DICKINSON RENEWABLE DIESEL FACILITY WIND TURBINE PROJECT

APPLICATION FOR A CERTIFICATE OF SITE COMPATIBILITY

Submitted to:

NORTH DAKOTA PUBLIC SERVICE COMMISSION

Submitted by:

OEE XXXI LLC

ONE ENERGY
AN INDUSTRIAL POWER COMPANY
℅ One Energy Enterprises LLC
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Stark County, North Dakota

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ACRONYMS

ADLS	AIRCRAFT DETECTION LIGHTING SYSTEM
APE	AREA OF POTENTIAL EFFECT
BNSF	BURLINGTON NORTHERN SANTE FE RAILWAY
BOP	BALANCE OF PLANT
CCR	CALIFORNIA CODE OF REGULATIONS
DNH	DETERMINATION OF NO HAZARD
DOD	DEPARTMENT OF DEFENSE
EMF	ELECTROMAGNETIC FIELD
EPA	ENVIRONMENTAL PROTECTION AGENCY
ESA	ENDANGERED SPECIES ACT
DPR	DAKOTA PRAIRIE REFINING, LLC
FAA	FEDERAL AVIATION ADMINISTRATION
FCC	FEDERAL COMMUNICATIONS COMMISSION
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
FRS	FACILITY REGISTRY SERVICE
GIS	GEOGRAPHIC INFORMATION SYSTEM
ICBM	INTERCONTINENTAL BALLISTIC MISSILE
kV	KILOVOLT
LCFS	LOW CARBON FUEL STANDARD
MDU	MONTANA-DAKOTA UTILITIES COMPANY
MPC	MARATHON PETROLEUM CORPORATION

MW	MEGAWATT
NDAC	NORTH DAKOTA ADMINISTRATIVE CODE
NDBMP	NORTH DAKOTA BEST MANAGEMENT PRACTICES
NDCC	NORTH DAKOTA CENTURY CODE
NDGF	NORTH DAKOTA GAME AND FISH DEPARTMENT
NDPDES	NORTH DAKOTA POLLUTANT DISCHARGE ELIMINATION SYSTEM
NEC	NATIONAL ELECTRICAL CODE
NESC	NATIONAL ELECTRIC SAFETY CODE
NLCD	NATIONAL LAND COVER DATABASE
NRCS	NATURAL RESOURCES CONSERVATION SERVICE
NREL	NATIONAL RENEWABLE ENERGY LAB
NRHP	NATIONAL REGISTER OF HISTORIC PLACES
NWI	NATIONAL WETLANDS INVENTORY
NWR	NATIONAL WILDLIFE REFUGES
OEM	ORIGINAL EQUIPMENT MANUFACTURER
PLOTS	PRIVATE LAND OPEN TO SPORTSMEN
PSC	PUBLIC SERVICE COMMISSION
RCRA	RESOURCE CONSERVATION AND RECOVERY ACT
ROW	RIGHT OF WAY
SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
SCP	SPECIES OF CONSERVATION PRIORITY
SHPO	STATE HISTORIC PRESERVATION OFFICE
SHSND	STATE HISTORICAL SOCIETY OF NORTH DAKOTA
SSURGO	SOIL SURVEY GEOGRAPHIC DATABASE
STEM	SCIENCE, TECHNOLOGY, ENGINEERING, OR MATH
SWCA	SWCA ENVIRONMENTAL CONSULTANTS
SWPPP	STORM WATER POLLUTION PREVENTION PLAN
USACE	UNITED STATES ARMY CORPS OF ENGINEERS
USFWS	UNITED STATES FISH AND WILDLIFE SERVICE
USGS	UNITED STATES GEOLOGICAL SURVEY
WMA	WILDLIFE MANAGEMENT AREA
WPA	WATERFOWL PROTECTION AREA

1.0 INTRODUCTION

OEE XXXI LLC (OE 31) is submitting this application (Application) for a Certificate of Site Compatibility (Certificate) to the North Dakota Public Service Commission (PSC) for the proposed Dickinson Renewable Diesel Facility Wind Turbine Project (Project) in Stark County, North Dakota.

The Project will encompass a 378.3-acre project area (Project Area) located approximately 3.5 miles southwest of the City of Dickinson, North Dakota. A 3,052.8-acre study area (Study Area), which includes the Project Area, was also analyzed. The Project nameplate capacity will be 11.75 megawatts (MWs) and consist of five 2.35 MW wind turbines. Additional Project facilities include access roads, control equipment enclosure and switching station, transformers, electrical collection and communication systems and cabling, and Aircraft Detection Lighting System (ADLS) components (or other approved light mitigation technology).

This Project is the first of its kind in North Dakota. It is located at, and will power, North Dakota's only operating renewable diesel facility, the Dickinson Renewable Diesel Facility (Renewable Diesel Facility). The Project will directly reduce the carbon intensity of the fuels produced at the Renewable Diesel Facility and further improve its competitive position in a nationwide market. Unlike the wind energy projects typically reviewed by the PSC, this Project is built to serve a single customer and will operate on that single customer's property. Unlike rural wind projects, this Project will be located entirely at an industrial site where the Renewable Diesel Facility is located and adjacent to an operating rail yard.

As North Dakota continues its energy transition and prepares for the next fifty years of liquid fuels, projects like this are an important part of that future. In 2019, Marathon Petroleum Corporation (MPC) invested more than $500,000,000 in the Renewable Diesel Facility. It started producing renewable diesel in November 2020 and is currently the second largest renewable diesel facility in the country. The Renewable Diesel Facility processes nearly 4.5 million acres worth of agricultural feedstocks annually including, but not limited to, corn oil and soy oil. It also enables an entirely new clean liquid fuels economy in North Dakota and the region. This new economy, and the liquid fuels produced by the Renewable Diesel Facility, are valued based on their low carbon intensity. The Project will directly and materially lower that carbon intensity. This Project is good for the thousands of farmers that support the industry, is good for the future of liquid fuels in North Dakota, and is good for the economy of the region and North Dakota as a whole.

The Project is being developed and constructed pursuant to a twenty-year Renewable Energy Agreement between OE 31 and Dakota Prairie Refining, LLC (DPR), an affiliate of MPC and will directly supply power to the Renewable Diesel Facility located in Stark County, North Dakota. The Project will directly interconnect to the Renewable Diesel Facility's electrical system behind the meter and directly supply and satisfy a significant portion of the Renewable Diesel Facility's electric needs. The Project will be located on-site at the Renewable Diesel Facility and on property that is owned by DPR. A letter in support of the Application from Dakota Prairie Refining, LLC can be found in Appendix N.

The Renewable Diesel Facility in Dickinson, ND

The Renewable Diesel Facility in Dickinson, ND at night

Rendering of Project at the Renewable Diesel Facility

OE 31 is an operating subsidiary of One Energy Enterprises LLC (One Energy). One Energy is an industrial power company that helps large energy users build modern, tailored, on-site power facilities. In doing so, One Energy is decarbonizing manufacturing and enabling customer control. As a vertically integrated enterprise, One Energy provides physical solutions including *Wind for Industry*® and ManagedHV™, as well as analytics and commercial offerings to enable end users to fully customize their energy experience. Everyday items are being produced cleaner and more sustainably thanks to *Wind for Industry*® projects – from dishwashers, sliced turkey products, and soda cans, to cement and plastic products. Founded in 2009, One Energy is the largest installer and owner of behind-the-meter wind energy in the United States.

1.1 COMPLIANCE WITH NDCC CH. 49-22 AND NDAC CH. 69-06-10

The North Dakota Energy Conversion and Transmission Facility Siting Act, North Dakota Century Code (NDCC) Chapter 49-22 (Siting Act) requires the owner of a wind energy conversion facility exceeding 0.5 MW to obtain a Certificate from the PSC to locate, construct, and operate the facility in the state of North Dakota. An application for a Certificate must meet certain criteria set forth in the Siting Act. In addition, North Dakota Administrative Code (NDAC) Chapter 69-06-10 sets forth the rules that apply to a wind energy conversion facility designed for or capable of generating no more than twenty MWs of electricity. The siting of energy conversion facilities is to be made in an orderly manner compatible with environmental preservation and the efficient use of resources (NDCC Section 49-22-02).

In this Application, OE 31 presents the information required by the Siting Act and the PSC's siting rules. OE 31 has considered all applicable provisions in statute and rules including exclusion and avoidance areas and the selection criteria in the design of the Project. Information regarding Project design, wind resource, and technical information has been included in this Application to allow a thorough understanding of the

Project and to aid in review by the PSC, regulatory agencies, and the public. Table 1.1-1 provides a summary of information included in this Application and the section of the document in which each siting requirement is addressed.

TABLE 1.1-1: CERTIFICATE COMPLETION CHECKLIST		
STATE AUTHORITY	**DESCRIPTION**	**SECTION**
NDAC SECTION 69-06-04-01 CERTIFICATE OF SITE COMPATABILITY		
SECTION 2: CONTENTS		
a. (1)	A description of the type of energy conversion facility proposed.	1.0, 2.4
a. (2)	A description of the gross design capacity.	1.0, 2.0
a. (3)	A description of the net design capacity.	1.0, 2.0
a. (4)	A description of the estimated thermal efficiency of the energy conversion process and the assumptions upon which the estimate is based.	N/A
a. (5)	A description of the number of acres that the proposed facility will occupy.	1.0, 2.2
a. (6) a	A description of the anticipated time schedule for obtaining the certificate of site compatibility.	2.7
a. (6) b	A description of the anticipated time schedule for completing land acquisition.	2.7
a. (6) c	A description of the anticipated time schedule for starting construction.	2.7
a. (6) d	A description of the anticipated time schedule for completing construction.	2.7
a. (6) e	A description of the anticipated time schedule for testing operations.	2.7
a. (6) f	A description of the anticipated time schedule for commencing commercial production.	2.7
a. (6) g	A description of the anticipated time schedule for beginning any expansions or additions.	2.6
b.	Copies of any evaluative studies or assessments of the environmental impact of the proposed facility submitted to any federal, regional, state, or local agency.	Appendix M
c.	An analysis of the need for the proposed facility based on present and projected demand for the product or products to be produced by the proposed facility, including the most recent system studies supporting the analysis of the need.	1.2

d.	A description of any feasible alternative methods of serving the need.	1.2.2
e.	A study area that includes the proposed facility site, of sufficient size to enable the PSC to evaluate the factors addressed in North Dakota Century Code section 49-22-09.	2.1, 5.1-5.15, 6.0-6.11
f.	A discussion of the utility's policies and commitments to limit the environmental impact of its facilities, including copies of board resolutions and management directives.	Appendix A
g.	A map identifying the criteria that provides the basis for the specific location of the proposed facility within the study area.	Figure 2
h.	A discussion of the criteria evaluated within the study area, including exclusion areas, avoidance areas, selection criteria, design and construction limitations, and economic considerations.	4.0-4.5; 4.8; Appendix L
i.	A discussion of the mitigative measures that the applicant will take to minimize adverse impacts which results from the location, construction, and operation of the proposed facility.	5.1.2, 5.2.2, 5.3.2, 5.4.2, 5.5.2, 5.6.2, 5.7.2, 5.8.2, 5.9.2, 5.10.2, 5.11.2, 5.12.2, 5.13.2, 5.14.3, 5.15
j.	The qualifications of each person involved in the facility site location study.	8.0
k.	A map of the study area showing the location of the proposed facility and the criteria evaluated.	Figure 5
l.	An 8 ½-inch by 11-inch black and white map suitable for newspaper publication depicting the site area.	Figure 11
m.	A discussion of present and future natural resource development in the area.	5.2, 5.8-5.14
n.	Map and GIS requirements. The applicant shall provide information that is complete, current, presented clearly and concisely, and supported by appropriate references to technical and other written material available to the PSC.	Figures 1-11, USB submittal
NDCC SECTION 49-22-08: DESCRIPTION OF APPLICATION REQUIREMENTS		
SECTION 1: AN APPLICATION FOR A CERTIFICATE SHALL BE IN SUCH FORM AS THE PSC MAY PRESCRIBE, CONTAINING THE FOLLOWING INFORMATION:		
a.	A description of the size and type of facility.	1.0, 2.0
b.	A summary of any studies which have been made of the environmental impact of the facility.	5.0-5.14; Appendix M
c.	A statement explaining the need for the facility.	1.2
d.	An identification of the location of the preferred site for any energy conversion facility.	2.0, Figure 1

e.	An identification of the location of the preferred corridor for any transmission facility.	N/A
f.	A description of the merits and detriments of any location identified and a comprehensive analysis with supporting data showing the reasons why the preferred location is best suited for the facility.	1.1, 2.0-2.3, 4.0-4.6, 5.0-5.15, 6.0-6.10
g.	A description of mitigative measures that will be taken to minimize all foreseen adverse impacts resulting from the location, construction, and operation of the proposed facility.	5.1.2, 5.2.2, 5.3.2, 5.4.2, 5.5.2, 5.6.2, 5.7.2, 5.8.2, 5.9.2, 5.10.2, 5.11.2, 5.12.2, 5.13.2, 5.14.3, 5.15
h.	An evaluation of the proposed site or corridor with regard to the applicable considerations set out in section 49-22-09 and the criteria established pursuant to section 49-22-05.1.	1.1, 2.1-2.2, 5.0-5.15, 6.0-6.11
i.	Such other information as the applicant may consider relevant or the PSC may require.	Complete Application including Appendices and Figures
NDCC SECTION 49-22-09(1): FACTORS TO BE CONSIDERED IN EVALUATING APPLICATIONS AND THE DESIGNATION OF SITES, CORRIDORS, AND ROUTES		
a.	Available research and investigations relating to the effects of the location, construction, and operation of the proposed facility on public health and welfare, natural resources, and the environment.	5.0-5.15, 6.1
b.	The effects of new energy conversion and transmission technologies and systems designed to minimize adverse environmental effects.	6.2
c.	The potential for beneficial uses of waste energy from a proposed energy conversion facility.	6.3
d.	Adverse direct and indirect environmental effects which cannot be avoided should the proposed site or route be designated.	6.4
e.	Alternatives to the proposed site, corridor, or route which are developed during the hearing process, and which minimize adverse effects.	6.5
f.	Irreversible and irretrievable commitments of natural resources should the proposed site, corridor, or route be designated.	6.6
g.	The direct and indirect economic impacts of the proposed facility.	6.7
h.	Existing plans of the state, local government, and private entities for other developments at or in the vicinity of the proposed site, corridor, or route.	5.2, 5.9, 6.8

i.	The effect of the proposed site or route on existing scenic areas, historic sites and structures, and paleontological or archaeological sites.	4.1, 4.2, 5.6, 5.7, 6.9
j.	The effect of the proposed site or route on areas unique because of biological wealth or because the areas are habitats for rare and endangered species.	5.14, 6.10
k.	Problems raised by federal agencies, other state agencies, and local entities.	6.11

Table 1.1-1: Certificate Completion Checklist

1.2 NEED FOR PROJECT

1.2.1 Project Need Analysis

The Project is being constructed to directly supply power to the Renewable Diesel Facility, located in Stark County, North Dakota. The Project will interconnect to the Renewable Diesel Facility behind the meter and directly supply and satisfy a significant portion of the Renewable Diesel Facility's electric needs.

