

4.5.2 Direct and Indirect Effects

Significant impacts to wetlands would occur if construction activities were to cause a loss or degradation of wetlands in violation of a USACE permit. The Project is designed to minimize disturbances to wetlands through implementation of mitigation measures and avoidance of wetland habitats during turbine, access road and collector line placement. Therefore no direct or indirect effects would occur.

4.5.3 Cumulative Effects

Avoidance of wetlands during Project design, implementation of the environmental protection measures described below, and compliance with USACE permits, if applicable, would ensure that there would be no unmitigated loss or permanent degradation of wetlands.

4.5.4 Mitigation Measures

Wetlands would be avoided to the extent practicable during construction. If impacts to USACE jurisdictional waters are unavoidable, coverage under a Section 404 USACE Nationwide Wetland Permit would be obtained.

BMPs proposed in the construction storm water pollution prevention plan would be implemented during construction and continued during the operations phase. This would minimize topsoil erosion and protect nearby wetland resources. These BMPs may include establishing a protected wetland buffer zone, containing excavated material, use of silt fences, protecting exposed soil, stabilizing restored material, and re-vegetating disturbed areas with native species.

4.5.5 No Action Alternative

Under the no action alternative, impacts to wetlands would not occur. The overall impacts to wetland resources would be less under the no action alternative.

4.6 Wildlife

Applicable Regulations

Migratory Bird Treaty Act
The Migratory Bird Treaty Act (MBTA) is the cornerstone of migratory bird conservation and protection in the United States. The MBTA implements four treaties that provide for international protection of migratory birds. It is a strict liability statute, meaning that proof of intent, knowledge, or negligence is not an element of an MBTA violation. The statute's language is clear that actions resulting in a "taking" or possession (permanent or temporary) of a protected species, in the absence of a Service permit or regulatory authorization, are a violation of the MBTA. (USFWS, 2012)

Bald and Golden Eagle Protection Act
Under authority of the Bald and Golden Eagle Protection Act (BGEPA), 16 U.S.C. 668–668d, bald eagles and golden eagles are afforded additional legal protection. BGEPA prohibits the take, sale, purchase, barter, offer of sale, purchase, or barter, transport, export or import, at any time or in any manner of any bald or golden eagle, alive or dead, or any part, nest, or egg thereof. (USFWS, 2012)

Endangered Species Act
The Endangered Species Act (16 U.S.C. 1531–1544; ESA) was enacted by Congress in 1973 in recognition that many of our Nation's native plants and animals were in danger of becoming extinct. The ESA directs the Service to identify and protect these endangered and threatened species and their critical habitat, and to provide a means to conserve their ecosystems. To this end, federal agencies are directed to utilize their authorities to conserve listed species, and ensure that their actions are not likely to

jeopardize the continued existence of these species or destroy or adversely modify their critical habitat. (USFWS, 2012)

The Clean Water Act
The Clean Water Act (CWA) is the cornerstone of surface water quality protection in the United States. The statute employs a variety of regulatory and non-regulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. These tools are employed to achieve the broader goal of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters so that they can support "the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water."

4.6.1 Affected Environment

Habitat
The Project site can be described as agricultural, with the majority of the Project site (61%) in crop production. Corn, beans, wheat, alfalfa and sunflowers provide foraging for many species. Native grasslands as well as planted grasslands provide habitat. A total of 116 potential wetland areas identified within the Project boundaries and buffer zone provide valuable habitat for a wide range of wildlife species, including many migratory birds. See Section 3.5 for more information on Wetlands.

All lands included in the Project area are privately owned. There are no state- or federally-owned lands within the Project boundary. Also, there are no lands held under protective easements, such as grassland or wetland easements managed by the USFWS. This means that land use within the Project boundary changes periodically, with the exception of lands enrolled in CRP. These remain for the duration of the contract. Numerous homesteads are scattered throughout the Project. Some are inhabited, others are vacant. Most include a stand of trees that provide valuable roosting habitat to both resident and migratory bird and bat species. Other land uses within the Project area that provide habitat include shelterbelts. See Section 3.1 for more information on Land Use.

Mammals
Small mammals that may exist in the Project area include opossum, raccoon, weasels, mink, otters, skunks, badger, fox, pocket gopher, ground squirrels, chipmunks, tree squirrels, porcupine, beaver, muskrat, jackrabbits, cottontail rabbits and numerous species of bats. (SD GFP)

Twelve bat species can be found throughout South Dakota. Bat populations are declining locally, and continentally, due to habitat loss and fragmentation, roost disturbances, public lack of awareness, and poor regulatory measures. Depending on the species, bats roost in a variety of sites, such as rock crevices, trees, in buildings, and under bridges. (SDBWG, 2004). Although six species of bats are considered species of concern according to the South Dakota Natural Heritage Program, no state protection beyond their nongame status is provided to these species. Pre-construction bat studies were performed for the Project to assess bat use within the Project boundary. The following table shows the eight bat species with the potential to occur within the Project area.

Table 4.6.1-1 Bat Species

Species	(Scientific name)	Call Frequency
Little brown bat	(Myotis lucifugus)	High
Northern long-eared bat	(Myotis septentrionalis)	High
Eastern pipistrelle	(Perimyotis subflavus)	High
Eastern red bat	(Lasiurus borealis)	Mid
Evening bat	(Nycticeius humeralis)	Mid
Big brown bat	(Eptesicus fuscus)	Low
Silver haired bat	(Lasionycteris noctivagans)	Low
Hoary bat	(Lasiurus cinereus)	Low

Source: Eco-Tech Consultants, 2011

Total bat activity peaked in late August and no passes were recorded after October 11. Bat activity appears to have come predominately from low frequency bats, such as big brown bats, hoary bats and silver-haired bats. The mean number of bat passes per detector per night was compared to existing data at other wind energy facilities from the region where both bat activity and mortality levels have been measured. The level of bat activity documented at the Project site was lower than all other published results.

There was limited information regarding larger mammals that may be observed near the Project site; however, white-tailed deer, coyote and mountain lions have been seen in the area. Historically, bison, elk and pronghorn were abundant in the prairies. Hunting and habitat fragmentation have reduced the populations and/or the suitable habitat. These species are no longer found in Campbell County.

Birds

Raptor nest surveys performed during pre-construction avian studies in 2010 and 2012 identified both occupied and non-occupied nests within the Project area. These surveys determined nest activity status and the species using those nests. Raptors are of special concern due to their typical flight pattern being within a turbine's rotor-sweep-area. Eleven species of raptor were observed during avian use surveys in 2010; six species were identified in 2012 surveys.

Both adult and fledgling raptors are at risk of collision with turbine blades, when turbines are built near nests. During the breeding season, adults spend much of their time flying in the vicinity of the nest to hunt and attend to young. Fledglings rarely venture far from the nest immediately after fledging until they have become capable flyers and hunters. Additionally, construction activity close to active nests may cause adults to abandon them.

Greater Prairie-chicken and Sharp-tailed Grouse

Of particular concern to SD GFP was the Greater Prairie-chicken and the Sharp-tailed Grouse. Both species require large tracts of open, contiguous grassland. The Greater Prairie-chicken prefers tall- to mixed-grass prairie. Breeding behavior peaks on leks primarily between late-March through April. Nesting occurs in mid-May to June. Leks are located on barren areas or on areas with minimal cover. This species nest in grasslands (prairies, pastures, hayfields) approximately 2 miles from a lek site. Loss and fragmentation of tall-grass prairie are considered reasons for population declines (letter from S. Kempema,SDGFP, August 2013).

The Sharp-tailed Grouse prefers grassland habitat (mid- to tall-grasses) with brushy draws and thickets. The peak of courtship activity on communal display grounds (leks) occurs between late-March through April. Nesting also begins during this time. Leks are located on hilltops or other elevated sites with minimal vegetation. Nest sites are found within approximately 1 mile of the lek. Nests typically hatch from the last week in May through the first week in June. Degradation of native grasslands, reduction of nesting and brood rearing cover, and variable climatic factors are limiting factors for this species (letter from S. Kempema, SDGFP, August 2013).

No Greater Prairie-chickens or leks were observed in the Project area during lek surveys. Three Sharp-tailed Grouse leks were located within the 1 mile buffer area surrounding the Project area; none were within the Project boundary. The survey area appeared to have areas that contained quality sharp-tailed grouse habitat, particularly in the buffer area to the west and northwest of the Project area. However, on a landscape-level, the habitat was fragmented with crop fields and lacked woody cover to support larger populations of sharp-tailed grouse (WPC Inc. 2011; Wenck 2012).

4.6.2 Direct and Indirect Effects

Direct impact to wildlife habitat may occur during construction activities and includes impacts from clearing and grading. Removal of vegetation and topsoil to install access roads, crane pads and foundations may have more impacts to species that are less mobile, such as small mammals, reptiles and ground-nesting bird species. Medium-sized and larger mammals, such as raccoon, fox and white-tailed deer would vacate the immediate area surrounding construction activities and would be expected to return shortly after construction is completed. These impacts would be temporary, lasting only one or two seasons. The majority of disturbed areas would be returned to their pre-construction condition. Permanent impacts to habitat would include the access road and turbine base.