Renewable diesel facilities produce low carbon diesel fuel that is functionally equivalent to traditional crude derived diesel. These facilities strive to minimize their carbon footprint at every step of the production and refining process. The ultimate product, renewable diesel, has unique market value because of its low total carbon intensity when it is produced. Reducing carbon intensity drives the need for this on-site project as the Project is imperative to enabling the Renewable Diesel Facility to meet its long-term efficiency and low carbon operational needs. In particular, one of the main drivers of the Project is its ability to enable the Renewable Diesel Facility to generate additional credits under the existing California Low Carbon Fuel Standard (LCFS) program (and future similar laws in other markets that are currently in development). To qualify for the LCFS program credits, a renewable project not located in California must be directly connected through a dedicated line to a facility such that the generation and load are both physically located on the customer side of the utility meter. 17 CCR 95488.8. Because the Project directly powers the Renewable Diesel Facility, it drives down the carbon intensity of the fuels produced by the Renewable Diesel Facility. This makes the liquid fuels and the entire supply chain that supplies the Renewable Diesel Facility more competitive in the growing nationwide clean liquid fuels market. This increased competitiveness has already spurred investment in the area and will continue to do so in the future, boosting the local and statewide economy.

1.2.2 Alternatives

The robust wind resource at the location where the Project is located and the renewable nature of wind as a resource makes wind the most viable and economic energy resource for the Project. To generate a commensurate amount of energy using solar, significantly more land (approximately 160 or more acres) would have had to be utilized given the capacity factor of solar in the area. Additionally, due to solar energy's production profile, the Renewable Diesel Facility's electrical infrastructure would require substantial and costly modifications to accept a solar energy facility that produces the same amount of energy annually as the Project. Wind's 24/7 nature also matches the Renewable Diesel Facility's load profile better than solar, which enables a greater portion of the electricity produced by the Project to be consumed on-site and enables the Project to be a lower nameplate capacity than with solar. Given the amount of land available for the Project and the location of the Project, wind was the most economical energy resource that enabled the Project to generate a sufficient amount of renewable energy for the Renewable Diesel Facility.

Non-renewable alternatives were not considered due to wind energy's cost effectiveness and the Project's purpose of reducing the carbon intensity of the liquid fuels produced by the Renewable Diesel Facility.

1.2.3 Ten-Year Plan

In accordance with NDCC Section 49-22-04 and NDAC Chapter 69-06-02, OE 31 submitted a Ten-Year Plan for years 2021-2031. The Ten-Year Plan is included in Appendix B. OE 31's Ten-Year Plan is consistent with this Application for a Certificate.

2.0 PROJECT DESCRIPTION

The Project will be located southwest of the City of Dickinson in Stark County, in southwestern North Dakota (see Figure 1, Project Location). The nameplate capacity for the Project is 11.75 MW, and it will interconnect behind the meter to directly power the Renewable Diesel Facility. The Project has a projected average output of approximately 37,500 MW hours annually.

The Project is being developed and constructed pursuant to a twenty-year Renewable Energy Agreement between OE 31 and DPR. As discussed in Section 2.4.1, the Project may use an Enercon E-103 EP2 wind turbine with a rated capacity of 2.35 MW. The Project's permanent facilities will include:

- Five wind turbines and associated equipment
- New gravel access roads and improvements to existing DPR roads as needed
- Underground electrical collection and communication lines, with above-ground junction boxes
- ADLS components (or other approved light mitigation technology)
- Control equipment enclosure and Project switching station
- Turbine transformers

2.1 STUDY AREA

The Study Area is based on a 0.5-mile buffer around the Project Area and is comprised of portions of nine sections (19 quarter sections) containing approximately 3,052.8 acres. The Study Area consists mostly of the Renewable Diesel Facility, the Bakken Oil Express rail yard, privately owned agricultural land, and ND Bureau of Reclamation land. Table 2.1-1 provides a list of the townships, sections, and ranges (all in Stark County) that are included in the Study Area. See also Figure 1, Project Location.

TABLE 2.1-1: STUDY AREA LOCATION

TOWNSHIP NAME	TOWNSHIP	RANGE	SECTION(S)
Unnamed	139 N	97 W	9,10,11,14,15,16,21,22,23

Table 2.1-1: Study Area Location

2.2 PROJECT AREA

The Project Area consists of six land parcels owned by DPR and railroad easement (totaling 378.3 acres) southwest of Dickinson, North Dakota, within Stark County. All parcels are located in Township 139N (unnamed) and Range 97W.

TABLE 2.1-2: PROJECT AREA LOCATION			
PARCEL NUMBER	PARCEL SIZE (ACRES)	PARCEL ZONING	SECTION
30000005643000	109	Stark County	15
30000005644150	66.4	Stark County	15
30000005646100	11.3	Stark County	15
30000005646000	87.2	Stark County	15
30000005642000	32.9	Stark County	14
30000005645000	39.1	Stark County	15

Table 2.2-1: Project Area Location

2.2.1 Selection of Project Area

The Project Area was selected because the land that encompasses the Project Area is primarily owned by DPR and is the site of the Renewable Diesel Facility. Selecting this land as the Project Area enables the Project's five wind turbines and associated infrastructure to be located behind the meter on-site at the Renewable Diesel Facility and enables the Renewable Diesel Facility to generate credits under existing LCFS programs while minimizing environmental impacts through co-location with an existing facility and use of previously disturbed land.

2.3 PROJECT LAYOUT

In this Application, OE 31 is providing a Project Site Layout (see Figure 2, Site Layout). The Site Layout includes the locations of five turbines, access roads, a control equipment enclosure and switching station, transformers, and underground collection lines. The Site Layout is designed to accommodate the Enercon E-103 EP2 (turbine model specifications are in Section 2.4.1).

The Site Layout complies with all applicable setback requirements as defined by the PSC and Stark County while avoiding or minimizing environmental, cultural, and economic impacts and maximizing electrical generation and efficiency. A more detailed discussion of compliance with setback requirements can be found in Section 4.0. All turbine, access road, transformer, control equipment enclosure, switching station, and collection line construction will be on previously disturbed land that is primarily owned by DPR.

2.4 PROJECT FACILITIES

The Project facilities include wind turbines, associated facilities, and temporary facilities as discussed in the following sections.

2.4.1 Wind Turbines

OE 31 utilized the Enercon E-103 EP2 turbine for analysis purposes throughout this Application. However, the wind turbine model ultimately selected for the Project may be different, depending on the technology available. Regardless of the turbine model selected, the Project will meet all applicable PSC and County setbacks and other requirements. If a turbine model other than the Enercon E-103 EP2 is selected, OE 31 will provide the PSC with updated turbine specifications, sound modeling, and shadow flicker modeling demonstrating compliance with the applicable siting requirements. Table 2.4-1 describes the characteristics of the Enercon E-103 EP2.

TABLE 2.4-1: WIND TURBINE CHARACTERISTICS	
CHARACTERISTIC	**ENERCON E-103 EP2**
Nameplate Capacity	2,350 kW (2.35 MW)
Hub Height	78.3 m (256.9 ft)
Rotor Diameter	103 m (338 ft)
Total Height	129.8 m (426 ft)
Cut-in Wind Speed	2.5 m/s (5.6 mph)
Rated Capacity Wind Speed	13.5 m/s (30.2 mph)
Cut-out Wind Speed*	25 m/s (55.9 mph) or 34 m/s (76.1 mph) if storm control operating mode is utilized
Wind Swept Area	8,332 sq. m (89,684.9 sq. ft)
*Cut-out wind speed will depend on whether the storm control operating mode is selected for turbine operation.	

Table 2.4-1: Wind Turbine Characteristics

2.4.1.1 Wind Energy Conversion System

The wind energy conversion system converts the kinetic energy contained in the moving wind into electrical energy. It consists of the rotor, the generator, and the nacelle. The rotor diameter of the turbine under current consideration is 103 meters (338 feet). The rotor consists of three fiberglass blades mounted to a hub. The rotor is attached to the generator, which is attached to the nacelle that houses the yaw system and other electrical and mechanical systems. This turbine is a direct-drive turbine that does not require a traditional gearbox. By eliminating the gearbox, this turbine offers a reduced risk of major repairs over its useful life compared to traditional gearbox-based wind turbines.

2.4.1.2 Towers

The towers on which the nacelle is mounted will be constructed of tapered tubular steel, with a hub height of up to approximately 78.3 meters (256.9 feet). All tower welds will be performed according to Prudent Wind Industry Standards. Surfaces of the tower components will be coated by the manufacturer with specialized paint designed to last the life of the turbine and to protect against corrosion. A secured steel door at the base of the tower will provide internal access to the turbine.

2.4.1.3 Foundation

Each turbine will sit atop a concrete foundation. Foundation size and design will be finalized once geotechnical analyses have been completed and the turbine model has been selected.

2.4.1.4 Lightning and Ground Protection

Lightning and ground protection for all wind farm equipment is designed and constructed to be compliant with all applicable requirements. Grounding and shielding components are integrated into the foundation

and structural elements of all equipment and conductor lines. Each wind turbine will include conductive elements in the blades and a complete grounding and shielding network within the turbine, tower, and foundation.

2.4.1.5 Lighting

Turbines will be lit to satisfy minimum Federal Aviation Administration (FAA) requirements. In addition, the Project will comply with the light-mitigating technology system requirements set forth in NDCC Section 49-22-16.4 and NDAC Chapter 69-06-11. The components and specific locations of the ADLS or other approved system will be dependent on the FAA's review of turbine technology, terrain, neighboring industrial infrastructure, and other factors.

Unlike traditional rural wind projects, this Project is co-located with a major industrial facility that is very well lit for safety at all times as part of its operations.

2.4.2 Associated Facilities

Associated facilities include access roads, the electrical collection and communication systems, transformers, and the control equipment enclosure and switching station.

2.4.2.1 Access Roads and Crane Pads

Construction and service access to each turbine location will be facilitated by a compacted gravel road within the Project Area. Access roads have been located to avoid or minimize impacts to land use and the environment including by using existing DPR private roads for the Project where possible. The permanent access roads will be approximately 20 feet wide and constructed with locally sourced gravel, if available. The Project roads will support the size and weight of maintenance vehicles and construction equipment. Following construction, the temporarily affected areas will be restored to pre-construction conditions to the extent practicable. Crane pads will be constructed at each turbine site. Each crane pad will be an approximately 40'x 60' rock pad that is designed to safely distribute the large ground loads created by the cranes that build the turbines. The crane pads will be left in place to enable more efficient service of the turbines over their life.

2.4.2.2 Electrical Collection System and Communication System

An electrical collection system consisting of buried cables will interconnect all turbines to the Project switching station. This system has been sited to minimize cost and land impacts and in consideration of other constraints. The collection system will operate at 34.5 kilovolt (kV). The voltage will be stepped down at the Project switching station to an interconnection voltage of 4.16 kV. Fiber optic cables will be used for communication and condition monitoring and will be run with the electrical cables to interconnect all turbines to the control equipment enclosure at the Project switching station. A small number of cabling junction boxes will be located above ground. Once construction is complete, the land will be returned to pre-construction conditions, to the extent practicable, following installation of the collection system.

2.4.2.3 Transformers

Each turbine will have a high-efficiency padmount step-up transformer that will increase the turbine voltage to the collection line voltage. The padmount transformers will be fully enclosed and locked and will use FR3 natural ester oil instead of traditional mineral oil. FR3 oil is a more expensive alternative to

traditional oil that is both more resistant to fire and is readily biodegradable. Additionally, the switching station will have a transformer that will reduce the collection line voltage to the interconnection voltage of 4.16 kV. The switching station may also include a small grounding transformer for safety, which will also use FR3 oil.

2.4.2.4 Control Equipment Enclosure and Switching Station

The Project's underground collection system will extend from the turbines to the Project switching station. The switching station is located on the existing site of the Renewable Diesel Facility in a previously developed area, approximately 50 feet from the Renewable Diesel Facility substation, where the Project will interconnect to provide power to the Renewable Diesel Facility. In addition to the electrical equipment related to the collection system, the switching station will also include a small control equipment enclosure to house Project monitoring and communication equipment.

2.4.3 Temporary Facilities

Other temporary facilities will be required for the construction phase of the Project including laydown areas for equipment and tool storage and a construction staff trailer, which be located on the existing area of the Renewable Diesel Facility. The temporarily affected areas will be restored to preconstruction conditions to the extent practicable after construction has been completed and in accordance with agreements with the landowner, DPR.

2.4.4 Estimated Permanent and Temporary Impacts

The Project Site Layout includes five turbine locations that meet applicable state and local setbacks, optimize the energy production, and minimize human and environmental impacts. In the table below, OE 31 has identified the approximate temporary and permanent (for the life of the Project) impacts of the Project to the areas outside of the existing Renewable Diesel Facility areas (as measured in acres). OE 31 has also identified the approximate acreage of impacts to the existing Renewable Diesel Facility areas.

TABLE 2.4-2: SUMMARY OF PERMANENT AND TEMPORARY IMPACTS OUTSIDE OF THE EXISTING DPR FACILITY AREAS AND IMPACTS TO EXISTING DPR FACILITY AREAS

PROJECT FACILITY	DESCRIPTION OF FOOTPRINT	TEMPORARY	PERMANENT	EXISTING
Turbines	Turbine construction work area of 170' radius x 5WTG	10.4 AC.		
Access roads and infrastructure located in permanent gravel areas.	Construction for roads 50' x 6028' + (Radius x 5WTG)	5.6 AC.		
	Permanent gravel roads 20' x 6973'		2.7 AC.	
	Permanent gravel area around turbines and turbine foundation pedestals, transformers, crane pads, and turbine towers x 5WTG		3.3 AC.	
	Existing DPR roads utilized for the Project 25' x 6492'			2.6 AC.

Electrical Collection and Communication Lines	Collection line work area 20' x 8061'	3.8 AC.		
Laydown/Staging Areas	Construction area of Laydown/Staging Areas x 2	0.8 AC.		
	Permanent gravel 100' x 150' Laydown/Staging Areas x 2		0.7 AC.	
	Staff Trailer on existing Renewable Diesel Facility area 8' x 40'			0.1 AC.
Switching Station and Control Equipment Enclosure	Switching Station and Control Equipment Enclosure on existing Renewable Diesel Facility area 71' x 56'			0.1 AC.
Total		20.6 AC.	6.7 AC.	2.8 AC.
*Note that negligible sections of electrical collection and communication lines with be located within the existing DPR facility area.				

Table 2.4-2: Summary of Permanent and Temporary Impacts Outside of the Existing DPR Facility Areas and Impacts to Existing DPR Facility Areas

2.5 PROJECT OWNERSHIP

The Project will be developed, owned, and operated by OE 31, a subsidiary of One Energy.

2.6 EXPANSIONS OR ADDITIONS

No additions or expansions have been identified at this time. However, should the opportunity arise for expansion or addition to the proposed Project, OE 31 may develop additional areas. OE 31 would obtain all necessary permits and approvals for any expansion project.

2.7 PROJECT SCHEDULE

OE 31 anticipates that civil construction (construction of roads and laydown yards) could begin as early as first or second quarter 2022, provided that applicable permits and approvals have been obtained. The proposed Project schedule is as follows:

- **Land Acquisition:** OE 31 entered into a contract with the DPR to ensure land rights for the Project in Second Quarter 2021.
- **Certificate of Site Compatibility**: OE 31 anticipates the Certificate will be issued by the PSC in First/Second Quarter 2022.
- **Stark County Zoning**: OE 31 has applied for a conditional use permit from Stark County, North Dakota in July 2021 and anticipates receiving the permit in First Quarter of 2022.
- **Other Permits**: OE 31 will acquire all other permits necessary for construction of the Project prior to conducting the work for which the permit is required (see Section 7.0).
- **Construction**: Project construction is anticipated to begin in the First/Second Quarter 2022 and be completed by the end of 2022.
- **Commissioning**: Upon completion of the Construction phase, the Project will undergo detailed inspection and testing procedures before being commissioned. Inspection and testing will occur

for each individual component of the wind turbines, as well as the associated communication, collection, and Supervisory Control and Data Acquisition (SCADA) system.

- **Commercial Operations**: OE 31 anticipates full commercial operation to occur in Fourth Quarter of 2022.

2.8 PROJECT COST

The estimated total cost to construct the Project, inclusive of all equipment, is approximately $24,000,000.