Other impacts would include construction equipment striking wildlife while traveling along state, county and Project access roads. This would impact primarily small mammals and birds. Larger mammals are better equipped to avoid moving vehicles. Disturbances from noise, dust and human activity may drive species to find other foraging and/or nesting areas. These disturbances would also be temporary, and displaced wildlife are expected to return after construction has ended.

Impacts from collisions with turbine blades would be a threat to birds and bats that occupy and migrate through the Project area.

Direct mortality or injury from collisions with wind turbines and guy wires, temporary or permanent habitat loss, and displacement of birds from habitats near turbines are possible impacts to avian species from the construction and operation of the Project. In addition to mortality associated with wind farms, concerns have been raised that bird species may avoid areas near turbines after the wind farm is in operation. (WPC, 2011; Wenck, 2012)

Bat activity within the Project site is lower than all published observations from region-similar facilities in Minnesota, Wyoming, and Iowa (Kunz et al. 2007). Based on the presumed relationship between pre-construction bat activity and post-construction fatalities, we expect that bat mortality rates at Campbell County Wind would be minimal in the context of published observations from other facilities. (Eco-Tech, 2011)

Depending on the location of local sources of gravel and sand, there may also be an impact to habitat if new sources are explored or mined. Currently, there are no contracts in place for the supply of sand and gravel.

4.6.3 Cumulative Effects

Past actions in the Project area include agricultural activities which contribute to habitat loss and fragmentation. Future actions which may occur in the area are continued agricultural activities as well as other forms of rural development. This Project, combined with the described past and future actions, poses challenges for non-listed mammals due to minor habitat loss and increased human presence and activity. There would be impacts to certain bird and bat species; however, these impacts are expected to be low. Pre-construction surveys indicate a low density bat population which decreases the likelihood of fatalities caused by impact with turbine blades. Turbine locations were selected to minimize impact to avian nesting and breeding areas, thus lessening these effects.

4.6.4 Mitigation Measures

The Project would implement the following measures during Project planning, construction, and operation to limit the impacts on protected species and their habitats:

Turbine siting
During the Project design phase, previously disturbed areas, such as cropland, were targeted for turbine siting, access road layout and collector line placement. Environmentally sensitive areas, such as grassland, CRP land, wetlands and surface waters were avoided to minimize impact to populations and habitats of listed species.

- Turbines would not be placed within a one mile radius surrounding existing sharp-tailed grouse leks to avoid disturbance to grouse and possible abandonment of the lek.

- Turbines would not be placed within a one-half mile buffer area surrounding existing raptor nests. This is to avoid potential raptor collisions with turbines during nesting and fledging times.

Turbine and Tower Design
Turbines designated for use at CCWF would be state-of-the-art, with large un-guyed tubular towers, slow-moving rotors, and few perching surfaces, reducing the potential for bird collisions.

Buried Collector Line System
All collector lines between turbines would be installed underground, eliminating the potential for bird strikes and electrocutions. The only location of overhead lines would be at the substation, which is located adjacent to Western's existing 230 kV overhead system.

Construction Phase Measures

- During the construction phase, CCWF would require contractors to modify or curtail construction activities within one half-mile of the observation of a whooping crane, leaving birds undisturbed until they are no longer observed within the wind Project boundaries to minimize the potential for disturbance, displacement, and harm of roosting and foraging whooping cranes.

- Construction activities in grassland would not take place during breeding and nesting seasons to minimize impacts to species that may be displaced during clearing and grading activities.

- Construction activities would be restricted in a two mile buffer area surrounding existing sharp-tailed grouse leks for three hours, starting at sunrise, from March 1 through June 30. This is to avoid disturbance to grouse attending a lek.

- Construction personnel would be trained to recognize federally listed species and immediately report any sightings to construction management.

- Dust emissions during construction activities would be controlled with water applied to roads and pads, as required.

Pollution Prevention
A stormwater runoff permit would be obtained prior to construction. Compliance with this permit and the associated stormwater pollution prevention plan would ensure that surface water is not adversely affected by runoff from disturbances and construction areas.

As with any construction activity, there is a possibility of spilling fuel, hydraulic fluid, or other hazardous substances. The potential of such events would be minimized through implementation of the environmental protection measures described in site pollution prevention plans

Construction equipment would be equipped with spill cleanup kits. Equipment refueling would take place at secure areas, away from wetlands or drainages. These measures would ensure that surface and ground water quality is not degraded through spillage of contaminants.

Bird and Bat Conservation System

A Bird and Bat Conservation System (BBCS) would be developed to document the steps taken to avoid and minimize effects to birds and bats. It would also address the post-construction monitoring efforts for mortality and habitat effects, and may use many of the components suggested in the USFWS Avian Protection Plan Guidelines. (USFWS 2012)

Post-Construction Monitoring Plans

- Monitoring and training procedures would be developed in coordination with the USFWS and SD GFP and documented in the Project operations plan and ABPP;

- Operations personnel would be trained to identify federal and state listed species in the field;

- Observations of whooping cranes by operations personnel made as a result of monitoring or other incidental sightings in the Project area and surrounding vicinity would be immediately reported to the USFWS and SD GFP. Turbine operations would be curtailed until whooping cranes leave the area as noted in the Bird and Bat Conservation Strategy.

- Post-construction mortality monitoring would help to identify individual turbines that contribute to avian mortality. This information could be used to modify operating procedures as necessary and provide valuable design and layout information for future wind development Projects, aiding in the reduction of potential for avian mortality.

4.6.5 No Action Alternative

Under the no action alternative, increased impacts to wildlife would not occur. The overall impacts to wildlife resources would be less under the no action alternative.

4.7 Special Status Species

4.7.1 Affected Environment

The Endangered Species Act of 1973 (ESA) (16 USC 1531–1544) requires protection of federally listed threatened or endangered species and any habitat designated as essential to maintenance and recovery of a listed species. Critical habitat is designated by the USFWS. No critical habitat is located within one mile of the Project boundary.

A search of the SD GFP Natural Heritage Program database was requested to identify known instances or habitats of threatened, endangered or rare species within one mile of the Project boundary. There were no records of observed threatened, endangered or rare species or their habitats within one mile of the Project. Threatened and endangered species were also identified using data obtained from the USFWS South Dakota Ecological Services Field Office in Pierre, SD.

Based on the data received, five federally listed species may occur within the Project boundary: least tern (*Sterna antillarum*, endangered); pallid sturgeon (*Scaphirhynchus albus*, endangered); piping plover (*Charadrius melodus*, threatened); Sprague's pipit (*Antus spragueii*, candidate); and whooping crane (*Grus americana*, endangered). None of these species were observed during site visits, although intensive species-specific surveys were not conducted.

Interior Least Tern
The interior population of the least tern presently breeds in the Mississippi, Missouri, and Rio Grande river systems. The birds usually stay in close proximity to the rivers. In 2003, the population of the interior least tern was estimated to be 12,000 individuals. Birds from the interior population winter along the Gulf of Mexico and on Caribbean Islands. In South Dakota, the interior least tern nests primarily on flowing segments of the Missouri River and Cheyenne River (USFWS 1990). Least terns are known to have nested along the shoreline of Lake Oahe in Campbell County in the past (Phone conversation, Silka Kempema. July 2013). No least terns were observed during avian studies performed at the Project site during 2010 and 2012 (WPC Inc. 2011; Wenck 2012).

The Interior Least Tern Recovery Plan (USFWS 1990) identifies two major causes for the least tern's decline: habitat alteration and destruction, and human disturbance. Much of the least tern's historical sandbar nesting habitat has disappeared as a result of channelization, irrigation, and dam construction. These changes have also led to an altered water flow pattern, resulting in frequent nesting habitat inundation. Sediment deprived water below the dams means that there is less sandbar formation. This problem is compounded by increased recreational use of sandbars, further reducing reproductive success. (SDGFP 2005)

Pallid Sturgeon
The pallid sturgeon was listed as endangered on September 6, 1990 (55 FR 36641). Although the species range is large, catch records are extremely rare. Native to the Missouri and Mississippi Rivers, pallid sturgeon adapted to the pre- development habitat conditions that existed in these large rivers. These conditions generally can be described as large, free-flowing, warm water, turbid habitat with a diverse assemblage of physical habitats that were in a constant state of change. Modification of the pallid sturgeon's habitat by human activities has blocked fish movement, destroyed or altered spawning areas, reduced food sources or ability to obtain food, altered water temperatures, reduced turbidity, and changed the hydrograph of the river system. Overfishing, pollution, and hybridization that occurs due to habitat alterations also have probably contributed to the species' population decline. (USFWS 1993)

Piping Plover
The Piping Plover, one of six North American species of belted plovers, was added to the Federal Endangered Species list in January 1986 (50 FR 50726-34). Piping plovers breed in three regions of North America; the Atlantic Coast from Newfoundland to South Carolina; the beaches throughout the Great Lakes; and river systems and lakes of the Northern Great Plains. Inland piping plovers occupy breeding habitat on the Great Lakes and Northern Great Plains from March until August; they spend the remainder of the year along the Gulf Coast from Florida to Northern Mexico.