3.0 PROJECT CONSTRUCTION, OPERATION, AND DECOMMISSIONING

3.1 CONSTRUCTION

3.1.1 Construction Activities

Pre-construction, construction, and post-construction activities for the Project include:

- Pre-construction:
  - Conduct geotechnical analysis
  - Design high-voltage electrical system and Project switching station
  - Design protection and controls for collection system and coordinate those controls with the Renewable Diesel Facility and Montana-Dakota Utilities Company (MDU)
  - Design turbine foundations, access roads, and associated facilities
  - Conduct underground utility searches
  - Procure all necessary turbine and facility components (for example towers, nacelles, blades, transformers, etc.)
- Construction:
  - Construct access roads and temporary laydown yards
  - Install collection lines
  - Construct the Project switching station and control equipment enclosure
  - Accept delivery of turbine and crane components
  - Install turbine foundations
  - Install turbines
  - Terminate all electrical connections and tie in with the Renewable Diesel Facility substation
  - Test and commission the electrical system and each turbine
- Post-construction:
  - Restore disturbed areas not intended for permanent above-ground facilities
  - Begin operating

Haul road permits will be acquired from all necessary state and local authorities. OE 31 will acquire the necessary permits to bore under the Heart River and the Burlington Northern Santa Fe (BNSF) rail line for the installation of collection lines. The existing paved private crossing will be utilized for rail-line crossing; however, grading to and from the private crossing will be improved for the Project.

During construction, equipment and worker vehicles will travel to and from site. Peak construction traffic is anticipated when the majority of the road construction, foundation installation, and turbine component delivery will take place.

OE 31, through its affiliate One Energy Solutions LLC, will be responsible for scheduling, coordinating, and conducting the Project construction activities, including:

- Obtaining all necessary permits
- Performing or coordinating all civil, structural, and electrical engineering
- Coordinating geotechnical analysis
- Conducting surveying
- Procuring construction materials
- Managing subcontractors (expected to be limited to a foundation rebar installation crew, a boring crew, and a protection and controls system commissioning crew)
- Conducting and overseeing all construction tasks, including access road construction, foundation excavation and placement, electrical and communications installation, turbine erection, and system testing

One Energy Solutions LLC will engage in ongoing coordination with local officials throughout construction.

3.1.2 Commissioning

Upon completion of the construction phase, the Project will undergo detailed inspection and testing procedures before being commissioned. Inspection and testing will occur for each individual component of the wind turbines, as well as the associated facilities including communication systems, collection lines, SCADA system, and switching station. The turbine commissioning team will include employees of the turbine manufacturer.

3.2 OPERATION AND MAINTENANCE

One Energy Solutions LLC and the Original Equipment Manufacturer (OEM) of the turbine will provide service and maintenance for the Project.

3.2.1 Supervisory Control and Data Acquisition System

Each wind turbine will communicate directly with the SCADA system for remote performance monitoring, energy reporting, and troubleshooting. The SCADA system provides data on turbine generation and production, availability, meteorology, and communications. The SCADA system allows for 24/7 monitoring of the Project and relays alarms and communication errors to an off-site operations center.

3.2.2 Light-Mitigating Technology

Subject to FAA approval, OE 31 will install and maintain a light-mitigating technology consistent with applicable requirements. See Section 2.4.1.5 above.

3.2.3 Maintenance Schedule

The following schedule is anticipated to be used for scheduled service activities of turbines and associated electrical and communications equipment:

- **500 Hours of Operation Maintenance:**
    - The turbine OEM will perform maintenance per their standards on components including the converter, yaw, pitch, cooling, heating, and auto lubricating systems. OE 31 will coordinate the audit of this work with One Energy Solutions LLC.
- **Semi-Annual Service Inspection** *(continuing annually at 18 months, 30 months, 42 months, etc.)*:

    - The turbine OEM will perform their semi-annual turbine maintenance, including a general turbine inspection, greasing bearings, visually inspecting bolted connections, and functionally testing turbine auxiliary systems and safety chain systems (OE 31 will coordinate the audit of this work with One Energy Solutions LLC).
    - OE 31 will coordinate with One Energy Solutions LLC to perform semi-annual turbine and balance of plant (BOP) inspection and maintenance, including quality control inspections on turbine foundations, turbine operations systems, blades (via drone inspection), BOP equipment, site access roads, etc.
- **Annual Service Inspection** *(continuing annually at 2 years, 3 years, 4 years, years 6-9, etc.)*:
    - The turbine OEM will perform their annual turbine maintenance, including torque checks on 10% of all bolted connections, a general inspection, greasing bearings, function-checking turbine cooling and heating systems, testing the yaw system, and testing the generator (OE 31 will coordinate the audit of this work with One Energy Solutions LLC).
    - OE 31 will coordinate with One Energy Solutions LLC to perform annual maintenance, including a quality-control inspection on wind turbine foundations, turbine operations systems, site access roads, etc. Additionally, detailed BOP equipment inspection and maintenance are performed on transformers, switchgears, junction boxes, and the control-equipment enclosure.
- **Drone Inspections**
    - One Energy Solutions LLC will provide regular, but not less than annual, drone inspections of the exterior of the turbine and its blades. These high-resolution inspections enable early detection of issues that cannot typically be observed at this early stage.

3.3 DECOMMISSIONING AND RESTORATION

Under the agreement between OE 31 and DPR, the Project will initially operate for twenty years. At the end of those twenty years, the Project will either be decommissioned, or the agreement will be renegotiated to extend the term of the contract. When decommissioning does occur, OE 31 will adhere to statutes and rules regarding decommissioning found in NDCC Chapter 49-02-27 and NDAC Chapter 69-09-09. This includes the following (unless waived by the PSC pursuant to NDAC Section 69-09-09-05(2)):

- Dismantling and removal of all towers, turbine generators, transformers, fencing, overhead cables, inverters, switching stations, and other equipment.
- Removal of underground cables to a depth of 24 inches.
- Removal of foundations and ancillary equipment to a depth of four feet.
- Site restoration and reclamation to the approximate original topography that existed prior to construction of the facility with topsoil respread over the disturbed areas at a depth similar to that in existence prior to the disturbance.
- Grading and restoring topsoil of areas disturbed by the facility will be done in accordance with applicable Natural Resources Conservation Service recommendations or according to a procedure approved by the landowner and the PSC.

In accordance with NDAC Section 69-09-09-06, OE 31 will file a decommissioning plan with the PSC prior to the commencement of operation of the Project, and will comply with the applicable financial assurance provisions.

4.0 SITE SELECTION CRITERIA: COMPLIANCE WITH NDAC SECTIONS 69-06-10-3(2)-(5) AND 69-06-08-01

4.1 COMPLIANCE WITH EXCLUSION AREAS[1]

Under NDAC Sections 69-06-10-3(2)-(5), an applicant must provide all supporting documentation regarding exclusion areas and provide written certification that the proposed facility will not affect any known exclusion areas. NDAC Section 69-06-08-01(1) identifies the geographical areas that "must be excluded in the consideration of a site for an energy conversion facility." NDAC Section 69-06-08-01(2) also lists additional geographical areas that "must be excluded in the consideration of a site for a wind energy conversion facility." The applicability of these exclusion areas is summarized below in Table 4.1-1. The exclusion areas in the Study and Project Areas are depicted on Figure 3, Exclusion Areas.

TABLE 4.1-1: SUMMARY OF EXCLUSION AREAS

GENERAL EXCLUSION AREA	PRESENT WITHIN PROJECT AREA?	DESCRIPTION	SECTION ADDRESSED
Designated or registered national: parks; memorial parks; historic sites and landmarks; natural landmarks; historic districts; monuments; wilderness areas; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; and grasslands	Not Present	NA	5.2, 5.6, 5.7, 5.8, 5.12, 5.13
Designated or registered state: parks; forests; forest management lands; historic sites; monuments; historical markers; archaeological sites; grasslands; wild, scenic, or recreational rivers; game refuges; game management areas; management areas; and nature preserves	Not Present	NA	5.2, 5.6, 5.7, 5.8, 5.12, 5.13
County parks and recreational areas; municipal parks; parks owned or administered by other governmental subdivisions; hardwood draws; and enrolled woodlands.	Not Present	NA	5.8, 5.9
Areas critical to the life stages of threatened or endangered animal or plant species	Not Present	NA	5.14, Appendix M
Areas where animal or plant species that are unique or rare to this state would be irreversibly damaged	Not Present	NA	5.14, Appendix M
Areas within 1,200 feet of the geographic center of an intercontinental ballistic missile (ICBM) launch or launch control facility	Not Present	NA	5.4
Areas within thirty feet (9.14 meters) on either side of a direct line between an ICBM launch facility and a	Not Present	NA	5.4

[1] As defined in NDAC Section 69-06-01-01(8), exclusion criteria are "criteria that remove areas from consideration for energy conversion facility sites and transmission facility routes." Exclusion areas are composed of these limiting criteria.

missile alert or launch control facilities to avoid microwave interference. This restriction only applies to aboveground structures, not to surface features, such as roads, or below-ground infrastructure			
ADDITIONAL EXCLUSION AREAS FOR WIND ENERGY CONVERSION FACILITIES – AREAS WITHIN[1]:	**PRESENT WITHIN PROJECT AREA?**	**DESCRIPTION**	**SECTION ADDRESSED**
1.1x the turbine height from the nearest edge of an interstate or state roadway right-of-way (ROW)	Not Present	NA	4.6
1.1x the turbine height plus 75 feet from the centerline of any county or maintained township roadway	Present	No turbines will be located within these exclusion areas.	4.6
1.1x the turbine height from the nearest edge of railroad ROW	Present	No turbines will be located within these exclusion areas.	4.6
1.1x the turbine height from the neared edge of a 115 kV or higher transmission line ROW	Present	No turbines will be located within these exclusion areas.	4.6
1.1x the turbine height from the property line of a non-participating landowner and 3x the height of the turbine from an inhabited rural residence of a non-participating landowner, unless a variance is granted. A variance may be granted if an authorized representative or agent of the permittee, the nonparticipating landowner, and affected parties with associated wind rights file a written agreement expressing all parties' support for a variance to reduce the setback requirement in this subsection. A nonparticipating landowner is a landowner that has not signed a wind option or an easement agreement with the permittee of the wind energy conversion facility as defined in NDCC Chapter 17-04.	Present	No turbines will be located within these exclusion areas.	4.6
[1] For the purposes of setbacks, OE 31 assumed a turbine up to 80 meters in hub height, with up to a 103-meter rotor diameter, and up to a total tip height of 131.5 meters			

Table 4.1-1: Summary of Exclusion Areas

4.2 COMPLIANCE WITH AVOIDANCE AREAS[2]

Under NDAC Sections 69-06-10-3(2)-(5), an applicant must provide all supporting documentation regarding avoidance areas and provide written certification that the proposed facility will not affect any known avoidance areas. If the proposed facility will affect a known avoidance area, the applicant must provide notice and information regarding the avoidance area expected to be impacted and the reasons why the impact cannot be avoided. Under NDAC Section 69-06-08-01(3), "[t]he following geographical areas may not be approved as a site for an energy conversion facility unless the applicant shows that under the circumstances there is no reasonable alternative. In determining whether an avoidance area should be designated for a facility the PSC may consider, among other things, the proposed management of adverse impacts; the orderly siting of facilities; system reliability and integrity; the efficient use of resources; and alternative sites. Economic considerations alone will not justify approval of these areas. A buffer zone of a reasonable width to protect the integrity of the area must be included. Natural screening may be considered in determining the width of the buffer zone." An additional avoidance area for wind energy conversion facilities is set forth in NDAC Section 69-06-08-01(4). See Table 4.2-1 for a discussion of the criteria outlined in Section 69-06-08-01(3) and (4). In accordance with NDAC Section 69-06-10-03, avoidance areas in the Study and Project Area are depicted in Figure 4, Avoidance Areas.

TABLE 4.2-1: SUMMARY OF AVOIDANCE AREAS

AVOIDANCE AREA	PRESENT WITHIN PROJECT AREA?	DESCRIPTION	SECTION ADDRESSED
Historical resources which are not designated as exclusion areas	Present	OE 31 has completed a Class I cultural resources inventory for the Project Area; as well as a Class III cultural resource inventory of areas that may be impacted by Project construction. OE 31 has also completed a Class II Architectural History reconnaissance survey. Cultural resource sites will be avoided. An Unanticipated Discoveries Plan will be prepared and provided if requested by the State Historical Society of North Dakota (SHSND).	5.7
Areas within the city limits of a city or the boundaries of a military installation	None	NA	5.4, Figure 4
Areas within known floodplains as defined by the geographical boundaries of the hundred-year flood	Present	There are areas of the 100-year floodplain in the Project Area associated with the Heart River. Two small sections of gravel access roads	5.12, Figure 4

[2] As defined in NDAC 69-06-01-01, avoidance criteria are "criteria that remove areas from consideration for energy conversion facility sites and transmission facility routes unless it is shown that under the circumstances there are no reasonable alternatives." Avoidance areas are composed of these limiting criteria.

		and underground collection lines will be located in the 100-year floodplain. As explained further in section 5.12.2.1, there is no reasonable alternative to siting these facilities in the floodplain. There are no turbines sited in the 100-year floodplain.	
Areas that are geologically unstable	None	NA	5.11
Woodlands and Wetlands	Present	Wetlands are present within the Project Area, as are small woodlands along Heart River. No permanent or temporary impacts are expected to occur to wetlands or woodlands. No impacts to trees are expected to occur during construction.	5.9, 5.12, 5.13, Figure 4
Areas of recreational significance which are not designated as exclusion areas	None	NA	5.8
ADDITIONAL AVOIDANCE AREAS FOR WIND ENERGY CONVERSION FACILITIES – AREAS WITHIN:			
A geographic area where, due to the operation of the facility, the sound levels within one hundred feet of an inhabited residence or community building will exceed forty-five decibels (dBA). The sound level avoidance area criteria may be waived in writing by the owner of the occupied residence or the community building	Considered and not present	A sound study for the Enercon E-103 EP2 turbine has been conducted and is included as Appendix F. Sound levels do not exceed 45 dBA within 100 feet of inhabited residences or community buildings.	5.5

Table 4.2-1: Summary of Avoidance Areas

4.3 COMPLIANCE WITH SELECTION CRITERIA[3]

Under NDAC Section 69-06-08-01(5), "[a] site may be approved in an area only when it is demonstrated to the PSC by the applicant that any significant adverse effects resulting from the location, construction, and operation of the facility in that area, as they relate to the following, will be at an acceptable minimum, or that those effects will be managed and maintained at an acceptable minimum." Table 4.3-1 provides a summary of the selection criteria.

[3] As defined in NDAC 69-06-0101, selection criteria are defined as "criteria that guide and govern the selection of energy conversion facility sites and transmission facility corridors and routes in order to minimize adverse human and environmental impact after the exclusion and avoidance criteria have been applied.