Most breeding activity in South Dakota occurs on sandbars along the Missouri River from the Fort Randall Dam to Springfield, and from Yankton to Ponca, Nebraska. Breeding also occurs on silty flats, sandy beaches and gravel parking lots of Lake Oahe from Whitlocks Crossing south. Other isolated nesting locations include sandbars and causeways directly below Oahe Dam, and occasionally on saline wetlands in northeast South Dakota. Breeding season sightings (no documented nesting) have been reported for Campbell, Fall River, Harding, Hyde and Walworth counties (USFWS 1988). No Piping Plovers were observed during avian studies performed at the Project site during 2010 and 2012 (WPC Inc. 2011; Wenck 2012).

The USFWS Piping Plover Recovery Plan (USFWS 1988) identifies numerous reasons that the population has declined. In the late 1800's and early 1900's, the population was decimated by hunting (Bent 1929). More recently, population decline has been caused by a number of factors including loss of habitat due to recreational and commercial development, reservoirs and channelization resulting in the elimination of sandbars, change in water flow regimes leading to unpredictable and untimely flows, increase in predation due to higher concentrations of predators, human disturbance, livestock and pet disturbance, and inadequate federal regulation.

Sprague’s Pipit
Sprague's Pipit is a small, secretive, grassland bird that inhabits portions of the northern Great Plains and parts of Canada. It requires large tracts of native grassland for breeding, preferring ungrazed tracts with vegetation from 4 to 12 inches in height. This species can also be found in planted grasslands (planted grazing land or CRP) if the vegetation is not

too dense. It is rarely found on cultivated lands. (Dechant, Sondreal, Johnson, Igl, Goldade, Nenneman and Euliss. 2003)

One of the least-known birds in North America due to its plumage and behaviors, Sprague's pipit is one of few birds native to the North American grasslands. This pipit often goes undetected during migration through the Great Plains, and almost nothing is known about its behavior on the wintering grounds in the southwestern and south-central United States and northern Mexico. (Robbins and Dale, 1999)

Population estimates vary, but research has shown that the species has been in decline since its discovery in 1843. Sprague's pipit is not listed as threatened or endangered, but has been a candidate species since 2009 (USFWS 2013). Sprague's pipit was not observed during avian studies performed at the Project site during 2010 and 2012. (WPC Inc. 2011; Wenck 2012)

Due to the Sprague's pipit's selection of relatively large grassland areas and avoidance of edges, habitat fragmentation is a threat throughout the population's breeding range. As more development takes place in the northern Great Plains, the fragmentation of the native prairie is expected to increase, further decreasing the amount of suitable habitat in large enough patches to be used by breeding pairs. Other threats to the habitat of Sprague's pipit include grazing, fire suppression, and mowing. (USFWS 2012)

Whooping Cranes

The whooping crane occurs only in North America and is North America's tallest bird, with males approaching 1.5 m (5 ft) when standing erect. Whooping cranes currently exist in the wild at 3 locations and in captivity at 12 sites. The July 2010 total wild population was estimated at 383. There is only one self-sustaining wild population, the Aransas-Wood Buffalo National Park population, which nests in Wood Buffalo National Park and adjacent areas in Canada, and winters in coastal marshes in Texas at Aransas. The total population of wild and captive whooping cranes in July 2010 was 535.

The Project area is located in the migratory corridor of the Aransas-Wood Buffalo Population of whooping crane. Whooping cranes use a variety of habitats during migration, but primarily have been known to use shallow, seasonally and semipermanently flooded palustrine (marshy) wetlands for roosting, and various cropland and emergent wetlands for feeding. The Project area includes numerous seasonally and semipermanently flooded palustrine wetlands, surrounded by croplands that together, may provide attractive feeding and roosting migration habitat.

During migration, whooping cranes often are recorded in riverine habitats, especially in Nebraska. Frequently used riverine habitats include: the South Saskatchewan River in Saskatchewan; the Platte River, North and Middle Loup Rivers, and Niobrara River in Nebraska; the Missouri River in North Dakota; and the Red River in Texas. Cranes roost on submerged sandbars in wide, unobstructed channels that are isolated from human disturbance.

Development and conversion of prairie habitat for agricultural usage are responsible for much of the original migration and winter habitat loss for the species. Collisions with power lines are a substantial cause of mortality for fledged whooping cranes (USFWS, 2007). Migrating cranes are most vulnerable to collisions with structures in the early morning or late evening when light levels are diminished, as they fly at very low altitudes between roost and foraging sites, or when flying at low altitude when starting or ending a migration flight.

Based on historical records, 16 whooping crane observations have been made within 10.0 miles of the proposed Project area (Tacha et al. 2010, Table 4.7.1.1) primarily at areas near the Missouri River, approximately 1.75 miles west of the Project and in Lake Pocasse National Wildlife Refuge, approximately 5.5 miles north of the Project area (USGS 2013). Whooping Crane surveys were conducted in 2010 and 2012 between early April and late April and again from early October to early November, when the highest number of cranes were expected to occur in the Project area (USFWS 20074). No whooping cranes were sighted during either the 2010 or the 2012 surveys (WPC Inc. 2011; Wenck 2012). Based on historical records, eight whooping crane observations have been made within 9.2 miles of the Project area, see Table 4.7.1-1.

Table 4.7.1-1 Historical Whooping Crane Observations

Observation Number	Date	Distance From Project Area	Latitude	Longitude	Legal Description
73B-3	10/6/1973	3.0	45.866667	-100.350000	T128N,R79W,S36
57B-1	10/16/1957				
57B-2	10/16/1957				
61B-6	10/16/1961				
58B-2	10/15/1958				
59B-1	10/13/1959				
62B-5	10/8/1962				
69B-1	10/20/1969	4.3	45.900000	-100.250000	T128N,R78W,S14
75A-3	4/20/1975				
73B-2	9/24/1973				
70B-6	10/20/1970	4.5	45.900000	-100.300000	T128N,R78W,S17
88B-1	10/16/1988	4.7	45.905556	-100.265000	T128N,R78W,S15
64B-4	9/15/1964	7.6	45.933333	100.283333	T128N,R79W,S4
85B-29	10/28/1985	9.0	45.901667	-100.475278	T22N,R29E,S1
03B-11	10/13/2003	9.2	45.774444	-100.038056	T127N,R76W,S33
76A-34	5/29/1976	9.1	45.666667	-100.066667	T125N,R76W,S5

Assessment of Impacts and Determination of Effects to Threatened and Endangered Species - Campbell County Wind Farm; Wenck and Associates, 10/2013.

South Dakota Listed Species

The SD GFP conducts investigations on nongame, endangered, or threatened wildlife to develop information relating to population, distribution, habitat needs, limiting factors, and other biological and ecological data (SD Codified Law 34A-8-2).

Based on that data the SD GFP compiles a list of those species of wildlife which are determined to be endangered or threatened within the state. They make these determinations on the basis of the best scientific, commercial, and other data available to them and after consultation, as appropriate, with federal agencies, other interested state agencies, other states having a common interest in the species and interested persons and organizations (SD Codified Law 34A-8-3).

This information aids in determining management measures necessary to ensure their perpetuation as viable components of their ecosystem and for human enjoyment. The following table lists those species that have been given threatened or endangered status by the SD GFP according to those guidelines (SD GFP 2013).

Table 4.7.1-2 State Listed Species

Name	Scientific Name	State Status
Fishes:		
Banded killifish	Fundulus diaphanus	Endangered
Blacknose shiner	Notropis heterolepis	Endangered
Finescale dace	Chrosomus neogaeus	Endangered
Longnose sucker	Catostomus catostomus	Threatened
Northern pearl dace	Margariscus nachtriebi	Threatened
Northern redbelly dace	Chrosomus eos	Threatened
Sicklefin chub	Macrhybopsis meeki	Endangered
Sturgeon chub	Macrhybopsis gelida	Threatened
Reptiles and amphibians:		
Eastern hognose snake	Heterodon platirhinos	Threatened
False map turtle	Graptemys pseudogeographica	Threatened
Lined snake	Tropidoclonion lineatum	Endangered
Birds:		
American dipper	Cinclus mexicanus	Threatened
Bald eagle	Haliaeetus leucocephalus	Threatened
Osprey	Pandion haliaetus	Threatened
Peregrine falcon	Falco peregrinus	Endangered
Mammals:		
Black-footed ferret	Mustela nigripes	Endangered
Northern river otter	Lontra canadensis	Threatened
Swift fox	Vulpes velox	Threatened

4.7.2 Direct and Indirect Effects

Federally Listed Species
Direct and indirect effects to federally listed species vary, and include habitat fragmentation, habitat avoidance and habitat degradation. Construction activities may impact local streams and wetlands during grading activities or through unintended releases of petroleum products or hazardous chemicals. Collisions with construction equipment or erected turbines during construction or during operations are an issue with avian and bat species. The results of an analysis of the known populations and habitats of federally listed species in relation to the Project area are shown below:

Interior Least Tern and Piping Plover
The USFWS designated the shoreline of the Missouri River (Oahe Reservoir) from the North Dakota/South Dakota border downstream to Oahe Dam as critical habitat for the piping plover in 2002. (67 FR 57651) There is no designated critical habitat within the Project area (50 CFR Part 17). The nearest designated critical habitat to the Project is along the Missouri River, approximately 1.75 miles west of the westerly Project boundary. There are nesting records of the endangered interior least tern and threatened piping plover along the Missouri River in Campbell County; however the Project area is located over 4 miles away from the nearest record. (South Dakota Natural Heritage Database). The Project area is outside of breeding and foraging habitats for both species. Impacts with turbines would be rare, and limited to times of bird movements and migration periods. Based on this information, the Project may affect, but would not likely adversely affect the interior least tern or the piping plover population or their habitat.