TABLE 4.3-1: SUMMARY OF SELECTION CRITERIA		
SELECTION CRITERIA	**POTENTIAL ADVERSE EFFECTS FROM PROJECT**	**SECTION ADDRESSED**
THE IMPACT UPON AGRICULTURE:		
(1) Agricultural production	The Project is anticipated to temporarily impact 16.2 acres of cultivated land or hay/pasture land and 6.0 acres of cultivated land or hay/pasture land for the life of the Project. OE 31 has coordinated with MPC and its tenant liaison to limit impacts to agricultural activities in the Project Area.	5.2, 5.9, 5.10
(2) Family farms and ranches	No family farms and ranches will be directly impacted. There is a tenant who farms and ranches a portion of the DPR land. The Project was designed to minimize impacts to those activities. The Project will impact 6.0 acres of cultivated land or hay/pasture land for the life of the Project. Additionally, approximately 16.2 acres of cultivated land or hay/pasture land would be temporarily disturbed during construction.	5.2, 5.5, 5.9
(3) Land which the owner demonstrates has soil, topography, drainage, and an available water supply that cause the land to be economically suitable for irrigation	Landowners have not expressed concerns related to irrigation on their property, and no known irrigation is present in the Project Area.	NA
(4) Surface drainage patterns and groundwater flow patterns	No adverse impacts are anticipated to surface drainage or groundwater flow patterns.	5.11, 5.12
(5) The agricultural quality of the cropland	No adverse impacts to agricultural quality of cropland are anticipated.	5.2, 5.9, 5.10
THE IMPACT UPON THE AVAILABILITY AND ADEQUACY OF:		
(1) Law enforcement	No adverse impacts to law enforcement are anticipated	5.3
(2) School systems and education programs	No adverse impacts to school systems and education programs are anticipated.	5.3
(3) Governmental services and facilities	No adverse impacts to government services and facilities are anticipated.	5.3
(4) General and mental health care facilities	No adverse impacts to general and mental health care facilities are anticipated.	5.3
(5) Recreational programs and facilities	No adverse impacts to recreational programs and facilities are anticipated.	5.8
(6) Transportation facilities and networks	There will be a temporary increase in truck traffic during construction activities. OE 31 will coordinate with local	5.3

	road authorities regarding haul roads. During Project operations, road use will return to its current state.	
(7) Retail service facilities	No adverse impacts to retail service facilities are anticipated.	5.1, 5.3
(8) Utility services	No adverse impacts to utility services are anticipated.	5.3
THE IMPACT UPON:		
(1) Local institutions	No adverse impacts to local institutions are anticipated.	5.3
(2) Noise-sensitive land uses	There are no sound-sensitive land uses within the Project Area. The only buildings in the Project Area are those associated with the Renewable Diesel Facility, which is a major industrial site, and DPR has contracted directly with OE 31 to develop, install, and operate the Project. The Project will comply with the PSC's sound-avoidance criterion.	5.5
(3) Light-sensitive land uses	Subject to FAA approval, OE 31 will install light-mitigating technology that is consistent with North Dakota law.	3.2.2, 5.6
(4) Rural residences and businesses	OE 31 implemented a minimum setback of 3x the maximum tip height of turbines (1,278 feet) from the nearest inhabited residence and no adverse impacts are anticipated to rural residences or businesses.	4.1, 5.5, 5.6
(5) Aquifers	There are no aquifers located in the Study Area or Project Area; therefore, no adverse impacts to aquifers are anticipated.	5.11
(6) Human health and safety	No impacts to human health and safety are anticipated.	5.4
(7) Animal health and safety	No adverse impacts to domestic animal or livestock health and safety are anticipated. OE 31 will continue its engagement with USFWS and NDGF regarding any potential impacts to wildlife.	5.14
(8) Plant life	Temporary and permanent vegetation impacts will occur during construction. However, all turbines and facilities will be constructed on already disturbed land.	5.13
(9) Temporary and permanent housing	Temporary housing may be utilized in the form of motels or rental housing. Local housing facilities could experience short-term economic benefits. No long-term adverse impacts are anticipated.	5.1
(10) Temporary and permanent skilled and unskilled labor	OE 31 will make efforts to source materials and the construction workforce from within the State of North Dakota and/or areas surrounding the Project within the parameters of the Project's requirements for quality, safety, budget, and schedule. The Project will provide work for up to 20 workers during construction and the	4.5

	turbine OEM will have two to three employees based locally who will maintain the turbines.	
CUMULATIVE IMPACT:		
The cumulative effects of the location of the facility in relation to existing and planned facilities and other industrial development	The Project will be located on land owned by DPR at an industrial site. Impacts to planned facilities and industrial development on the Renewable Diesel Facility site have been minimized in coordination with DPR. No impacts to existing or planned facilities and other industrial development will occur outside of the Project Area. There are two existing oil and gas wells within the Project Area. However, impacts are not anticipated because the two wells in the Project Area are well outside the disturbance area.	5.11

Table 4.3-1: Summary of Selection of Criteria

4.4 DESIGN AND CONSTRUCTION LIMITATIONS

OE 31 considered the following design and construction limitations when determining the Project location: available land on DPR's parcels, wind resource, environmental constraints, applicable setbacks, interconnection, and economics.

The Renewable Diesel Facility's capacity and current site load was also a significant factor in Project design. The Project was sized to maximize economic benefit and minimize the amount of electricity put back on the grid.

Several site-specific limitations also affected the Project's design and construction, including avoidance or minimization of impacts to environmental resources and setback requirements from features, including occupied residences, railroads, existing roads and transmission lines, and non-participating property lines.

See Section 5.0 for a more detailed discussion of the site-specific resources and mitigation measures used.

4.5 ECONOMIC CONSIDERATIONS

The economics of a wind farm are primarily driven by the value of the wind resource. OE 31 has compiled and assessed wind resource data for the area the Project is located in. This included an on-site wind measurement campaign using a LiDAR. The data indicates there is a sufficient wind resource for wind generation with high economic output.

The Project will have direct economic benefits to the Renewable Diesel Facility because the Project enables the Renewable Diesel Facility to generate credits under the California LCFS program and future similar programs in other markets.

Construction of the Project will provide economic benefits to the Stark County community. The Project will provide direct economic benefits of $47,000 per year in taxes. This totals $940,000 for the lifetime of the Project. Additionally, the Project plans to award one $5,000 scholarship per turbine per year, for a total of $25,000 annually. This totals $500,000 in scholarships over 20 years. These scholarships will be awarded annually to local high school students who are pursuing a 2-year or 4-year degree in science, technology, engineering, or math (STEM). The Project will also result in indirect economic benefits to the Dickinson community, including increased retail activity at restaurants, hotels, gas stations, and local purchases of construction materials and supplies, such as concrete, fuel, and aggregate.

4.6 COMPLIANCE WITH SETBACKS

The Project has been sited to comply with the PSC's and Stark County's setback requirements. Table 4.6-1 identifies PSC and Stark County setbacks applicable to the Project. These are also displayed on Figure 5, Project Constraints and Setbacks. Regardless of the turbine model selected, the Project layout will comply with the setback requirements outlined below. Setbacks are measured from the center of the base of the turbine tower to the applicable feature.

TABLE 4.6-1: NORTH DAKOTA PSC AND STARK COUNTY SETBACK REQUIREMENTS

PSC SETBACK TYPE	TURBINE SETBACK[1]
Nearest edge of an interstate or state roadway ROW. NDAC 69-06-08-01(2)(a)(1).	1.1 times the height of the turbine
The geographic center of an ICBM launch or launch-control facility. NDAC 69-06-08-01(1)(f).	1,200 feet
Direct line between an ICBM launch facility and a missile alert or launch-control facilities to avoid microwave interference. NDAC 69-06-08-01(1)(g).	Areas within 30 feet (9.14 meters) on either side of a direct line between an ICBM launch facility and a missile alert or launch-control facilities
County or maintained township roadway. NDAC 69-06-08-01(2)(a)(2).	1.1 times the height of the turbine plus 75 feet from the centerline of the roadway
Nearest edge of a railroad ROW. NDAC 69-06-08-01(2)(a)(3).	1.1 times the height of the turbine
Nearest edge of a 115-kilovolt or higher transmission line ROW. NDAC 69-06-08-01(2)(a)(4).	1.1 times the height of the turbine
Property line of a non-participating landowner. NDAC 69-06-08-01(2)(a)(5).	1.1 times the height of the turbine[2]
Inhabited residence or a community building. NDAC 69-06-08-01(2)(a)(4).	A wind energy conversion site must not include a geographic area where, due to the operation of the facility, the sound levels within 100 feet of an inhabited residence or a community building will exceed 45 dBA[3]
Nonparticipating inhabited rural residence. NDAC 69-06-08-01(2)(a)(5).	3 times the height of the turbine[4]
STARK COUNTY	
Front public roads or access	100 feet from the centerline of the front public road or access
Boundary of residential district	No building or structure shall be located within 1,250 feet from the boundary of a residential district
Enchanted Highway Setback	No structure allowed in a Commercial or Industrial District shall be located within one mile of the centerline of the

	Enchanted Highway and no structure of more than 30 feet in height shall be located within this restricted area
Utility Setback	Underground and overhead utilities shall be a minimum of 75 feet or the existing right-of-way easement, whichever is greater, from all section lines and all roads

[1] Setbacks are based on a turbine up to 80 meters in hub height, with a rotor diameter of up to 103 meters, and a total tip height of up to 131.5 meters.
[2] As set forth in NDAC Section 69-06-08-01(2), a variance may be granted if an authorized representative or agent of the permittee and affected parties with associated wind rights file a written agreement expressing all parties' support for a variance to reduce the setback requirement in this subsection. A non-participating landowner is a landowner that has not signed a wind option agreement or a wind easement with the permittee of the wind energy conversion facility as defined in NDCC Chapter 17-04.
[3] The sound level avoidance area criteria may be waived in writing by the owner of the occupied residence or the community building, as provided in NDAC Section 69-06-08-01(4).
[4] As set forth in NDCC Section 49-22-05.1(3), a variance from this setback requirement may be granted if an authorized representative or agent of the permittee, the nonparticipating landowner, and affected parties with associated wind rights file a written agreement expressing the support of all parties for a variance to reduce the setback requirement. A non-participating landowner is a landowner that has not signed a wind option or an easement agreement with the permittee of the wind energy conversion facility as defined in NDCC Chapter 17-04.

Table 4.6-1: North Dakota PSC and Stark County Setback Requirements

4.7 CERTIFICATION RELATING TO ORDER PROVISIONS

The Certification Relating to Order Provisions is signed and a copy is provided in Appendix C.

OE 31 has adapted the standard certification relating to order provisions for traditional utility-scale wind projects to more specifically apply to the unique aspects of an on-site small wind energy conversion facility that is co-located with an industrial customer facility.

4.8 CERTIFICATION OF COMPLIANCE WITH SITING LAWS AND RULES

In accordance with NDAC Section 69-06-10-03(3), a written, executed certification of compliance with siting laws and rules is provided in Appendix L.

5.0 ENVIRONMENTAL ANALYSIS

5.1 DEMOGRAPHICS

The following sections describe existing demographics, potential impacts, and proposed mitigation.

5.1.1 Existing Conditions

The Project is located on the property of DPR, which is an industrial site in a sparsely populated rural area. The Project land is comprised of cultivated land and is the site of a renewable diesel facility in southeastern North Dakota. The Study Area is within Stark County in Sections 9, 10, 11, 14, 15, 16, 21, 22, and 23 of Township 139 North (unorganized), Range 97 West. The closest incorporated municipality to the Project is Dickinson, which is 3.5 miles northeast. Demographic information for the Project Area is based on data from the U.S. Census Bureau's QuickFacts website (U.S. Census Bureau, 2021a). The data is shown at the county and state levels for comparison purposes. The demographic information is summarized in Table 5.1-1.

The per capita income in Stark County between 2015 and 2019 was $38,103, which is similar to the state level (U.S. Census Bureau, 2021a). The unemployment rate in Stark County is similar to the state level, at 1.8 percent and 1.9 percent, respectively. Approximately 8.8 percent of the people in Stark County are reported living at or below the poverty level, which is lower than the state level of 10.7 percent. The top three industries of employment in the State of North Dakota are 1) educational services, health care, and social assistance; 2) retail trade; and 3) agriculture, forestry, fishing, hunting, and mining (U.S. Census Bureau, 2021b). The top three industries of employment in Stark County are 1) agriculture, forestry, fishing, hunting, and mining; 2) educational services, health care, and social assistance; and 3) retail trade.

TABLE 5.1-1: DEMOGRAPHICS IN THE PROJECT AREA

	STARK COUNTY	NORTH DAKOTA
Population, Census, April 1, 2020 [1]	33,646	779,094
Per Capita Income 2015-2019 (U.S. 2019 Dollars) [1]	$38,103	$36,062
Unemployment Rate (%) [1]	1.8	1.9
Persons Living Below the Poverty Line (%) [1]	8.8%	10.7%
Top 3 Industries [2]	E (25.4%), R (11.4%), Ag (9.3%)	Ag (18.9%), E (17.3%), R (11.5%)

[1] U.S. Census Bureau, 2021a.
[2] U.S. Census Bureau, 2021b.
[3] Industries are defined under the 2012 North American Industry Classification System and abbreviated as follows: Ag = Agriculture, Forestry, Fishing, Hunting, and Mining; E = Educational, Health, and Social Services; R = Retail Trade

Table 5.1-1: Demographics in the Project Area

5.1.2 Demographic Impacts and Mitigation

OE 31 anticipates that the Project will be socioeconomically beneficial to the local population and will not impact long-term population trends or interfere with existing or adjacent land uses. The Project will be socioeconomically beneficial to the Renewable Diesel Facility, local governments, and communities by providing economic benefits, taxes, and scholarships.

Long-term beneficial impacts to the tax base of Stark County, as a result of the construction and operation of the Project, will have a positive impact on the local economy in this area of North Dakota. The Project will provide direct economic benefits of $47,000 per year in taxes. Over twenty years, the Project will generate a total of $940,000 in taxes. Additionally, the Project will award one $5,000 STEM scholarship per turbine per year, for a total of $25,000 annually. Over twenty years, the Project would generate $500,000 in STEM scholarships.

The Project will provide work for up to 20 workers during construction and the turbine OEM will have two to three employees based locally who will maintain the turbines.

Construction of the Project could also provide temporary revenue increases in the area through increased demand for food services, lodging, fuel, and general supplies. Personal income could also be generated by

circulation and recirculation of dollars paid out by the Project as business expenditures and state and local taxes.

Overall, OE 31 anticipates that the Project will be socioeconomically beneficial to the local population and will not impact long-term population trends. This Project supports the Renewable Diesel Facility which consumes more than 2% of the U.S.'s available corn and soy crop. Further, the Project would not result in relocation of residences.

5.2 LAND USE, LAND COVER, AND MANAGED LANDS

The following sections describe the existing land cover and uses in the Study Area and Project Area, potential impacts from construction and operation of the Project, and proposed mitigation measures.

5.2.1 Existing Conditions

5.2.1.1 Land Cover

The Study Area is located in a developed area of rural North Dakota and predominantly consists of developed land, shrub/scrub lands, grasslands, and cultivated land. OE 31 reviewed U.S. Geological Survey (USGS) National Land Cover Data (NLCD) to determine land cover classification types present within the Study Area and the Project Area (USGS, 2019). The results of this review are presented in Table 5.2-1. The predominant NLCD land cover classifications in the Study Area are shrub/scrub, developed, cultivated crops, and grassland/herbaceous. The predominant NLCD land cover classifications in the Project Area are cultivated crops and developed land, which represent 66.6% of the land cover. Figure 10, Land Cover, depicts the land cover classifications within the Study and Project Areas.

TABLE 5.2-1: LAND COVER TYPES AND THEIR RELATIVE ABUNDANCE IN THE STUDY AND PROJECT AREAS

LAND COVER	STUDY AREA		PROJECT AREA	
	ACRES	PERCENT	ACRES	PERCENT
Shrub/Scrub	950.0	31.1	31.7	8.4
Grassland/Herbaceous	507.4	16.6	55.6	14.7
Cultivated Crops	528.3	17.3	94.8	25.0
Developed	532.3	17.4	157.0	41.6
Hay/Pasture	207.7	6.8	6.1	1.6
Emergent Herbaceous Wetlands	151.5	5.0	10.0	2.6
Open Water	97.7	3.2	12.1	3.2
Woody Wetlands	36.1	1.2	5.6	1.5
Deciduous/Evergreen/Mixed Forest	41.6	1.4	5.4	1.4
Barren Land	0.2	0	0	0
Total	**3052.8**	**100**	**378.3**	**100**

Source: USGS 2019.

Table 5.2-1: Land Cover Types and their Relative Abundance in the Study and Project Areas

5.2.1.2 Land Use and Ownership

Land in the Study and Project Areas is predominantly used for renewable diesel production and agricultural production. Table 5.2-2 provides the total acres of federal and state-owned lands in each of these areas and Figure 6, Public Lands and Easements depicts these features.

TABLE 5.2-2: LAND OWNERSHIP IN THE STUDY AND PROJECT AREAS

AGENCY	ACRES IN STUDY AREA	ACRES IN PROJECT AREA
Privately Owned Land[1]	2,333.4	356.0
ND Bureau of Reclamation Land	582.4	0
ND State Land[2]	137.0	22.3

1. Includes 318.5 acres of Mineral Rights Trust Lands in the Study Area and 0 acres in the Project Area.
2. ND State Land is the land area associated with the Heart River.
Source: NDGISHUB 2020a; NDGISHUB 2020b; NDGISHUB 2020c.

Table 5.2-2: Land Ownership in the Study and Project Areas

There are no Bureau of Land Management lands within the Project Area or Study Area (BLM, Undated).

The U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) administers the Conservation Reserve Program (CRP). Agricultural landowners may voluntarily enroll their land into the CRP, essentially taking the land out of production for a given timeframe to protect wildlife and water resources in exchange for annual payments. There are no CRP lands in the Study Area (NDGF, 2019).

The U.S. Fish and Wildlife Service (USFWS) manages Waterfowl Production Areas (WPAs) to protect breeding, forage, shelter, and migratory habitat for waterfowl or wading birds, such as ducks, geese, herons, and egrets. WPAs provide opportunities for viewing wildlife and intact ecosystems. There are no WPAs within the Study Area. The nearest WPA is Southeast of the Project Area in Hettinger County (NDGISHUB, 2018).

The USFWS manages National Wildlife Refuges (NWRs) that are part of a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats. NWRs protect some of the country's most iconic ecosystems and the fish and wildlife that rely on them. There are no NWRs in the Study Area; the nearest NWR is the Lake Ilo NWR northwest of the Project Area in Dunn County (NDGISHUB, 2017).

The USFWS also has wetland easements and grassland easements with landowners in some areas to protect wetlands and grasslands. There are no USFWS wetland easements or grassland easements in the Study Area.

In North Dakota, Private Land Open to Sportsmen (PLOTS) are private lands open to public use for hunting and bird watching (NDGF, 2019). PLOTS lands are administered through an agreement between the North Dakota Game and Fish Department (NDGF) and individual landowners. There are no PLOTS lands present within the Study Area (NDGF, 2019).

NDGF also manages Wildlife Management Areas (WMAs). There are over 200 WMAs in North Dakota, which are generally open to hunting, fishing, and trapping, among other recreational uses. There are no NDGF-managed WMAs present in the Study Area.

No concentrated residential developments are present with the Study or Project Areas though scattered residences are present in the Study Area. There are five residences within the Study Area and none within the Project Area.

OE 31 reviewed publicly available information to identify North Dakota Department of Trust Lands within the Study and Project Areas. No surface trust lands are located within the Study Area or Project Area. Surface trust lands typically generate income through leasing these parcels for grazing or other agricultural uses. Leases for rights-of-way and mining uses are also common on surface trust lands. Mineral rights trust lands within the Study and Project Areas total 318.5 acres and 0 acres, respectively. Mineral rights trust lands typically generate income through leases for oil and gas, coal, potash, and other mineral extraction. The Heart River is also considered state lands. There are 137.0 acres of state lands associated with the Heart River in the Study Area and 22.3 acres of state lands associated with the Heart River in the Project Area.

There are water wells and oil and gas wells within the Study and Project Areas. There are 2 domestic/stock/industrial/observational water wells in the Study Area; of these, 0 are within the Project Area. There is a total of 11 oil and gas wells in the Study Area; 2 of these oil and gas wells are within the Project Area (ND Oil and Gas Division, 2021). OE 31 does not anticipate disturbances because the wells are outside the disturbance area for the Project.

5.2.1.3 Zoning

The Project is located within the Industrial District[4] in Stark County. Under the Stark County Zoning Ordinance, "wind energy generation" is a conditional use in the Industrial District requiring a conditional use permit from the county. OE 31 has applied for a conditional use permit from Stark County.

5.2.2 Land Cover and Use Impacts and Mitigation

Construction of the Project will result in the conversion of a portion of the land within the Project Area from existing land uses to a renewable energy resource for the life of the Project. In addition, temporary land use impacts associated with construction will occur from use of staging and laydown areas and installation of underground collection and communication lines. These temporary land-use impacts will cease following construction and these areas will be returned to pre-construction land uses. Table 5.2-3 presents the anticipated impacts on NLCD land cover categories as a result of construction and operation of the Project. In the table, OE 31 has identified the approximate temporary and permanent (for the life of the Project) impacts of the Project to the areas outside of the existing Renewable Diesel Facility areas (as measured in acres). OE 31 has also identified the approximate acreage of impacts to the existing Renewable Diesel Facility areas.

[4] Note that one parcel owned by the DPR is zoned Agricultural. An application to rezone the parcel from Agricultural to Industrial was submitted to the County with the conditional use permit application.

TABLE 5.2-3: SUMMARY OF LAND COVER IMPACTS			
LAND COVER TYPE	IMPACTS		
	TEMPORARY (ACRES)	PERMANENT (ACRES)	EXISTING DPR FACILITY (ACRES)
Cultivated Crops	16.1	6.0	0
Grassland/Herbaceous	1.2	0.1	0
Shrub/Scrub	0.6	0.1	0
Developed (all categories)	1.9	0.3	2.8
Hay/Pasture	0.1	0	0
Emergent Herbaceous Wetlands*	0.5	0.2	0
Deciduous/Evergreen Forest	0	0	0
Woody Wetlands	0	0	0
Open Water	0.2	0	0
Total	**20.6**	**6.7**	**2.8**
Source: 2019 NLCD			
*No impacts to the river or wetlands will occur during construction or operation of the Project. However, the NLCD database overlapped with one of the temporary disturbance areas. Construction and installation practices will ensure all disturbances will occur to previously disturbed lands.			

Table 5.2-3: Summary of Land Cover Impacts

Construction of the Project will temporarily impact approximately 20.6 acres of land outside of the existing Renewable Diesel Facility area; of this, approximately 2.9 percent of the impacts will occur on land categorized as shrub-scrub in the NLCD, 5.8 percent of the impacts will occur on land categorized as grassland/herbaceous, and 78.2 percent will occur on land categorized as cultivated crop land. Impacts related to construction workspaces at turbine sites and access roads, installation of collection lines, and use of crane paths and laydown yards will be temporary and will terminate with the completion of construction. Impacts from turbines, transformers, crane pads, and access roads will be long-term and will require a conversion of existing land uses to a renewable energy source for the life of the Project. The Project will impact approximately 6.7 acres or less of land outside of the existing Renewable Diesel Facility area from turbine locations, associated access roads, and transformers for the life of the Project. Also, 2.8 acres of the existing Renewable Diesel Facility area will be impacted through use of existing DPR private roads, and placement of the control equipment enclosure, switching station, and staff trailer on the area. OE 31 has co-located linear facilities (access roads, crane paths, and collection lines) to the extent practicable.

OE 31 does not anticipate the conversion of 6.7 acres of land to a renewable energy source will impact broader existing land use patterns. Operation of the Project does not preclude use of the land in the Project Area for agricultural uses. The Project will not conflict with the existing development plans of state or local

entities within the Project Area. Any impacts on development plans of the landowner, DPR, have been minimized in coordination with the landowner.

Because there are no PLOTS lands within the Study Area, the Project will not impact these resources. The Project will also not impact North Dakota Department of Trust Lands-managed surface trust lands because these lands are not present within the Project Area.

OE 31 will avoid impacts on domestic, stock, industrial, and observational water wells, as well as oil and gas wells and storage tanks. Additional discussion of potential impacts and mitigation measures for water wells and oil and gas wells are discussed in Section 5.11 Geologic and Groundwater Resources.

5.3 PUBLIC SERVICES

The following sections describe existing public services in the Study Area, potential impacts, and proposed mitigation. Figure 7, Infrastructure, depicts existing infrastructure in the Study and Project Areas.

5.3.1 Existing Conditions

5.3.1.1 Local Services

The majority of public services and infrastructure are available in the City of Dickinson, located 3.5 miles northeast of the Project Area. Dickinson contains a hospital, ambulance service, a regional airport, police and fire services, public schools, businesses, mental health facilities, and churches.

5.3.1.2 Electrical Service

Electric service in the Study Area is provided by MDU. Transmission infrastructure includes overhead electrical distribution and transmission lines. Additionally, underground and overhead distribution lines are present going to farmsteads and the Renewable Diesel Facility.

5.3.1.3 Roads

The main road intersecting the Study Area is 116th Avenue SW, which intersects the Project Area and connects to I94. 116th Avenue SW was designed to support the Renewable Diesel Facility operations and has on more than one occasion, had loads in excess of one million pounds travel along the road. Other roadways in the Study Area include well maintained gravel-surfaced county roadways and two-track trails used for residential and agricultural purposes. OE 31 will construct temporary and permanent access roads on DPR's property for the Project. A compact gravel road will provide construction and service access to each turbine location. Permanent access roads will be approximately 20 feet wide. Two access points located on 116th Avenue SW will be used for general construction access.

5.3.1.4 Railroads

There is a BNSF railroad running through the Project Area in an east-west direction.

5.3.1.5 Water Supply

Rural water is supplied to the Study Area by Southwest Water Authority Rural Water District. It is common for rural residences in the area to utilize private wells for alternative uses, such as agriculture. There are two domestic/stock/industrial/observational water wells in the Study Area; of these, zero are within the Project Area (ND Dept. of Water Resources, Undated).

5.3.1.6 Microwave, Telephone, TV, and Radio Communications

Using industry standard procedures and FCC databases, OE 31 conducted a search to determine the presence of any existing microwave paths in the Project Area, as well as any land mobile radio facilities, antenna structures, and AM, FM and TV signals that may be impacted by the Project.

OE 31 also commissioned a microwave link analysis by Spectrum Center. OE 31 provided specific turbine coordinates and dimensions to Spectrum Center for the analysis. Spectrum Center's analysis identified the three closest microwave paths, all of which are outside the Project Area and Study Area (Appendix D - Telecommunications Studies). According to the conclusion of the analysis, all turbines are 100% clear of the 2nd Fresnel Zone (the recommended clearance zone), with the closest turbine being 2,359 meters outside of the 2nd Fresnel Zone. The Project will not interfere with any known microwave paths.

Additionally, Spectrum Center provided One Energy with a letter on August 24, 2021 after slight micrositing changes to two of the proposed turbines. Spectrum Center's letter confirmed no expected interference with any known microwave paths.

OE 31 conducted a search of the FCC database for land mobile radio codes within 1.5 miles of the Project. One land mobile station was identified in this search and is located at the Renewable Diesel Facility. The tower is privately owned by DPR. No other land mobile stations were identified in the area analyzed.

OE 31 also conducted a search of the FCC database for registered antennae structures within 25 km of the proposed Project. The closest identified structure is located 3.75 km away from the closest turbine. Due to the distance from the turbines, interference is not expected.

OE 31 conducted a search of the FCC database for AM, FM, and TV signals. No AM stations were found within a 4 km radius, and therefore no interference is expected. The closest FM station was found to be 11.5 km away from the proposed Project site, and therefore no interference is expected. There were 10 TV facilities found within a 150 km radius of the proposed Project.

5.3.2 Public Service Impacts and Mitigation

The following subsections discuss potential impacts and proposed mitigation.

5.3.2.1 Local Services

Impacts to local services in and around the Project Area are not anticipated; therefore, no mitigation is required.

Construction and operation of the Project is not expected to impact the availability of emergency services. OE 31 has and will continue to coordinate with emergency services providers to determine appropriate safety precautions and standards. OE 31 will also have an Emergency Response Plan to implement these precautions and standards. OE 31 has on-staff EMTs and rope-rescue professionals and will train and equip local fire departments as necessary to ensure that there are multiple levels of adequate responders available throughout the life of the Project. If emergency services are required during construction or operation of the Project, law enforcement, fire departments, ambulance services, and hospitals near the Project Area would be adequate to address Project-related emergency service needs without negatively impacting the availability of these services for the local population. DPR also has an existing on-site full time fire department that will be part of the coordinated effort.

5.3.2.2 Electrical Service

As a behind-the-meter project that will comply with Institute of Electrical and Electronics Engineers (IEEE) 1547, the standard that establishes criteria and requirements for interconnection of distributed energy resources with electric power systems, the Project will not materially alter the existing electrical system, its character, or its reliability for any customers.

5.3.2.3 Roads

Existing roadways within the Project Area will be utilized to the extent feasible; however, construction of new access roads on DPR land will be required to provide access to the proposed tower locations. Newly constructed permanent access roads will be approximately 20 feet wide. Access roads will be constructed in locations which minimize impacts to the environment and/or existing land uses and will support the size and weight of maintenance vehicles. Following construction, the temporarily affected areas will be restored to pre-construction conditions, to the extent practicable.

During the construction phase, material impacts are not anticipated on public roads within the Study Area due to the small project size of five turbines. The total amount of concrete trucks and gravel trucks that will be arriving at site to support road and foundation construction will be well inside normal traffic limits. All construction traffic will use the existing private, county, state, and federal roadway system to access the Project Area and deliver construction materials and personnel.

OE 31's road use will comply with all applicable federal, state, and local laws. Road haul and/or use permits will be acquired from all required authorities.

After construction is complete, traffic impacts during the operations phase of the Project will be minimal. Operation and maintenance activities will not noticeably increase traffic in the Study Area, as these activities tend to be sporadic.

5.3.2.4 Railroads

The railroad will be crossed in two locations. In one location, the railroad will be crossed by construction traffic to build and maintain the northern two turbines. Improvements will be made to the road leading up to and exiting from the railroad, but no changes will be made to the railroad line itself. In another location, a collection line will be bored underneath the BNSF railroad. OE 31 will coordinate with the railroad for a crossing agreement as required. There will not be any direct impacts to the BNSF railroad.

5.3.2.5 Water Supply

OE 31 does not plan to use a material amount of water on site during construction or operations. During construction, water will be used for power washing components and will be sourced from the Renewable Diesel Facility's water system. Turbine siting avoids water wells. The water supply for residents within the Study Area is not anticipated to be affected by the proposed Project.

5.3.2.6 Microwave, Telephone, TV, and Radio Communications

Because of their height, modern wind turbines have the potential to interfere with existing communications systems licensed to operate in the United States. However, given the distance of communication systems from the Project Area, construction and operation of the Project are not expected to impact communication systems, AM/FM radio, or microwave beam paths. One land mobile station was identified in the Project

Area and is located at the Renewable Diesel Facility. The tower is privately owned by DPR and OE 31 is coordinating with the DPR to ensure interference is avoided or minimized. While interference is not expected to AM, FM, and TV signals with the limited footprint of this Project, if interference does occur, mitigation efforts will be pursued with individual landowners. Mitigation options include upgrading reception antennas or providing satellite service.

OE 31 will coordinate with utility companies to determine utility locations and will comply with North Dakota One-Call requirements.

5.4 HUMAN HEALTH AND SAFETY

The following sections describe existing conditions, potential impacts, and proposed mitigation for human health and safety.

5.4.1 Existing Conditions

5.4.1.1 Aviation/Airspace

The FAA regulates federal airspace. Due to their height, wind turbines may have an effect on airports and navigable airspace, both public and military. The FAA evaluates if a tall structure is an obstruction or hazard to the safe and efficient use of navigable airspace near airports or military operations.