Pallid Sturgeon
The nearest large river habitat suitable for pallid sturgeon is located 1.75 miles west of the Project area. Based on this information, the Project would have no effect on the pallid sturgeon.

Sprague's Pipit
During the Project design phase, previously disturbed areas, such as cropland, were targeted for turbine siting, access road layout and collector line placement. Environmentally sensitive areas, such as grassland were avoided to minimize impact; however there would be impacts to grassland parcels that may contain habitat suitable for Sprague's pipit. Grading, turbine construction and access road construction would be contributing factors. Of the 2600 acres of grassland inventoried in pre-construction surveys, 2.8% (73.1 acres) would be temporarily impacted. Of that, 84% (61.4 acres) would be returned to pre-construction condition. Considering the past activities that have fragmented the historical range of Sprague's pipit, the proposed Project may affect but is not likely to adversely affect the Sprague's Pipit population (Wenck, 2013).

Whooping Crane
The USFWS has expressed concern over potential impacts to whooping cranes. The whooping crane migrates through South Dakota during spring and fall, within a corridor

that is roughly 200 miles wide; the Project falls in the center of the corridor where roughly 75% of South Dakota's whooping crane reported sightings have been recorded.

The probability of whooping crane collisions with turbines on the Project is unknown. However, due to the small number of whooping cranes, the sporadic nature of stopovers within the 2,500 mile long by 200-mile wide migration corridor, and the small size of the Project, the probability of whooping crane collision is presumed low (WPC Inc. 2011; Wenck 2012). Based upon mitigation measures and environmental commitments to minimize the risk of disturbance to whooping cranes, any adverse effects of the proposed action are extremely unlikely. Due to the Project area having potential stopover or suitable foraging or roosting sites, the proposed Project may affect but is not likely to adversely affect the whooping crane population (Wenck, 2013).

South Dakota Listed Species
In consultations with the SD GFP, concern was expressed regarding the impact to native grasslands and wetlands. The results of an analysis of the known populations, habitats and/or sightings of state listed species in relation to the Project area are shown below:

Banded Killifish
Banded killifish is a small fish found in streams with shallow, clear water and a sandy or gravelly bottom (Ashton and Dowd, SDGFP 1991). No known populations of the banded killifish exist within the Project vicinity. Streams have been avoided during the Project planning process. There would be no effect on the population.

Blacknose Shiner
Blacknose shiner requires clear, cool streams with sand and gravel beds, and deep pools with abundant vegetation (Ashton and Dowd, SDGFP 1991). No known populations of the blacknose shiner exist within the Project vicinity. Streams have been avoided during the Project planning process. There would be no effect on the population.

Finescale Dace
There are no known populations and no suitable habitat within the Project area for finescale dace (Ashton and Dowd, SDGFP 1991). There would be no effect on the population.

Longnose Sucker
The longnose sucker is found in cool, spring-fed creeks. South Dakota populations are on the edge of its range and are found in the Belle Fourche River drainage north of the Black Hills (Ashton and Dowd, SDGFP 1991). No known populations of the longnose sucker exist within the Project vicinity. There would be no effect on the population.

Northern Pearl Dace
The only areas in South Dakota where northern pearl dace occurs is the Sandhills Region in the southern part of the state (Cunningham, USDA 2006). No known populations of the northern pearl dace exist within the Project vicinity. There would be no effect on the population.

Northern Redbelly Dace
Northern redbelly dace are present in spring-fed streams in the southern and eastern portions of the state (Ashton and Dowd, SDGFP 1991). There are no known populations and no suitable habitat within the Project area for northern redbelly dace. There would be no effect on the population.

Sicklefin Chub
This small bottom-feeder can be found in the main channels of large turbid rivers in areas of strong current over sand or fine gravel. Populations of sicklefin chub are present in the Missouri River along neighboring counties (Ashton and Dowd, SDGFP 1991). The Project would have no effect on the sicklefin chub.

Sturgeon Chub
This small bottom-feeder can be found in the main channels of large turbid rivers in areas of strong current over sand or fine gravel. Populations of sturgeon chub are present in the Missouri River along neighboring counties (Ashton and Dowd, SDGFP 1991). The Project would have no effect on the sturgeon chub.

Eastern Hognose Snake
The eastern hognose snake can be found in Clay, Union and Yankton Counties in the southeast corner of South Dakota (Ashton and Dowd, SDGFP 1991). There are no known populations and no suitable habitat within the Project area for the eastern hognose snake. There would be no effect on the population.

False Map Turtle
Within the Project vicinity, the false map turtle has been reported along the Missouri River drainage (Ashton and Dowd, SDGFP 1991). There are no suitable habitats within the Project area. There would be no effect on the population.

Lined Snake
The lined snake can be found in Clay, Union and Minnehaha Counties in the southeast corner of South Dakota (Ashton and Dowd, SDGFP 1991). There are no known populations and no suitable habitat within the Project area for the lined snake. There would be no effect on the population.

American Dipper
The American dipper is only found in the Black Hills area of South Dakota (Baker, 2005). There is no suitable habitat for the American dipper in the Project area. There would be no effect on the population.

Bald Eagle
The bald eagle has recently been removed from the federally endangered list; however it is still listed in South Dakota as a threatened species. The BGEPA (16 USC 668-668c), enacted in 1940, prohibits anyone, without a permit issued by the Secretary of the Interior, from taking bald eagles, including their parts, nests, or eggs. “Take” is defined

as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest or disturb.” “Disturb” is defined as “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available: (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.”

The bald eagle is almost always found near water, primarily on river systems, large lakes, reservoirs and coastal areas. These birds are mainly scavengers, feeding on dead and dying fish, usually early in the morning. Although capable of catching live fish at the water's surface, they also steal fish from other birds, such as osprey. Waterfowl, rabbits, rodents and other animals, taken mostly as carrion, are also eaten. Bald eagles generally roost together in large mature trees surrounded by a buffer of smaller trees. Daytime perches are usually within 180 feet of water. (Ashton and Dowd, SDGFP 1991).

Bald eagles were observed only once during spring 2010 avian surveys and twice during 2012 avian surveys (WPC 2010; Wenck 2012). No known bald eagle nests exist within the Project area. Suitable habitat for foraging is scarce within the Project area and few large trees exist within the Project area to provide roosting or nesting locations. The proximity of the Project to the Missouri River (2-3 miles west of the Project site) may explain the rare sightings of birds traveling to and from wintering grounds. There would be no effect on the population.

Osprey

The osprey is a large raptor, habitat includes lakes, large rivers and coastal bays. Ospreys nest at the tops of large living or dead trees, on cliffs, on utility poles or on other tall manmade structures. Few large trees exist within the Project area to provide roosting or nesting locations. There were no observations of osprey during avian surveys and no records of osprey nesting in the vicinity of the Project. There would be no effect on the population.

Peregrine Falcon

The peregrine falcon is a crow-sized bird with pointed wings, a narrow tail and a rapid wingbeat. It migrates along larger bodies of water, often close to waterfowl and shorebird concentrations, feeding primarily on birds and rarely small mammals, lizards, fish and insects. Peregrines pursue their prey from a perch or while soaring. Suitable nesting habitat is generally rocky cliffs 200-300 feet high, large stick nests of other species, tree hollows and man-made structures. A peregrine falcon was observed only once during Spring 2010 avian surveys (WPC 2010). There are no records of peregrine falcon nesting in the vicinity of the Project (Ashton and Dowd, SDGFP 1991) and no suitable habitat for roosting or nesting within the Project area. There would be no effect on the population.

Black Footed Ferret

There are no populations within the Project area of the black-footed ferret (USFWS 2013). There would be no effect on the black-footed ferret.

Northern River Otter
Within the Project vicinity, the northern river otter has been reported along the Missouri River in Hughes County (Ashton and Dowd, SDGFP 1991). There have been no reports of sightings of the river otter within the Project area, as there are no suitable habitats available. There would be no effect on the population.

4.7.3 Cumulative Effects

Project planning, construction scheduling and other mitigation measures would limit the various impacts listed above; however, any effects to federal and state-listed species would be amplified due to the already diminished habitat and populations of the species. Development of the Project would also add to the existing and proposed future wind development in the state, thus contributing to cumulative effects to habitat and populations.

Based on the analysis above, the cumulative effects on special status species from the Project, in combination with past actions, primarily agriculture and associated development would not be expected to result in significant impacts to any species.

4.7.4 Mitigation Measures

CCWF would implement the following measures during Project planning, construction and post construction (operation) phases to limit the impacts on federally and state listed species and their habitats:

Turbine siting
During the Project design phase, previously disturbed areas, such as cropland, were targeted for turbine siting, access road layout and collector line placement. Environmentally sensitive native landscapes, such as grassland, CRP land, wetlands and surface waters were avoided to minimize impact to populations and habitats of listed species. Turbines would also be placed outside the 1-mile buffer zone of existing sharp-tailed grouse leks.

Turbine and Tower Design
Turbines designated for use at CCWF would be consist of un-guyed tubular towers, slow-moving rotors, and few perching surfaces, reducing the potential for bird collisions.