The Minot Air Force Base and the Grand Forks Air Force Base are located approximately 130 miles and 270 miles northeast of the Project Area, respectively.

The Theodore Roosevelt Regional Airport is the nearest public-use airport to the Project Area and is located approximately five miles southeast of the Project Area. The Theodore Roosevelt Regional Airport serves general aviation, commercial flights, air taxi, and military flights (AirNav.com, 2021). There are no private airstrips in the Project Area. There are no ICBM sites in Stark County or adjacent counties.

5.4.1.2 Electromagnetic Fields Assessment

The term electromagnetic field (EMF) refers to electric and magnetic fields that are present around any electrical device. Electric fields arise from the voltage or electrical charges, and magnetic fields arise from the flow of electricity or current that travels along transmission lines, power collection (feeder) lines, substation transformers, house wiring, and electrical appliances. The intensity of the electric field is related to the voltage of the line and the intensity of the magnetic field is related to the current flow through the conductors. EMF can occur indoors and outdoors, and there are no discernible health impacts from power lines (NIEHS, 1999).

The source of EMF for the Project will be from buried electrical collection lines, transformers, switchgears, and wind turbines. EMF from electrical collection lines, transmission lines, and transformers dissipates rapidly with distance from the source (NIEHS, 2002).

5.4.1.3 Hazardous Materials/Hazardous Waste Assessment

The land within the Project Area is industrial and used for renewable diesel production and some agricultural production.

OE 31 reviewed the U.S. Environmental Protection Agency's (EPA) Facility Registry Service (FRS) to identify sites that are listed on the Comprehensive Environmental Response, Compensation, and Liability

Information System (also known as Superfund sites); Resource Conservation and Recovery Act (RCRA) Treatment, Storage, and Disposal; RCRA hazardous waste generators; the Assessment, Cleanup, and Redevelopment Exchange System; and the Leaking Underground Storage Tank—American Recovery and Reinvestment Act database (EPA, 2020). OE 31 also reviewed the North Dakota Department of Environmental Quality (NDDEQ) Underground Storage Tank (UST) Program database to identify UST or leaking USTs (LUSTs) in the Project Area (NDDEQ, 2021).

There were no FRS interests identified in the Study and Projects Areas.

There were no USTs or LUSTs in the Study and Project Areas (NDDEQ, 2021).

In addition to the research described above, an ASTM-conforming Phase I Environmental Site Assessment (Phase I ESA) was conducted. The Phase I ESA was completed by Highlands Engineering & Surveying, PLLC on May 5, 2021. The Phase I was completed to identify known recognized environmental conditions or historical recognized environmental conditions that may require additional action prior to or during construction.

5.4.1.4 Security Assessment

The Study Area is in a generally rural area located southwest of the City of Dickinson; no cities or towns are located within the Study Area. The Project Area is located on land owned by DPR. The Renewable Diesel Facility is in the Project Area.

5.4.2 Impacts and Mitigation

5.4.2.1 Aviation/Airspace

OE 31 filed a "Notice of Proposed Construction" with the FAA and received a Determination of No Hazard (DNH) for all five turbines on August 2, 2021. OE 31 filed alternate locations for the two northern turbines of the Project on August 23, 2021 due to the need to shift the turbines slightly and received DNHs for those turbines on September 21, 2021. In addition, the FAA reissued the DNHs for the three southern turbines on October 6, 2021 because of an issue in the way the maps could be viewed on those DNHs.

OE 31 received a letter from the DoD that the Project will have minimal impact on military operations conducted in the area.

OE 31 will mark and light the turbines as required by the FAA and the Project will comply with the light-mitigating technology system requirements set forth in North Dakota law. Given the response of the FAA and DoD and the marking and lighting that will occur, the Project is expected to have minimal impacts to aviation.

5.4.2.2 Electromagnetic Fields Assessments

This Project will not have a substantial or material impact on EMF amounts in the Project or Study Area. The turbines are fully grounded and built inside of a shielded steel tower that substantially eliminates EMFs from being able to propagate from inside to outside of the turbine. Transformers and the switchgear are all located inside shielded and grounded metal enclosures.

The generators are in a grounded, external support system and the entire turbine is tied to a robust grounding grid to ensure that all ground currents and erroneous waves are unable to escape. The

underground collection cables are installed with a concentric neutral conductor built into the cable, this makes the EMF largely unable to escape the cables. The trenches have a trench grounded conductor to ensure there is sufficient grounding capability throughout the entire collection line system. No impacts due to EMF are anticipated and no mitigation specific to EMF is proposed.

5.4.2.3 Hazardous Materials/Hazardous Waste Assessment

There is no expected hazardous waste or materials associated with the construction or operation of the Project, except as outlined below. The proposed turbines are direct-drive turbines without gearboxes and will have five to 20 gallons of hydraulic fluid and grease. This small amount makes the risk of exposure significantly smaller than other wind turbine designs. There is no pendulum oil or other large source of oil. The transformers also contain a small amount of oil. All oil in the padmount transformers is FR3 or an equivalent type of oil, which is readily biodegradable. A diesel fuel tank less than 500 gallons in size will be on-site to fuel vehicles during construction.

OE 31 will comply with the North Dakota Pollutant Discharge Elimination System (NDPDES) Construction General Permit for the Project and develop a Storm Water Pollution Prevention Plan (SWPPP) as part of the NDPDES permit, which will set forth standards for fuel tanks and fuel storage used during construction. Hazardous materials temporarily used and stored for the construction of the Project will be contained according to the NDPDES Permit. Spill containment for any equipment-related spill will be readily available to contain spills in the unlikely event that they occur and all EPA and SWPPP procedures will be followed.

OE 31 hired Highlands Engineering & Surveying to conduct a Phase I ESA, which was completed on May 5, 2021. The Phase I ESA did not identify any known recognized environmental conditions or historical recognized environmental conditions that require additional action prior to or during construction. During construction, if hazardous waste sites are encountered, OE 31 will follow all EPA procedures in that unlikely event.

5.4.2.4 Security Assessment

OE 31 does not anticipate that construction and operation of the Project will impact the security of surrounding residents or communities. During operation of the Project, all facilities, including turbine access doors and the Project switching station, will be locked and have appropriate warning signage.

DPR maintains a 24/7 security team at the Renewable Diesel Facility and the Project will be monitored remotely with multiple security measures including but not limited to cameras and proprietary intrusion detection systems.

5.5 SOUND

The following sections describe existing sound conditions, potential impacts, and proposed mitigation.

5.5.1 Existing conditions

The Project is located on-site of an industrial facility, namely the Renewable Diesel Facility, which generates sound from its operations. Outside of the industrial area, the Renewable Diesel Facility and Project are in a rural setting in southwestern North Dakota. Sound contributors in the Study Area include the Renewable Diesel Facility operations, farm machinery, and roadway traffic and activity.

5.5.2 Sound Impacts and Mitigation

Wind turbines create sound when they are generating electricity due to the rotating blades, generator, and cooling fans. Sound increases as the wind speeds increase until a maximum blade rotational speed is reached, which typically occurs when wind speeds are 13.5 m/s at hub height.

State regulations require that wind turbines be sited such that sound levels within 100 feet of an inhabited residence or community building do not exceed 45 dBA. OE 31 conducted a sound analysis for the Project. The sound analysis assumed that: (i) all five proposed wind turbine locations were operating concurrently and (ii) the turbines were operating at a wind speed resulting in the loudest noise possible being emitted. This modeling concluded there would be no noise levels above the 45 dBA threshold within 100 feet of an inhabited residence or community building. The Sound Analysis is in Appendix F – Sound Analysis Report.

5.6 VISUAL RESOURCES

The following sections describe existing conditions, potential impacts, and proposed mitigation for the visual environment, including potential effects of shadow flicker.

5.6.1 Existing Conditions

The following sections describe existing aesthetic conditions and shadow flicker.

5.6.1.1 Aesthetics

Given the existing Renewable Diesel Facility that is co-located with the Project, there is significant infrastructure (storage tanks, a flare, tall towers, communication towers) already visible within the Project Area and Study Area. The Renewable Diesel Facility's tallest tower reaches approximately 184 feet above ground level.

Outside of the Project Area and the Renewable Diesel Facility, the landscape is primarily rural open space and viewsheds are generally broad and uninterrupted with scattered areas where they are interrupted by topography and vegetation. The settlements in the vicinity are residences and farm buildings scattered along rural county roads. There are very few settlements within the Study Area and none within the Project Area.

5.6.1.2 Shadow Flicker

Shadow flicker occurs when the rotating blades of a wind turbine are directly between an observer and the sun, causing alternating light and shadow. Shadow flicker intensity and frequency at a given receptor are determined by several interacting factors including sun angle and sun path, turbine and receptor locations, cloud cover and degree of visibility, wind direction, wind speed, obstacles, contrast, and local topography. Shadow flicker decreases and ultimately disappears with distance from the turbine and is also eliminated by obstacles between the observer and the turbine, such as trees or terrain. Shadow flicker is predictable, and it can be minimized through turbine site selection. Shadow flicker is harmless to humans, though it may be considered by some to be an annoyance (Appendix G – Shadow Flicker Analysis Report).

5.6.2 Visual Impacts and Mitigation

Visual and aesthetic impacts would result from construction of the proposed Project.

5.6.2.1 Aesthetics

The five-turbine Project is located on-site at one of the largest industrial facilities in the state, the Renewable Diesel Facility. The Renewable Diesel Facility operates 24/7 and is lit significantly at night to ensure safety of the work area. There is also a flare stack at the Renewable Diesel Facility for emergency purposes. Unlike wind projects located solely in rural landscapes, the industrial setting of the Project makes it such that the aesthetic contrast of the Project from the area in which it is located is notably less than traditional wind farms. In addition, the relatively small size of the Project at 11.75 MW and five turbines means the aesthetic impact of the Project will be significantly smaller in scope than with traditional wind farms.

With that in mind, the Project will have aesthetic impacts, some of which will be temporary and some of which will exist for the life of the Project. During construction, visual impacts associated with the Project facilities will include the removal of existing vegetation and the exposure of bare soils, as well as earthwork and grading associated with heavy equipment tracks, trenching, presence of machinery and tool storage, along with turbine erection activities.

During Project operation, and for the life of the Project, visual impacts associated with the Project include five visible wind turbines, the movement of the rotor blades, shadow flicker, and other ancillary structures. Additionally, the FAA requires obstruction lighting or marking of structures more than 200 feet above ground level to provide safe air navigation, which is synchronized flashing of red lights for wind turbines (FAA, 2005). However, the Project will coordinate with the FAA on implementation of light-mitigating technology system requirements (e.g., ADLS), which is consistent with North Dakota law and will reduce the aesthetic impact of the Project. The components and specific locations of the ADLS system or other approved system will be dependent on the FAA's review of turbine technology, terrain, and other factors. In addition, the Project will be located in a well-lit industrial area, which will reduce the visual impact of any FAA lighting that is required.

Temporary aesthetic impacts and impacts for the life of the Project will vary depending on a number of factors including: the viewer's proximity and orientation to the turbines (i.e., someone standing within the Project Area vs. outside the Project Area and the direction someone is facing), the presence of obstructions such as tree lines and topography of the land that impedes the view of the Project, the viewer's duration around the Project Area (i.e., a resident vs. a car passing through the Project Area), and the viewer's personal preferences.

OE 31 will implement the following additional mitigation measures for visual resources:

- Wind turbines will exhibit visual uniformity in the shape, color, and size of rotor blades, nacelles, and towers.
- Collection cables or lines on the site will be buried in a manner that minimizes additional surface disturbance (e.g., collocating them with access roads, where feasible).
- For ancillary buildings and other structures, low-profile structures will be chosen whenever possible to reduce their visibility.
- Turbine foundations and roads have been designed to minimize and balance cuts and fills.
- Lighting for facilities will not exceed the minimum required for safety and security, and full-cutoff designs that minimize upward light pollution will be selected. OE 31 will comply with applicable light-mitigating technology requirements.

5.6.2.2 Shadow Flicker

A shadow flicker analysis was completed for occupied residences within approximately one mile of the Project turbines (27 receptors) using TAILS 3.0 software (Appendix G - Shadow Flicker Analysis Report), a proprietary software package owned by One Energy, the parent company of OE 31. The analysis was validated with Continuum, an open-source software. In addition, concurrence letters were obtained from two third-party firms, which confirmed the methodologies used, and found the studies were free from material defect or error. Those concurrence letters can be found in Appendix G.

TAILS 3.0 assumes clear skies 100% of the time and then cloudy to partly cloudy days are excluded to provide realistic hours of shadow flicker. All five wind turbine locations were modeled. TAILS 3.0 calculates the number of hours per year which a given receptor could expect to be exposed to shadow flicker from nearby wind turbines. The maximum realistic shadow flicker modeled (hours per year taking into account cloudy and partly cloudy days) for a residence is 12 hours. Fourteen of the 27 residences have zero hours of modeled shadow flicker. The modeled shadow flicker is generally low at all residences due in part to the minimum 1,278-foot residence setback (the Project minimum setback for non-participating inhabited residences under PSC rules). Also, all private residences where the model expects any hours of shadow flicker are greater than 2,000 feet from the turbines and at this distance the perception of shadow flicker is likely less noticeable due to light dispersion and elongated shadows. These effects make the model even more conservative in its estimated hours of shadow flicker. The Project's turbines have been sited to minimize impacts to residences. Based on the results of the Project's shadow flicker modeling, no mitigation is currently proposed.

5.7 CULTURAL AND ARCHAEOLOGICAL RESOURCES

The following sections describe existing cultural and archaeological resources, potential impacts, and proposed mitigation.

5.7.1 Existing Conditions

OE 31 hired SWCA Environmental Consultants (SWCA) to conduct the background literature review and surveys recommended by the State Historical Society of North Dakota (SHSND). SWCA discussed the Project with SHSND. SHSND recommended that OE 31 conduct a Class I Literature Review and a Class III Intensive Cultural Resources Pedestrian Survey of areas that may be affected by the Project. SHSND recommended that the area of potential effect (APE) subject to the Class III Pedestrian Survey be defined as any ground surface area that has the potential to be disturbed by any construction or installation activities associated with the Project.

Additionally, SHSND recommended a Class II Architectural History Survey within a two-mile visual APE of the turbine array. The two-mile visual APE for the Class II Architectural History Survey includes documentation of all buildings, structures, and objects 45 years of age or older from the survey date.

SWCA conducted a Class I Literature Review of the Project plus a one-mile buffer from the Project facilities at the SHSND in June 2021. The review included relevant records holdings at the SHSND regarding previously conducted cultural resource inventories and previously recorded historic and prehistoric sites. In addition, SWCA searched historical survey maps of the inventory area. The historic Land Office survey map dated to 1914 shows no trails, structures or features within the Project inventory area, which is the area that has the potential to be disturbed by the Project. The records search results identified 12 previous

cultural inventories that have been conducted within one mile of the Project between 1980 and 2017. Thirty previously recorded cultural resources were identified within one mile of the Project facilities.

SWCA conducted a Class III Intensive Cultural Resources Pedestrian Inventory of a 400-foot by 400-foot area surrounding each of the five proposed wind turbine locations, 100-foot-wide corridors centered on the proposed access road alignments, and 50-foot-wide corridors centered on the proposed collection lines, as well as laydown areas and temporary workspaces, with a total inventory area of 45.07 acres in June and August 2021. As recommended by the SHSND, the Class III inventory area was designed to cover ground surface area that has the potential to be disturbed by any construction or installed activities associated with the Project. The current proposed layout for the Project is within the area surveyed. The Class III inventory resulted in the recording of two segments of a previously recorded resource, which is considered eligible for the NRHP. Avoidance is recommended for this cultural site.