Buried Collector Line System
All collector lines between turbines would be installed underground, eliminating the potential for bird strikes and electrocutions. The only location of overhead lines would be at the substation, which is located adjacent to Basin Electric’s existing 230 kV overhead system.

Whooping Crane Monitoring
If roosting, foraging, or in-flight whooping cranes are observed within one mile of the Project site, construction and operation would cease until the U.S. Fish and Wildlife Service (USFWS) is contacted. The USFWS must be contacted within 24 hours, or the next business day, whichever comes first, in order to evaluate the level of disturbance risk to the individuals present within the vicinity of the Project area.

Following coordination with the USFWS, activities would resume if it is unlikely the birds would be disturbed by the continuation of the activities

Bird and Bat Conservation Strategy
A Project-specific Bird and Bat Conservation System (BBCS) has been developed to document the steps taken to avoid and minimize effects to birds and bats during the construction phase. It also addresses the post-construction monitoring efforts for mortality and habitat effects, and uses many of the components suggested in the USFWS Avian Protection Plan Guidelines (USFWS 2012). Additional information can be found in the BBCS for the following mitigation measures:

Construction Phase Measures
- Construction Timing
- Avoidance of Native Landscapes – Sharp Tailed Grouse
- Eagle use surveys and monitoring
- Raptor Nest and Eagle Nest Surveys
- Construction Personnel Training

Operations Phase Measures
- Post Construction Fatality Monitoring for Birds and Bats
- Post Construction Eagle Use Monitoring
- Raptor Nest Surveys
- Whooping Crane Monitoring
- Operations Personnel Training
- Adaptive Management – Identification and Minimization of Impacts

Pollution Prevention
A stormwater runoff permit would be obtained prior to construction. Compliance with this permit and the associated stormwater pollution prevention plan would ensure that surface water is not adversely affected by runoff from disturbances and construction areas.

As with any construction activity, there is a possibility of spilling fuel, hydraulic fluid, or other hazardous substances. The potential of such events would be minimized through implementation of the environmental protection measures described in site pollution prevention plans

Construction equipment would be equipped with spill cleanup kits. Equipment refueling would take place at secure areas, away from wetlands or drainages. These measures would ensure that surface and ground water quality is not degraded through spillage of contaminants.

Dust emissions during construction activities would be controlled with water applied to roads and pads, as required.

4.7.5 No Action Alternative

Under the no action alternative, increased disturbance to threatened and endangered species would not occur. The overall impacts to threatened and endangered species would be less under the no action alternative.

4.8 Cultural Resources

Cultural Resources are physical features, both natural and manmade, associated with human activity. These may include, but are not limited to, pioneer homes, buildings or old roads; structures with unique architecture; prehistoric village, camp, procurement, or sacred sites; historic or prehistoric artifacts or objects; rock inscription; human burial sites; earthworks, such as battlefield entrenchments or mounds, and traditional cultural properties (TCP). These nonrenewable resources often yield unique information about past societies and environments, and provide answers for modern day social and conservation problems. Although many have been discovered and protected, there are numerous forgotten, undiscovered, or unprotected cultural resources in rural America. (NRCS, 2013) Cultural resources that meet the eligibility criteria for listing in the National Register are termed “historic properties” under the National Historic Preservation Act (NHPA).

Section 106 of the NHPA requires federal agencies to take into account the effects of their Projects on historic properties and give the Advisory Council on Historic Preservation (Council) a reasonable opportunity to comment. The regulations implementing Section 106 require Western to consult with the State Historic Preservation Office (SHPO) and appropriate Tribal Historic Preservation Office (THPO). Even if an Indian tribe has not been certified by the National Park Service to have a THPO that can act for the SHPO on its lands, Indian tribes must be consulted about Projects on or affecting their lands. Tribes must also be consulted when Projects off tribal lands would impact historic resources of significance to the tribe. These consultations must respect tribal sovereignty and the relationship between the federal government and Indian tribes (government-to-government consultation).

Western reached out to 11 tribes by letter requesting their participation in the Section 106 process and asked for general information about the location of places of traditional and religious cultural importance (PTRCI). Western contacted the following Tribes: Yankton Sioux Tribe, Santee Sioux Nation, Rosebud Sioux Tribe, Turtle Mountain Band of

Chippewa, Three Affiliated Tribes, Crow Creek Sioux Tribe, Cheyenne River Sioux Tribe, Lower Brule Sioux Tribe, Standing Rock Sioux Tribe (SRST), Fort Peck Assiniboine & Sioux Tribes, and Oglala Sioux Tribe.

The SRST was the only Tribe to respond to the request and Western has conducted six government-to-government consultation meetings and one conference call with the Tribe. In addition, dozens of calls and hundreds of e-mails have been initiated as part of Western's government-to-government consultation effort. The Sisseton-Wahpeton-Oyate Tribe, while not a formal consulting party, did participate in one face-to-face meeting between Western and the SRST.

At the request of the SRST, Western's parent agency, the Department of Energy (DOE) has also consulted with the Tribe. As required through 36 CFR Part 800.6(a)(1), the Advisory Council on Historic Preservation (ACHP) has been invited to participate in consultation and has accepted. Consultation between Western, the DOE, SHPO, ACHP, the Project applicant, and the SRST is continuing and will be ongoing until such a time as the Section 106 consultation process has concluded and the proposed Project is energized and interconnected into Western's transmission grid.

4.8.1 Affected Environment

In accordance with the National Historic Preservation Act (36 CFR Part 800), a search of the South Dakota State Historical Preservation Office database identified seven sites, two cemeteries, eight surveys and fourteen standing structure surveys performed in the vicinity of the Project site (one-mile buffer). These sites are listed in the following Tables 4.8.1-1 through 4.8.1-4.

Table 4.8.1-1 SD SHPO – Previously Recorded Sites

Site Number	Site Type	Features	Recommendation	NRHP Evaluation
39CA286	Stone Feature	Cairns, Stone Circle	Avoidance	Unevaluated
39CA287	Historic/ Architectural	Corral, Collapsed Building, Collapsed Windmill	No Avoidance	Not Eligible
39CA288	Historic	Foundation, Collapsed Outhouse, Material Scatter	No Avoidance	Not Eligible
#26669	Architectural	Gothic Arched Barn	Avoidance	NR Eligible
#27086	Architectural	Granary	No Avoidance	Not Eligible
#27087	Architectural	House & Barn	No Avoidance	Not Eligible
#56032	Architectural	Quonset hut & Windmill	No Avoidance	Not Eligible

Table 4.8.1-2 SD SHPO Records Search Results – Cemeteries

Description	Eligibility
Kvernes Cemetery	Not Eligible
Gale Cemetery	Not Eligible

Table 4.8.1-3 SD SHPO Records Search Results
Cultural Resource Surveys and Investigations

Archive	Author(s)	Report Title
ACA-0006	Haberman	Cultural Resources Survey of Three Grade Stabilization Projects in Campbell County, South Dakota. P.O. 43-6740-8-37. No CIS
ACA-0075	Littlefield	Letter Format Report for a Level III Cultural Resources Inventory for NRCS Project #007CA08 Pipeline and Tanks, T127N, R78W, Section 30, 31, and T127N, R79W, Section 25, Campbell County, South Dakota
ACA-0076	Littlefield	Letter Format Report for a Level III Cultural Resources Inventory for NRCS Project #103CA06-ATF Pipeline, Well and Tank Location Changes, T126N, R78W, Section 15, 21, 22, 26, 27, 28, 34, 35, Campbell County, South Dakota
ASD-0024	Clark, Lamie, Priebe, Busch, Laundry, Kerst, Williams, Fosha, Short, Harms, Williams, Hanenberger, and Martin	An Intensive Cultural Resource Survey of Selected Title VI Lands Located Along Lewis and Clark Lake, Lake Francis Case, Lake Sharpe, and the Oahe Reservoir in South Dakota. Volume V: Lake Oahe, Oahe Dam. CIS No. 2408
ESD-0016	Lueck, Winham, and Butterbrodt	Cultural Resources Survey of the Web Water Pipeline Project in Campbell, Potter, and Walworth Counties, South Dakota
ESD-0422	Buechler	A Cultural Resources Records Search and Inventory Survey of the Herreid and Mound City Exchange Cable Routes in Campbell and Mcpherson Counties, South Dakota. Project No. 08-57
ESD-0476	Buechler	Results of a Stratified Disproportionate Sample Survey of Valley Telecommunications Cooperative Association, Inc.'s Pollock and Glenham Exchange Cable Routes in Campbell and Walworth Counties, South Dakota. Project No. 10-46
MTO-0001	Falk, Pepperl, and McCormick	Cultural Resource Survey of the East Shore of Lake Oahe, South Dakota. Technical Report No. 83-01, Department of Anthropology, University of Nebraska
WSD-0181	Buechler	Cultural Resources Inventory Survey of the Pollock and Glenham Exchange Upgrade Project for Valley Telecommunications Cooperative Association, Inc. in Campbell and Walworth Counties, South Dakota. Project No. 98-9

Table 4.8.1-4 SD SHPO Records Search Results – Structures

SHPO ID	Roof Style	Construction	Arch. Style	Type	Stories	Est. Const.	Eligibility
47	Hip	Wood Frame	Craftsman	Bungalow	1	1925	Not Eligible
48	Truncated Hip	Wood Frame	No Style	Foursquare	2	1920	Not Eligible
50	Gable	Earth	No Style	Sod House	1.5	1900	NR Eligible
51	Gable	Wood Frame	No Style	Side Gable	2	1902	Not Eligible
52	Gable	Wood Frame	No Style	Side Gable	1	1950	Not Eligible
53	Gable	Wood Frame	No Style	Side Gable	1.5	1949	Not Eligible
54	Pyramidal	Wood Frame	No Style	Foursquare	2	1920	Not Eligible
55	Gable	Wood Frame	Craftsman	Gable Front	1.5	1925	Not Eligible
56	Gable	Wood Frame	No Style	Side Gable	1.5	1925	Not Eligible
58	Gable	Wood Frame	No Style	Gable Front	1	1920	Not Eligible
59	Arch	Wood Frame	No Style	Barn	2	1915	NR Eligible
60	Gable	Wood Frame	No Style	Gable and Wing	1.5	1925	Not Eligible
339	Gable	Wood Frame	No Style	Side Gable	1.5	1920	Not Eligible
340	Hip	Wood Frame	No Style	Not noted	2	1915	Not Eligible

4.8.2 Direct and Indirect Effects

To comply with Section 106 of the NHPA, an area of potential effects (APE) for cultural and historical resources must be defined that is specific to the proposed undertaking. Areas of direct effect would be associated with turbine, Operation and Maintenance building and substation construction, laydown areas, access roads and underground collector lines.

Indirect effects may include the disturbance of untilled land to make up for loss of cultivated acres. No removal of vacant farm sites, including structures potentially eligible for listing in the NRHP, or disturbance of TCP would occur.

Project APE and Cultural Resources Inventories

The physical or "construction" APE (as determined by Western in consultation with the SHPO) consists of 55 turbine locations, an O&M building site, 14.3 miles of access roads, 10 miles of crane paths and 32.5 miles of underground collector lines which totaled 1449 acres. A visual APE (also determined by Western and the SHPO consisting of a one mile buffer zone around the Project footprint was also taken into consideration during the Project.

A Class III Intensive Cultural Resource Inventory (Beaver Creek Archaeology 2013-2015) and a TCP survey (Renegade Services 2013-2015) were performed within the Project's APE. A summary of the inventory is presented in Tables 4.8.2-1 and 4.8.2-2. This inventory identified five prehistoric sites (39CA285, 286, 287, 288, 289). The prehistoric sites are stone feature sites. The historic sites include (39CA290 and 39CA291) are recommended potentially eligible to the NRHP. See Table 4.8.2-2 for a list of sites.

Table 4.8.2-1 Class III Survey Site Summary

Site No.	Site Type	Site Components	Eligibility Recommendation
39CA285	Stone Feature	Stone circle, cairn	Potentially Eligible
39CA286	Stone Feature	Stone circle	Potentially Eligible
39CA287	Stone Feature	Cairn	Potentially Eligible
39CA288	Stone Feature	Cairn	Potentially Eligible
39CA289	Stone Feature	Stone circle, cairn	Potentially Eligible

Source: Class III Intensive Cultural Resource Inventory in Campbell County, SD. Beaver Creek Archaeology, September 2013

Table 4.8.2-2 Class III Survey Stucture Summary

SHPO No.	Site Type	Site Components	NRHP Eligibility
39CA290	Historic	Corral, Collapsed Building, Collapsed Windmill	Potentially Eligible
39CA291	Historic	Foundation, Collapsed Outhouse, Material Scatter	Potentially Eligible
CA00000540, CA00000541	Architectural	Quentin Larson Farmstead	Eligible Eligible
CA00000048	Architectural	Orland Geigle Farmstead	Eligible
CA00000566, CA00000567	Architectural	Martha Kluckman Farmstead	Eligible Eligible
CA00000050	Architectural	Martin Ankerson Farmstead	Not Eligible
CA00000051	Architectural	Larry Odde Farmstead	Not Eligible
CA00000053	Architectural	Gary Sjomeling Farmstead	Not Eligible
CA00000340, CA00000569, CA00000570	Architectural	Abandoned Farmstead	Not Eligible
CA00000056	Architectural	Earl Fjeldheim Farmstead	Not Eligible
CA00000058	Architectural	Abandoned Dwelling	Not Eligible
CA00000060	Architectural	Gary Larson Farmstead	Not Eligible
CA00000339	Architectural	Abandoned Dwelling	Not Eligible
CA400001, CA400002, CA400003, CA40003	Architectural	Dienert Farmstead	Not Eligible
CA00000544	Architectural	McKary Granary	Not Eligible
CA00000541	Architectural	Schultzle House	Not Eligible
CA00000538	Architectural	Windmill	Not Eligible

Source: Class III Intensive Cultural Resource Inventory in Campbell County, SD. Beaver Creek Archaeology, September 2013

A standing structure survey was completed in this same timeframe by Beaver Creek Archaeology. The survey inventoried 22 farmsteads and individual structures (Orland Geigle Farmstead, Martin Ankerson Farmstead, Oahe View, Larry Odde Farmstead, Gary Larson Farmstead, Martha Kluckman Farmstead, Schuetzle Farmstead, McKary Granary, Fjedheim Farmstead, Dienert Farmstead, one abandoned farmstead, two abandoned dwellings, CA00000058, CA00000339, CA00000340, CA00000538, CA00000569, and CA00000570) for listing in the NRHP (Table 4.7.2-2). Three of these farmsteads encompassing five structures (Orland Geigle Farmstead (CA00000048) Quentin Larson Farmstead (CA00000540 and CA00000541) and the Martha Kluckman Farmstead (CA00000566 and CA00000567) have been considered eligible for listing in consultation with the SHPO. Evaluation and mitigation measures to address the visual impacts to these structures would be determined in consultation with the SHPO and other consulting parties and through the signing of a Memorandum of Agreement (MOA). The Advisory Council on Historic Preservation has been invited to participate in consultation and provide comments on the MOA which they have accepted.

In addition, and at the request of the Standing Rock Sioux Tribe and Western, a visual impact assessment was prepared by Beaver Creek Archaeology for 11 different observer

points on ACOE land within the Standing Rock Reservation four miles from the Project area on the west bank of the Missouri River (Table 4.8.2-3). These locations were selected based on 13 known and recorded sites.

The assessment has shown that the Project's wind turbines would be highly visible from several of the identified site locations, less visible from others. This report was provided to the Standing Rock Tribal Historic Preservation Office (THPO) for review and comment. The THPO did not provide comment regarding the visual effect of the turbines on these sites so Western has determined that since the sites are outside of the physical and visual APE and unevaluated for listing on the NRHP, there would be no visual or audible adverse effect to the sites.

Table 4.8.2-3 Sites Used in the 3D Virtual Viewshed Analysis

O.P.	Site	Description	Visible/Not Visible
1	39CO142, 39CO56	Foundation Native American Artifact Scatter	Visible Visible
2	39CO207	Native American Earthlodge Village (Partially Inundated)	Visible
3	39CO90	Native American Artifact Scatter	Visible
4	39CO133	Sioux Depression	Visible
5	39CO132	Sioux Artifact Scatter	Visible
6	39CO91	Native American Stone Circle	Visible
7	39CO89	Unknown Alignment	Not Visible
8	39CO208	Native American Earthlodge Village (Inundated)	Visible
9	39CO114	Early Archaic Isolated Find	Visible
10	39CO111, 39CO211	Pelican Lake Isolated Find (Inundated) Native American Artifact Scatter (Inundated)	Visible Visible
11	39CO131	Sioux Burial (Inundated)	Visible

Source: Campbell County Wind Farm Viewshed II. Beaver Creek Archaeology, February 2015

4.8.3 Cumulative Effects

Direct, indirect and cumulative effects to cultural resources would be minimal as the Project developers and builders have committed to avoidance of all identified historic properties. Archaeological and Tribal monitors would be onsite during construction activities to ensure that historic properties are left undisturbed.

Visual impacts due to turbine erection are unavoidable but documentation of pre-construction vistas around qualified historic properties would mitigate these impacts to the extent practicable.

4.8.4 Mitigation Measures

Measures have been and will be taken to ensure all historic and potentially historic properties within the Project APE are avoided and protected during construction. The

location of the turbine near 39CA285 has been revised to avoid impacts to this site. Sites 39CA285-289 will be avoided during construction and will not be affected by the proposed Project. A 50 to 100-foot buffer zone will be established by fencing around each site and an archaeological or Tribal monitor will be on site during construction activities to ensure that the sites are avoided. Mitigation measures to address the visual impacts to eligible standing structures will consist of recordation (drawings, measurement, etc.) and photographic documentation. Specific requirements of this will be determined in consultation with the SHPO, ACHP and other consulting parties and implemented through the signing of a MOA. The MOA will also contain an Unanticipated Discovery Plan for Cultural Resources and an Inadvertent Discovery Plan for Human Remains and Funerary Objects.

4.8.5 No Action Alternative

Under the no action alternative, increased disturbance to cultural resources sites from site clearing and excavation activities would not occur. The overall impacts to cultural resources would be less under the no action alternative.