SWCA also conducted a Class II Architectural History Survey of a two-mile radius from the turbine sites in July 2021. The survey methodology conformed to the North Dakota SHPO guidelines for considering indirect effects of wind turbine projects and included documentation of all buildings, structures, and objects 45 years of age or older from the survey date. The Class II survey resulted in identification of 11 historic architectural sites within two miles of the turbine sites; one resource is recommended as eligible for listing in the NRHP. SWCA concluded that the proposed Project will have no adverse effect on the resource considering that industrial components associated with a railyard and the Renewable Diesel Facility are already visible from the ROW and the new wind turbines will not further diminish the integrity of the setting. Additionally, a windbreak along the west obscures the industrial components from the viewshed of the contributing resources.

The SWCA survey report, which includes detailed information on the methodologies and results of the Class I literature search and the Class III and Class II surveys, is provided in Appendix H and Appendix I, respectively.

5.7.2 Impacts and Mitigation

Ground disturbing activities during construction of the Project have the potential to impact known or unknown cultural resources. Because the Project involves the construction and operation of wind turbines, if historic architectural resources are present in the area, the presence of wind turbines could affect the visual setting of these resources.

OE 31 has sited the Project facilities to avoid archeological sites identified and recommended for avoidance as a result of the Class I Literature Review and Class III Pedestrian Survey. Therefore, the Project would not affect historic properties eligible for or listed in the NRHP.

None of the 11 historic architectural resources identified in the Class II Architectural History Survey will be directly affected by construction or operation of the Project. SWCA notes in its report that the visual setting of these resources already includes modern infrastructure such as the Renewable Diesel Facility and a railyard. Therefore, the wind turbines associated with the current Project would be similar to existing modern developments already present within the visual setting of these resources. Additionally, a windbreak along the west side of the resource would obscure the view of the Project's components. the industrial components from the viewshed of the contributing resources. For these reasons, SWCA concluded that the Project will have no adverse effect on historic architectural resources.

Class I, II, and III survey work for the Project is complete and the survey report and site forms were submitted to the SHSND for review in September 2021. SDSND concurred with the determination of "No Historic Properties Affected" for the Class I and Class III Cultural Resource Inventory and "No Adverse Effect" determination for the Class II Study. An Unanticipated Discoveries Plan will be prepared and provided if requested by the SHSND.

5.8 RECREATIONAL RESOURCES

The following sections describe existing recreational resources in the Study Area, potential impacts, and proposed mitigation.

5.8.1 Existing Conditions

There are no designated recreation areas, public or private parks, or designated trails located in the Study Area (Dickinson Parks and Recreation, Undated).

5.8.2 Recreational Resources Impacts and Mitigation

As there are no designated recreational areas within the Study Area, OE 31 does not expect there to be any impacts to these resources and no mitigation is proposed.

5.9 EFFECTS ON LAND-BASED ECONOMIES

The following sections describe existing conditions, potential impacts, and proposed mitigation for agriculture and woodlands.

5.9.1 Existing Conditions

The following sections describe existing agriculture and woodlands in the Study and Project Areas.

5.9.1.1 Agriculture

As noted in Table 5.2-1, agricultural areas classified as cultivated crops or hay/pasture in the NLCD data are present within the Project Area. Approximately 100.9 acres or 26.6 percent of the total Project Area falls into these categories.

5.9.1.2 Woodlands

As noted in Table 5.2-1, areas classified as Deciduous/Evergreen/Mixed Forest in the NLCD data are present within the Project Areas. Approximately 1.4 percent of the total Project Area falls into this category.

5.9.2 Land-Based Economies Impacts and Mitigation

The following sections describe impacts and proposed mitigation to agriculture and woodlands.

5.9.2.1 Agriculture

The construction of the Project could cause minimal, temporary impacts to agricultural land from soil compaction and rutting, crop damage, and temporary disruption to normal farming activities. OE 31 will repair and restore temporary impacts and will not significantly impact use of land for agricultural production. Agricultural practices will continue in the Project Area, excluding areas in direct proximity of Project construction, during both Project construction and operation. OE 31 prioritized siting the Project in previously disturbed agricultural land while minimizing impacts to the tenant. The Project will impact 6.0 acres of agricultural land for the life of the Project. Additionally, approximately 16.2 acres would be

temporarily disturbed during construction. After the Project is installed and during operation, the tenant may continue to plant crops and graze livestock near and up to the turbine pads and access roads.

OE 31 reviewed the Project layout with MPC including its tenant liaison to discuss siting concerns, particularly related to agricultural activities.

The loss of agricultural land for operation of the Project will reduce the amount of land that can be cultivated in the Project Area; however, the Project will cause less than two percent of the Project Area (6.0 acres) to be converted to non-agricultural land use (i.e., wind turbines, access roads). This represents minimal impact to agricultural land in the Project Area and will not significantly alter agricultural production in the Project Area or Stark County.

The Project also supports the Renewable Diesel Facility, which buys oils derived from more than 4.5 million acres of corn and soy crops and is highly beneficial to the agricultural community.

5.9.2.2 Woodlands

Trees are sparsely located throughout the Project Area. No trees are expected to be removed for the construction or operation of the Project.

5.10 SOILS

The following sections describe existing soil conditions, potential impacts, and proposed mitigation.

5.10.1 Existing Conditions

Soil characteristics within the Study Area and Project Area were assessed using the Soil Survey Geographic Database (SSURGO) database (USDA NRCS, 2019). The SSURGO database is a digital version of the original county soil surveys developed by NRCS for use with geographic information systems (GIS). It provides the most detailed level of soils information for natural resource planning and management. Soil maps are linked in the SSURGO database to information about the component soils and their properties (USDA NRCS, Undated).

There are 15 soil types found within the Project Area and 49 within the Study Area (USDA NRCS, 2019). Due to the quantity of soil types, they are provided separately in Appendix K – Soil Types, including farmland classification. Farmland classifications, including prime farmland, are described below.

Farmland Classification

Prime farmland is defined as land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, and oilseed crops, and is also available for these uses (the land could be cropland, pasture, woodland, or other lands). Urbanized land and open water cannot be designated as prime farmland. Prime farmland typically contains few or no rocks, is permeable to water and air, is not excessively erodible or saturated with water for long periods and is not subject to frequent or prolonged flooding during the growing season. Soils that do not meet the above criteria may be considered prime farmland if the limiting factor is mitigated (e.g., by draining or irrigating) (USDA NRCS, Undated).

The NRCS also recognizes farmlands of statewide importance, which are defined as lands other than prime farmland that are used for production of specific high-value food and fiber crops (e.g., citrus, tree nuts, olives, fruits, and vegetables). Farmlands of statewide importance have the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality or high yields of specific crops when treated and managed according to acceptable farming

methods. Farmland of statewide importance is similar to prime farmland but with minor shortcomings such as greater slopes or less ability to store soil moisture. The methods for defining and listing farmland of statewide importance are determined by the appropriate State agencies, typically in association with local soil conservation districts or other local agencies.

Table 5.10-1 lists the soils considered prime farmland and soils of statewide or local importance within the Study Area and Project Area.

TABLE 5.10-1: FARMLAND CLASSIFICATIONS WITHIN STUDY AND PROJECT AREAS

FARMLAND CLASSIFICATION	PROJECT AREA (ACRES)	PERCENTAGE OF PROJECT AREA	STUDY AREA (ACRES)	PERCENTAGE OF STUDY AREA
Prime Farmland	27.2	7.2	86.5	2.9
Farmland of Statewide Importance	173.3	45.8	965.5	31.6
Not Prime Farmland	177.7	47.0	2000.2	65.5
Total	**378.2**	**100.0**	**3052.2**	**100.0**

Soil Survey Staff, 2019
*There are slight discrepancies in the total acreage of the Study and Project Areas due to the nature of the SSURGO tool.

Table 5.10-1: Farmland Classifications within Study and Project Areas

5.10.2 Soils Impacts and Mitigation

Surface disturbance caused by construction of the wind turbines and infrastructure improvements would result in the soil surface becoming more prone to erosion and the use of heavy equipment could result in soil compaction. However, any such impacts to site soils will be localized and BMPs associated with the Project's SWPPP will be implemented to minimize these impacts. Existing access roads will be used to the extent practicable to prevent further soil disturbance and fragmentation of the landscape.

Less than two percent of the total land in the Project Area that could be considered prime farmland or farmland of statewide importance will be impacted for the life of the Project. As such, the acreage of prime farmland and farmland of statewide importance removed from use for the life of the Project will have a negligible impact on agricultural production.

TABLE 5.10-2: SUMMARY OF PERMANENT IMPACTS TO PRIME FARMLAND (ACRES)		
PRIME FARMLAND CLASSIFICATION	**# TURBINES**	**ACRES**
Prime Farmland	0	0.0
Farmland of Statewide Importance	3	3.4
Not Prime Farmland	2	3.3
Total	**5**	**6.7**
Acreage of impacts includes all permanent facilities (permanent grave access roads, turbine pedestals, transformers, crane pads, and gravel laydown and staging areas). No permanent impacts to farmland take place in the Renewable Diesel Facility area.		

Table 5.10-2: Summary of Permanent Impacts to Prime Farmland (Acres)

5.11 GEOLOGIC AND GROUNDWATER RESOURCES

The following sections describe existing geologic and groundwater resources, potential impacts, and proposed mitigation. Figure 8, Geologic and Groundwater Resources depicts the existing geologic and groundwater resources in the Study and Project Areas.

5.11.1 Existing Conditions

The Study Area is located in a region of North Dakota known as the Missouri Slope, an area of sandstone and shale that was largely unaffected by glaciers that covered the eastern half of North Dakota. The area has an irregular topography with the occasional butte rising above the landscape. Surface geology within the Study Area is composed of Sentinel Butte, which is characterized by sediment between 300 and 700 feet in thickness (Figure 8, Geologic and Groundwater Resources).

The geology of western North Dakota, including Stark County, has created a rich environment for oil and gas development. There are two existing oil and gas wells within the Project Area. However, impacts are not anticipated because the wells are outside of the disturbance area for the Project.

According to the publicly available ND Department of Water Resources MapService, there is one aquifer located in the northeast corner of Stark County (ND Dept. of Water Resources, Undated). The aquifer is not located near the Project Area or Study Area. There are two domestic/stock/industrial/observational water wells in the Study Area; of these, none are within the Project Area (ND Dept. of Water Resources, Undated).

5.11.2 Geologic and Groundwater Impacts and Mitigation

OE 31 does not anticipate any impacts to bedrock during construction or operation of the Project as bedrock within the Project Area is at depths much greater than proposed foundation depths of six-to-eight feet deep. Similarly, OE 31 does not expect any impacts to groundwater resources as there are no aquifers or water wells in the Project Area (NDGISHUB, 2019; ND Dept. of Water Resources, Undated).

OE 31 does not plan to use material amounts of water on site during construction or operations. During construction, water will be used for power washing components and will be sourced from the Renewable Diesel Facility's water system. Turbine siting avoids water wells. The water supply for residents within the Study Area is not anticipated to be affected by the Project.

OE 31 does not anticipate any impacts to oil and gas production because the two wells in the Project Area are outside the disturbance area (North Dakota Oil and Gas Division, 2021). Therefore, no mitigation is proposed.

5.12 SURFACE WATER, FLOODPLAIN, AND WETLANDS RESOURCES

The following sections describe existing surface water, wetlands, and floodplain resources, potential impacts, and proposed mitigation. Figure 9, Water Resources depicts the water resources in the Study and Project Areas.

5.12.1 Existing Conditions

5.12.1.1 Surface Water and Floodplains

The Study Area is located in the Upper Heart River watershed. This watershed is within the western mixed-grass/short-grass prairie region. This region contains few natural wetland basins, but small creeks and streams are present (Figure 9, Water Resources). Wetlands in this area are typically associated with creeks and streams instead of isolated "potholes."

There are 128.8 acres of 100-year floodplain in the Project Area (Figure 9, Water Resources). These floodplains are associated with Heart River, which runs through the Project Area from northwest to southeast (FEMA, Undated).

5.12.1.2 Wetlands

Wetlands are areas with hydric (wetland) soils, hydrophilic (water-loving) vegetation, and wetland hydrology (inundated or saturated much of the year). Wetland types include marshes, swamps, bogs, and fens. Wetlands vary widely due to differences in soils, topography, climate, hydrology, water chemistry, vegetation, and other factors.

Wetlands within the Project Area were identified using the National Wetlands Inventory (NWI). There are 23.6 acres of wetlands in the Project Area, most of which are associated with lakes and riverines (USFWS, 2021).

In addition, a field wetland delineation was completed by SWCA on June 11, 2021. Wetlands were delineated within a survey corridor that included any ground surface area that has the potential to be disturbed by any construction or installation activities associated with the Project. The purpose of the wetland delineation was to determine if there were any aquatic resources impacted by construction or operation of the Project that could qualify as waters of the U.S. and be subject to permitting by the U.S. Army Corps of Engineers (USACE). The SWCA wetland biologist identified no wetlands within the area surveyed. Three bends of the Heart River waterbody were delineated within the survey area, but no impacts to those areas will occur during development of the Project. The wetland Technical Memorandum written by SWCA showing these results can be found in Appendix J.

5.12.2 Surface Water, Floodplain, and Wetland Resources Impacts and Mitigation

5.12.2.1 Surface Water and Floodplain Resources Impacts and Mitigation

Project facilities have been designed to avoid or minimize impacts to surface water resources to the extent practicable.

If a project results in work over, in, or under navigable waters (Section 10 of the Rivers and Harbors Act) or the discharge of dredged or fill materials into water of the United States (Section 404 CWA), a Section 10 and/or Section 404 permit needs to be acquired from the USACE. The Heart River runs through the Project Area. Placement of collection lines for the Project will require boring under the Heart River. The surface area of the Heart River will not be impacted and no dredged or discharged material will be discharged into the Heart River. However, the bore under the river may implicate Section 10 of the Rivers and Harbors Act and necessitate OE 31 obtaining coverage under a USACE Nationwide Permit and a Sovereign Lands Permit from the State of North Dakota. OE 31 anticipates that impacts to Section 10 waters will be permitted under the Nationwide Permit program. The Project is not expected to cause a discharge of dredge or fill into waters of the United States, so the Project will not require a permit under Section 404 of the Clean Water Act.

As can be seen in Figure 9, some areas of the collection line will be located in the 100-year floodplain. However, impacts caused by the collection line will be temporary and limited to construction. In addition, impacts will be minimized through construction practices. As Figure 9 also shows, two small sections of gravel access road will also be located in the floodplain. One of these access roads is being used to access a public road that is located in the floodplain (116th Avenue). Therefore, there is no reasonable alternative but for a small section of access road to be located in the floodplain to access the public road. In addition, one other small area of access road will be located in the floodplain. This access road is located at the gate of a DPR-owned and controlled fence in the Project Area for security purposes. There is no reasonable alternative but to have the access road go through the security gate. Moving the gate and access road to the west out of the floodplain would route traffic through areas of the Renewable Diesel Facility that are heavily used by DRP contractors and experience high volumes of vehicular and pedestrian traffic. This area is the site of a contractor trailer yard and parking area and includes existing infrastructure including electrical systems to enable contractors to operate in that area. Routing additional traffic through this area for construction and operation of the Project would increase safety risk for both vehicles and pedestrians in the area and require significant infrastructure to be relocated.

5.12.2.2 Wetland Impacts and Mitigation

The Project has been designed to avoid impacts to delineated wetlands. SWCA concluded that since no impacts will occur to wetlands through development of the Project, the Project will not need coverage under a USACE Nationwide Permit. Given there will be no impacts to wetlands, mitigation was not warranted.

5.13 VEGETATION

The following sections describe existing vegetation, potential impacts, and proposed mitigation.