4.9 Visual Resources/Aesthetics

4.9.1 Affected Environment

The visual setting of the Project is rural, with 61 percent of the Project area being used for crop production of various kinds (see Figures 3.4-1 through 3.4-4) and 32 percent of the Project being used for grassland/pasture. Roads, trails, signs, windbreaks, fences, homesteads, and agricultural activities are some of the visible features. Typical structures in the Project area are residences and farm buildings. Many of the residences that were once inhabited are now vacant. Nearby communities include Herreid, Mound City, Pollock and Mobridge.

4.9.2 Direct and Indirect Effects

The turbines would be painted white, stand a total of approximately 432 feet above ground and be visible from 10 miles or more. Selected turbines would have blinking lights that would come on at dusk and would shut off at dawn. The turbines would also cast shadows on the ground and may induce a flicker effect during daylight hours. This would be limited to the immediate area around each turbine.

The Project substation would introduce an industrial feeling to the immediate vicinity of the substation, however this would be limited as the substation is a small feature in a large landscape and well positioned in a remote area of the Project.

Visual impacts from the turbines, lights, and roads would occur from the Project; however, the Project area would retain the rural sense and remote characteristics of the vicinity.

4.9.3 Cumulative Effects

Visual impacts from the turbines, lights, and roads would occur from the Project. This would add to the past impacts of agricultural, residential, and transportation development. However, the sites would retain their rural setting and appearance.

4.9.4 Mitigation Measures

No mitigation measures are anticipated.

4.9.5 No Action Alternative

Under the no action alternative, visual impacts from turbines, lights, and roads would not occur. The overall impacts to visual resources would be less under the no action alternative.

4.10 Noise

4.10.1 Affected Environment

The Project site is in a rural, predominantly agricultural area. Background noise would typically include wind, farming activity and livestock, recreation and vehicles traveling on paved and gravel roads at various speeds. Typical baseline noise levels likely range from approximately 38 to 48 dBA. Potential noise receptors in the vicinity include scattered rural residences. See table 4.10.1-1 for a comparison of noise levels.

Table 4.10.1-1 Noise Level Comparison

Source	Sound Level (dB)
Construction Activity[1]	84
Highway at 15 feet[2]	87
Agricultural Cropland[1]	44
Rural Residential[1]	39
Wilderness-Ambient[1]	35

Sources: 1. EPA, 1974
2. Federal Highway Administration, 1997

4.10.2 Direct and Indirect Effects

Noise generated by construction activities would occur intermittently over the construction period and would be generated by an increase in traffic on local roads, as well as heavy equipment operation. Construction on the turbines, access roads and collector lines would be temporary, with the majority of the noise coming from moving the equipment from location to location. This may cause noise levels to increase, but only for a short time, and would only occur during daylight hours.

Operating noise levels for the wind turbines would be in the range of 94 dBa to 105 dBa, depending on wind speed. Turbines would not be located less than 1,000 feet from any

residence, therefore noise issues from turbines during the operations phase are not anticipated.

4.10.3 Cumulative Effects

Cumulative effects on noise are the same as those described for direct and indirect effects.

4.10.4 Mitigation Measures

There are no federal noise standards that directly regulate noise from the operation of wind turbines. EPA guidelines recommend a day-night average sound level (Ldn) of 55 dBA in typically quiet outdoor areas, farms and residential areas. In order to achieve the recommended Ldn, wind turbines would be set back at least 1,000 feet from occupied residences.

4.10.5 No-Action Alternative

Under the no action alternative, intermittent increases in noise levels would not occur during the construction period. Also, any increases in noise levels from turbine operations would not occur. The overall impacts to noise levels would be less under the no action alternative.

4.11 Socioeconomics

4.11.1 Affected Environment

The Project site is located in Campbell County, South Dakota, on the east side of Lake Oahe (Missouri River). The Project is surrounded by the small towns of Pollock, Herreid and Mound City. South Dakota State Highway 1804 runs through the Project, along the river bluff. The area can be characterized as rural, with farm fields, pastures and a number of home sites. The county has a total population of 1,466 and a density of 2 people per square mile.

The major industry in Campbell County is agriculture, with 46% of all jobs in the county being in the agriculture sector. The county has an aging, declining population (see Table 4.11.1-1). The median age for the county is 50.0 years and the average age of principal farm operators is 56.0 years.

The Project is located entirely within the Mobridge-Pollock School District (#62-6). Other area schools include the Herreid Independent School District (#10-1), which serves Herreid and Mound City. The closest city with services is Mobridge (Pop. 3,476), which is 20 miles southwest of the Project.

Table 4.11.1-1 provides a detailed listing of socioeconomic data for the nearest cities to the CCWF project area as well as Campbell County itself in comparison to the rest of South Dakota and the United States. The data show a significant decline in population over the ten year period from 2000 to 2010 and indications of an aging workforce due to

scarcity of employment opportunities. Median incomes and home values are significantly below those of the rest of South Dakota and the United States.

Table 4.11.1-1 Current Socioeconomic Status

Population Center	Population (2010)	Percent Change (2000)	Percent White	Percent Below Poverty Level	Percent Unemployed	Median Age	Median Home Value	Median Income
Pollock	228	-32.7	97.9	17.7	4.0	52.9	$33,626	$26,672
Herreid	422	-12.4	96.1	6.3	4.0	49.3	$35,902	$31,070
Mound City	67	-20.2	98.6	11.9	4.0	59.3	$20,072	$41,308
Campbell County	1,466	-17.7	98.2	11.2	4.0	50.0	$41,300	$40,385
South Dakota	814,180	+7.8	84.7	13.8	4.3	36.9	$127,000	$48,010
U. S.	308,745,538	+9.7	77.9	14.3	-	37.2	$186,200	$52,762

Source: U.S. Census Data (2000 and 2010) and South Dakota State Data Center

4.11.2 Direct and Indirect Effects

A temporary positive impact would take place during construction. Employees of excavation and turbine erection contractors would spend money on food, lodging and other services for a period of approximately 6 months.

Over the long term, on-site management and skilled technicians would be hired to work at the Project. This would add jobs to a depressed economy and increase the need for housing. According to the Campbell County Development Association, a new fourplex is being planned in Pollock to house employees of the Project which would increase property taxes. Land purchases, lease agreements and royalty payments would create increased income for landowners in an area where options for increased income are limited. Property taxes for the wind farm would be assessed for the life of the Project, approximately 25 years, benefiting the local economy. Overall, the socioeconomic effect would be positive.

4.11.3 Cumulative Effects

Cumulative effects on socioeconomic conditions are the same as those described for direct and indirect effects.

4.11.4 Mitigation Measures

No mitigation measures are anticipated.

4.11.5 No Action Alternative

Under the no action alternative, the temporary and long-term positive impacts such as an increased temporary workforce, the need for increased temporary and permanent housing, increased income and increased property values would not occur. The overall impacts to local socioeconomic conditions would be less under the no action alternative.

4.12 Environmental Justice

The goal of environmental justice is to ensure the fair treatment and meaningful involvement of all people with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including a racial, ethnic, or socioeconomic group, should bear a disproportionate share of potentially adverse human health and environmental effects of a Federal agency action, operation, or program. Meaningful involvement means that affected populations have the opportunity to participate in the decision process and their concerns are considered.

Executive Order (EO) 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations) is intended to ensure that adverse human health and environmental effects of agency actions would not disproportionately impact minority and low-income populations, including Native American Indian Tribes. For purposes of this section, minority and low-income populations are defined as follows:

> Minority Populations: People of Hispanic or Latino origin of any race, Blacks or African Americans, American Indians or Alaska Natives, Asians, and Native Hawaiian and other Pacific Islanders.
>
> Low-Income Populations: People living below the national poverty level. The weighted average poverty threshold in 2010 was $11,137 for a single, unrelated individual and $22,315 for a family of four (U.S. Bureau of the Census).

4.12.1 Affected Environment

The Standing Rock Sioux Tribe represents the closest environmental justice population. The Standing Rock Reservation lies approximately four miles west of the Project and is separated from the Project area by the Missouri River. Table 4.12.1-1 shows minority populations in Campbell County and North Dakota.

Table 4.12.1-1 Minority and Low Income Populations

Population Group	Population (2010)	Percent Minority	Percent Below Poverty Level
Campbell County	1,466	0.7	11.2
South Dakota	814,180	11	13.8

Source: U.S. Census Bureau

4.12.2 Direct and Indirect Effects

With regard to EO 12898, an impact would be considered significant if a low-income, minority, or subsistence population in the region of the Project was disproportionately affected by the development.

Because of the distance of the Project site from the Standing Rock Reservation, no impacts to the economy, environment, or culture of the reservations are anticipated. In addition, Western's interactions with South Dakota Indian tribes are intended to address potentially adverse impacts to tribal interests outside the reservations. Therefore, discrimination toward or disproportionate impacts to low-income, minority, and subsistence populations resulting from the Project are not anticipated.

4.12.3 Cumulative Effects

Cumulative effects on minority and low income populations are the same as those described for direct and indirect effects.

4.12.4 Mitigation Measures

No mitigation measures are anticipated.

4.12.5 No Action Alternative

Under the no action alternative, the overall impacts to low-income, minority and subsistence populations would be comparable to those listed above.

4.13 Human Health and Safety

Due to the remote location of the Project site, the major activities in and around the site are vehicular travel and agricultural activities. State and federal agencies have established safety regulations for these activities, therefore they will not be addressed here. The following four subjects were analyzed for this section: Air Traffic, Electromagnetic Fields, Hazardous Materials/Hazardous Waste and Security.

4.13.1 Affected Environment

Air Traffic

Numerous small airports are located within 50 miles of the Project site. The majority of them service small, single-engine private and commercial aircraft. The closest

commercial airport is Bismarck Municipal in Bismarck, ND. The nearest regional airport is Aberdeen Regional, approximately 90 miles east of the Project site. Pierre Regional Airport is 95 miles south. Table 4.13.1-1 shows the distance and direction from the Project to airports located within 50 miles.

Table 4.13.1-1 Nearby Airports

Airport Code	Airport Name	Location		Distance from Project	Azimuth from Project
		City	State		
5T4	Herreid Municipal	Herreid	SD	9.32 mi.	108.55°
MBG	Mobridge Municipal	Mobridge	SD	16.3 mi.	17.96°
5P2	Mc Laughlin Municipal	Mc Laughlin	SD	20.91 mi.	88.52°
Y27	Standing Rock	Fort Yates	ND	21.41 mi.	137.28°
7L2	Linton Municipal	Linton	ND	25.02 mi.	176.12°
3W8	Eureka Municipal	Eureka	SD	27.0 mi.	89.16°
5P3	Bowdle Municipal	Bowdle	SD	33.79 mi.	49.26°
9F8	Hoven Municipal	Hoven	SD	38.75 mi.	31.83°
6H8	Hazelton Municipal	Hazelton	ND	40.65 mi.	179.04°
D58	Timber Lake Municipal	Timber Lake	SD	40.91 mi.	54.76°
6L5	Wishek Municipal	Wishek	ND	41.0 mi.	130.1°
ASY	Ashley Municipal	Ashley	ND	41.31 mi.	108.35°
5B5	Napoleon Municipal	Napoleon	ND	46.85 mi.	151.96°

Source: Federal Aviation Administration

Electromagnetic Fields

Commonly associated with power lines, electromagnetic fields (EMF) are invisible lines of force that surround any electrical device that is plugged in and turned on. EMF are made up of waves of electric and magnetic energy moving together (radiating) through space. Electric fields are produced by electric charges and magnetic fields are produced by the flow of current through wires or electrical devices (EPA, 2013). EMFs are present everywhere in our environment but are invisible to the human eye. EMFs are strongest close to their origin and rapidly decrease at greater distances from the source (World Health Organization, 2013).

An electromagnetic interference analysis was performed to identify impacts to AM, FM, TV cellular and microwave signals that intersect the Project area. The report found that no AM, FM, Analog or Digital TV, cellular or microwave towers exist in the Project area and impacts to those signals, if any, would be minimal (WindLogics, 2010)

Hazardous Materials/Hazardous Waste

As mentioned, the site is located in a rural part of South Dakota with few sources of hazardous materials and hazardous waste. Some possible sources may include old oil or gas tanks, fertilizer or herbicide tanks from farming activities, landfills and other private activities. A search of EPA's RCRA database identified no facilities or sites in the vicinity of the Project.

Hazardous materials associated with the operations phase of the Project include fluids used in association with turbines and substation/transformer equipment. There would be three types of fluids used in the operation of the wind turbines that are petroleum products: gear box oil, hydraulic fluid, and gear grease. These fluids are necessary for the operation of each turbine.

Site Security
Site security would be maintained during construction working hours by instructing and training site personnel to identify and report unauthorized personnel who might come onsite. Unauthorized personnel would not be allowed within the Project boundaries during construction.

The site would be patrolled during non-working hours by professional security personnel.

Site security during the operations phase would be facilitated in much the same fashion, with site employees and contractors trained to identify and report any unauthorized persons or activities. The Project Operations and Maintenance building would be locked during non-working hours with a security system installed. All turbine locations would be posted with No-Trespassing signage and would be periodically patrolled by appropriate law enforcement personnel.

4.13.2 Direct and Indirect Effects

Air Traffic
This Project would install 55 turbines. Each turbine would be 432 feet above ground level, creating a potential air traffic collision. During the day, the turbines would be visible for up to 10 miles. Select turbines would be marked with lights according to FAA Advisory Circular 70/7460-1K, Obstruction Marking and Lighting, for visibility at night. Collector lines would be buried, eliminating the need for additional suspended transmission/collection lines. In addition, the FAA's review would include evaluation of any potential interference with air traffic. 14 CFR Part 77.9 requires that notice be filed with the Federal Aviation Administration for the construction or alteration of any structure that is more than 200 ft. above ground level (AGL) at its site. Therefore, no direct or indirect effects would occur.

Electromagnetic Fields
The Project was designed to minimize disturbances to existing residences during turbine, access road and collector line placement. Turbines would be located a minimum of 1000 feet from any residence, eliminating EMF disturbance. No direct or indirect effects would occur.

Hazardous Materials/Hazardous Waste
The Project would not generate hazardous waste other than used oil products during operations. Used oil products would be managed in accordance with state and federal requirements. No direct or indirect effects would occur.

4.13.3 Cumulative Effects

Cumulative effects are the same as those described for direct and indirect effects.

4.13.4 Mitigation Measures

No mitigation measures are planned.

4.13.5 No Action Alternative

Under the no action alternative, the increased potential of an air-traffic collision would not occur. Also, any potential for the development of EMF's would not occur. The overall impacts to human health and safety would be less under the no action alternative.

4.14 Native American Religions Concerns

In addition to NEPA, NHPA, and DOE American Indian and Alaska Native tribal consultation policy (DOE 2000), other regulations that pertain to consideration of Native American religious concerns include the American Indian Religious Freedom Act (AIRFA).. AIRFA provides that agencies consider the effects of their actions on Native American religious practices. NHPA and AIRFA, both mandate consultation with affected native groups.

4.14.1 Affected Environment

Research of cultural resources indicates that Native Americans who inhabited the region throughout prehistoric and historic times typified the culture of the North American Plains Indians. Subsistence was focused on hunting, gathering, and small-scale agriculture. However, Native American hunting parties likely frequented uplands including the site of the proposed Campbell County Wind Farm.

Beaver Creek Archaeology conducted a Phase III survey of traditional cultural properties within the immediate vicinity of both phases of the Project. This survey was conducted to identify the existence of traditional cultural properties within the Project area that would be directly impacted by Project implementation and in locations within the APE that may be secondarily affected (i.e. view shed, changing land use, etc.). The results of this survey identified four Native American stone feature sites. The report recommends avoidance of these sites.

Western has initiated, and will continue consultations with tribal representatives from the SRST. This consultation would continue throughout planning and construction of the Project, including addressing comments to the EA and meeting with tribal representatives.

4.14.2 Direct and Indirect Effects

A significant impact would occur if the Proposed Action caused an unmitigated, adverse effect to a TCP or a burial site. To mitigate the potential for significant effects from activities associated with the Proposed Action, Western will address concerns expressed by the SRST during the course of Project planning and construction in accordance with Section 106 of the National Historic Preservation Act of 1966.

TCPs identified within the survey area would be marked with a 100-foot buffer and avoided. If burials or cultural sites with Native American religious values are identified during construction of the Project, work would halt within 200 feet of the site until Native Americans are notified and consulted about mitigation measures.

Consultations between Western and interested tribes would continue and recommendations resulting from these consultations would be considered and implemented to the extent practicable. Campbell County Wind, in cooperation with Native American representatives and agreements with landowners, would also implement additional measures and agreements to protect these resources.

4.14.3 Cumulative Effects

Cumulative effects are the same as those described for direct and indirect effects.

4.14.4 Mitigation Measures

TCPs identified within the survey area would be provided a 100’ buffer and avoided. If burials or cultural sites with Native American religious values are identified during construction of the Proposed Action, work would halt within 200 feet of the site until Native Americans are notified and consulted about mitigation measures.

4.14.5 No Action Alternative

Under the no action alternative, the potential for impact to a TCP or burial site would not occur. The overall impacts to Native American Religious resources would be less under the no action alternative.

4.15 Potential Impacts of Accidents, Sabotage, and Terrorism

The Project proponent is responsible for ensuring the operability and reliability of their systems. To do so, they must evaluate the potential risks from all credible events, including natural disasters (earthquakes, storms, etc.) as well as mechanical failure, human error, sabotage, cyber-attack, or deliberate destructive acts, recognizing intrinsic system vulnerabilities, the realistic potential for each event/threat, and the potential consequences. The proposed Project is not anticipated to be at any unusual risk for accidents or acts of sabotage or terrorism.

5.0 Agencies Contacted

Western consulted with applicable federal agencies, stage agencies, and tribes in the development of this analysis.

5.1 Federal Agencies

- United States Fish and Wildlife Service
- Advisory Council on Historic Preservation

5.2 State Agencies

- South Dakota Game, Fish and Parks
- South Dakota State Historic Preservation Office

5.3 Native American Tribes

- Yankton Sioux Tribe
- Santee Sioux Nation
- Rosebud Sioux Tribe
- Turtle Mountain Band of Chippewa
- Three Affiliated Tribes
- Crow Creek Sioux Tribe
- Cheyenne River Sioux Tribe
- Lower Brule Sioux Tribe
- Standing Rock Sioux Tribe
- Fort Peck Assiniboine & Sioux Tribes
- Oglala Sioux Tribe