5.13.1 Existing Conditions

SWCA conducted an analysis of the vegetation present. SWCA identified that the Project is situated within the northwestern Great Plains ecoregion, characterized by native grasslands over rolling plains. Vegetation typical to the northwestern Great Plains ecoregion includes such species as blue grama (Bouteloua gracilis), western wheatgrass (Pascopyrum smithii), little bluestem grasses (Schizachyrium scoparium), and prairie sandreed (Calamovilfa longifolia). SWCA surveyed vegetation located in a survey corridor that included any ground surface area that has the potential to be disturbed by any construction or installed activities associated with the Project. Vegetation observed within the area surveyed included such species as sweet

clover (Melilotus officinalis), Kentucky bluegrass (Poa pratensis), Canada thistle (Cirsium arvense), prickly pear cactus (Opuntia fragilis), western snowberry (Symphoricarpos occidentalis), yarrow (Achillea millefolium), silver buffaloberry (Shepherdia argentea), fringed sagewort (Artemisia frigida), wild bergamot (Monarda fistulosa), crested wheatgrass (Agropyron cristatum), and goldenrod (Solidago canadensis).

As shown in Table 5.2-1, based on NLCD data, shrub/scrub covers approximately 31.1 percent of the Study Area and 8.4 percent of the Project Area, grassland/herbaceous covers approximately 16.6 percent of the Study Area and 14.7 percent of the Project Area, and cultivated crops make up 17.3 percent of the Study Area and 25.0 percent of the Project Area. Areas classified as Deciduous/Evergreen/Mixed Forest in the NLCD data are present within the Project Areas. Approximately 1.4 percent of the total Project Area falls into this category, which is discussed in Section 5.9.1.2.

5.13.2 Impacts and Mitigation

According to the NLCD, the Project will impact 6.4 acres of vegetation, 93.8 percent of which is agricultural (cultivated crops and hay/pasture; see Table 5.2-3) for the life of the Project. There are an additional 5.0 acres of impacts to land classified as developed. Construction of the Project will temporarily impact 18.5 acres of vegetation. Following construction, the temporarily disturbed areas will be re-vegetated with a seed mixture consistent with the surrounding vegetation or reopened for cultivation. Once re-vegetated, these areas will be available for their present use (e.g., cultivation and grazing).

OE 31 has minimized disruptions to vegetative communities to the extent practicable by utilizing existing roads, driveways, edge of field lines, or other previously disturbed areas for proposed facility access road locations to the extent possible. OE 31 has also co-located linear facilities (crane paths, collection lines, and access roads) as much as possible.

5.14 WILDLIFE

5.14.1 Existing Conditions

The U.S Fish and Wildlife Service (USFWS) Land-Based Wind Energy Guidelines (WEG) and Wind Energy Development in North Dakota Best Management Practices (NDBMP) served as a basis for the approach taken regarding wildlife studies for the Project and set forth the BMPs that will be implemented to minimize impacts to wildlife (USFWS, 2012; NDGF, 2021). OE 31 coordinated with both USFWS and NDGF on the approach taken regarding studies and requested information regarding known species near the Project from both agencies and the ND Parks and Recreation Department.

It is important to note that both the USFWS WEG and NDBMP are voluntary guidelines and primarily designed with large utility-scale wind projects in mind. The USFWS WEG specifically acknowledge that while the general tiered approach of the USFWS WEG should be followed for both utility and community scale projects, the size and geographic scope of distributed and community-scale projects often make study beyond Tier 1 and Tier 2 unnecessary (USFWS, 2012).

Figure 1 of the USFWS WEG shows the general framework of the tiered approach to guide the decision-making process for a project (USFWS, 2012).

Figure 1. General Framework of Tiered Approach

TIER 1

A. Species of concern known to be present?
   1. No ..... proceed to Tier 2
   2. Unknown - Insufficient or inconclusive data ..... proceed to Tier 2
   3. Yes..... abandon site or proceed to Tier 2

TIER 2

A. Probability of significant adverse impacts?
   1. Unknown - Insufficient or inconclusive data ..... proceed to Tier 3
   2. Low..... proceed to obtain state and local permit (if required), design, and construction following BMPs
   3. Moderate ..... proceed to Tier 3 and mitigate
   4. High, and:
      a. can be adequately mitigated....modify project and proceed to Tier 3
      b. cannot be adequately mitigated..... abandon project

TIER 3

A. Probability of significant adverse impacts?
   1. Low ..... proceed to Tier 4
   2. Moderate to high, and:
      a. certainty regarding mitigation ..... proceed to Tier 4
      b. uncertainty regarding mitigation ..... proceed to Tier 4
   3. High, and:
      a. can be adequately mitigated..... proceed to Tier 4
      b. cannot be adequately mitigated ..... modify or abandon project

TIER 4a (See Table 2, pg 39)

A. Tier 3 studies indicate low probability of significant adverse impacts
   1. Documented fatalities are equal to or lower than predicted..... no further studies or mitigation needed
   2. Documented fatalities are higher than predicted, but not significant, and:
      a. comparable data are available that support findings of not significant..... no further studies needed
      b. comparable data not available to support findings of not significant..... additional year(s) of monitoring recommended
   3. Documented fatalities are higher than predicted and are significant..... communicate with Service

Figure 1 of the USFWS WEG. (USFWS, 2012).

The Tier 1 study uses publicly available information to determine whether the project area proposed is in a region where development poses a significant risk to species of concern or their habitats, screens sites for those with the highest habitat values, and determines if a single site poses serious risk to species of concern or their habitats (USFWS, 2012). The Tier 2 study involves a focus on site-specific information and a reconnaissance survey by a knowledgeable biologist at the site to determine if a known species of concern or habitat is present at the site, and whether the landscape contains areas where development is precluded by law or sensitive areas, among other items (USFWS, 2012). If there are no species of concern known to be present (or insufficient or inconclusive data regarding species present) and a low probability of significant adverse impacts, then the framework advises the developer may proceed with the project and permit, design, and construct the project using BMPs (USFWS, 2012).

Following this approach, OE 31 contacted NDGF, the ND Parks and Recreation Department, and USFWS to determine if there were known species in the area. These agencies responded with the following:

An email on August 3, 2021, from NDGF stated the following:

> We do not have a grouse census block in the area so we have no information to provide on grouse leks. We don't know of any known bald eagle nests in the area either, but we do know of one golden eagle nest that is approximately 3.5 miles outside of the project boundary.

A letter on July 27, 2021 from The North Dakota Parks and Recreation Department stated the following:

> The North Dakota Natural Heritage biological conservation database has reviewed the project to determine if any current or historical plant or animal species of concern or other significant ecological communities are known to occur within an approximate one-mile radius of the project area. Based on this review, we have no known rare species or significant ecological communities documented within or immediately adjacent to the project site. Because the Natural Heritage information is not based on a comprehensive inventory, there may be species of concern or otherwise significant ecological communities in the area that are not represented in the database. The absence of data may indicate that the project area has not been surveyed rather than confirm that it lacks natural heritage resources.

USFWS responded that it did not have any information in addition to what NDGF would have.

In addition to reaching out to agencies to find information on known species in the area, OE 31 contracted with SWCA to conduct a Tier 1 Preliminary Site Evaluation and a Tier 2 Site Characterization Report. The full study is found in Appendix M of the application. The study provides a comprehensive analysis regarding existing conditions in the area for species including, but not limited to, avian species, prairie grouse species/ground-based grouse leks, mammals, bat species, special status lands, lands of biological significance, species of conservation priority, and threatened and endangered species (including the Northern Long-Eared Bat and Whooping Crane). After conducting its study, SWCA concluded the following:

> Based on information obtained during the Tier 1 and 2 assessments, overall risk to wildlife, including northern long-eared bat and whooping crane, is considered relatively low. The Project has a rated capacity of 11.75 MW and is thus considered to be a community-scale wind project under the USFWS's Land-Based Wind Energy Guidelines. Those guidelines state that "The Service anticipates that many distributed or community facilities will not need to follow the Guidelines beyond Tiers 1 and 2."

Following the responses to the information request and Tier 1 and Tier 2 studies, OE 31 applied the WEG general framework as follows:

1. Tier 1, Are species of concern known to be present? – NO, Proceed to Tier 2
2. Tier 2, Probability of significant adverse impacts? LOW, proceed to obtain state and local permits (if required) design, and construction following BMPs.

OE 31 coordinated with USFWS and NDGF on its approach taken and provided both agencies with the wetland delineation study, the Tier 1 and Tier 2 studies, and OE 31's application of the WEG general framework as explained in this Application. USFWS provided OE 31 with a letter in response, which stated USFWS's:

> foremost recommendation to all wind energy development companies in North Dakota is to avoid grasslands and wetlands.—two primary types of habitat in the state that support native species. The proposed site is sited entirely on tilled land which greatly increases the potential to avoid and reduce direct/indirect impacts to wildlife habitat. However, as we have stated in telephone conversations and emails, the presence of permanent and intermittent streams near the project area indicate the potential presence of bats, eagles, and other migratory birds. For utility scale wind projects, we would typically have preconstruction survey data that would provide some information about wildlife presence and use. In the absence of this data, One Energy will implement the 27 best management practices (BMP) recommended by the WEG for new wind turbine construction and the 18 BMPs recommended in *Wind Energy Development in North Dakota Best Management Practices.* One Energy will also pay for and operate two thermal camera data collection systems in coordination with the National Renewable Energy Lab (NREL) to complement existing research about bat behavior around community wind projects. The Service agrees that this information will be valuable to inform other wind projects regarding siting and avoidance and minimization measures for bats. We would also respectfully request that incident reports and data form the cameras be submitted to us periodically throughout the process. Note that the implementation of BMPs and thermal cameras does not absolve liability for take under the Endangered Species Act (16 U.S.C 1531 *et seq.*), the Migratory Bird Treaty Act (16 U.S.C. 703 *et seq.*), or the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, 54 Stat. 250).

The complete letter from USFWS can be found in Appendix E.

OE 31 received a letter from NDGF on November 9, 2021 (also found in Appendix E), which stated the following:

> The Project is a unique case, as most of the research and recommendations regarding wind development have been focused on large scale, commercial projects. There is much uncertainty of the risk small, community projects pose and very few recommendations on how to mitigate that risk. However, as the Department recommends in all cases, avoiding native habitats (grasslands, woodlands, and wetlands) is essential for creating a sustainable balance of energy development and wildlife conservation. With all 5 turbines being cited in already disturbed land, the developer has taken an important first step in reducing risk.
>
> However, the project falls within both the State Wildlife Action Plan's (SWAP) Priority Areas and the High Impact to Native Wildlife and Habitat area in the Department's Wind Energy Development in North Dakota Best Management Practices. This is due to the high concentration of (riparian) woodland and wetland habitats in the area. The project is encircled by the Heart River and impacts to species that depend on the river and associated riparian woodlands may be negatively impacted by the development of turbines, specifically species of conservation priority such as the little brown bat. In our early guidance letter, the Department recommended that the developer conduct pre-construction surveys to better understand the risk to bats and eagles. It is our understanding that One Energy has been working closely with the United States Fish and Wildlife Service (Service), along with the National Renewable Energy Lab (NREL), on developing post construction monitoring protocols to better understand the risk of small-scale projects on these species in the absence of pre-construction data. The Department is supportive of the

recommendations the Service has made and asks to remain informed by receiving incident reports and data from post construction surveys.

5.14.2 Wildlife Impacts

5.14.2.1 Avian Species

Raptors and eagles

Raptors and eagles may be impacted directly or indirectly as a result of the construction and operation of wind facilities. Direct impacts may result from collision with operating turbines and from the clearing and construction of the Project. Indirect impacts on birds may occur through displacement or avoidance of habitat.

In its Tier 1 and Tier 2 study, SWCA found that based on range and distribution, there is the potential for raptors and eagles to be present in the Development Area (the area where the Project infrastructure would be located that was studied by SWCA) and a one-mile buffer. It also found relatively few mature trees are present within the Development Area that could provide nesting habitat for tree nesting raptors, though mature trees suitable for nesting were observed within a 1-mile buffer. SWCA did not observe suitable trees for nesting bald eagles in the Development Area but did observe them within a one-mile buffer. SWCA had no incidental observations of bald or golden eagles or their nests during the site reconnaissance visit but had one observation of a red-tailed hawk. NDGF indicated no known bald eagle nests were located within two miles of the Development Area for the Project but that one known golden eagle nest is located approximately 3.5 miles away. SWCA identified no important eagle use areas, migration concentration sites, or communal eagle roost sites within the Development Area or 1-mile buffer.

Prairie grouse species/ground-based grouse leks

In its Tier 1 and Tier 2 study, SWCA found the Development Area consists of primarily cultivated cropland and as such is not likely to support nesting sharp-tailed grouse, though sharp-tailed grouse may forage within the area. SWCA did observe suitable nesting and foraging habitat within the 1-mile buffer during site reconnaissance. As such, SWCA found the potential exists for sharp-tailed grouse leks and individuals to occur within the Development Area and 1-mile buffer but sharp-tailed grouse are not expected to nest within the Development Area.

5.14.2.2 Mammals

The Development Area and 1-mile buffer are outside of the established range for elk, bighorn sheep, and moose in North Dakota. However, the Development Area and 1-mile buffer are within the established range for white-tailed deer, pronghorn, and mule deer. Pronghorn and mule deer are unlikely to be present in the Development Area due to range and habitat characteristics. White-tailed deer and other mammals may be impacted directly or indirectly by ground clearing activities associated with construction of the turbines and associated facilities. Permanent impacts to land for the life of the Project would also result from the direct conversion of habitat and areas for foraging.

5.14.2.3 Bat Species

In its Tier 1 and Tier 2 study, SWCA found that eleven bat species are known to occur in North Dakota and six species may occur in Stark County. Potential impacts to bat species from the construction and operation of the Project include direct impact due to collision with operating turbines and infrastructure.

5.14.2.4 Special-Status Lands and Lands of Biological Significance

SWCA identified no critical habitats within the Development Area, or within five miles of the Development Area. SWCA also identified no Important Bird Areas, Western Hemisphere Shorebird Reserve Network sites, Wetlands of International Importance (Ramsar Sites), Wilderness Areas, Wild and Scenic Rivers, National Wildlife Refuges, or state parks within the Development Area, or within five miles of the Development Area. As such, there are no impacts anticipated to these special-status lands and lands of biological significance.

5.14.2.5 Species of Conservation Priority

SWCA found 48 species categorized as SCP may occur within the Development Area or 1-mile buffer, including two federally listed species and bald and golden eagles. None of these species were observed within the Development Area or 1-mile buffer during the field reconnaissance visit. All remaining SCP species assessed were determined to be unlikely to occur within the Development Area or 1-mile buffer based on range and habitat characteristics.

5.14.2.6 Threatened and Endangered Species

Two federally listed species, whooping crane and northern long-eared bat, may occur within the Development Area and 1-mile buffer. Based on the species' habitat and range requirements, anticipated use of the Development Area or 1-mile buffer by these species is expected to be occasional or rare.

5.14.3 Mitigation of Wildlife Impacts

To mitigate the Project's impacts to wildlife, OE 31 will implement and comply with all 45 of the BMPs contained in the USFWS WEG and NDBMP. Details of this implementation and compliance are set forth below:

USFWS WEG BMPs

Chapter 7 of the WEG contain 27 best management practices for new wind turbine construction. This Project complies with all 27 best management practices as detailed below:

TABLE 5.14-1: SUMMARY OF COMPLIANCE WITH USFWS WEG BMPs

#	UWFWS WEG BMP	PROJECT COMPLIANCE	✓
1	Minimize, to the extent practicable, the area disturbed by pre-construction site monitoring and testing activities and installations.	The Project is designed using the minimum possible disturbed area. Existing roads are being used to the extent possible.	✓
2	Avoid locating wind energy facilities in areas identified as having a demonstrated and unmitigatable high risk to birds and bats.	Based on the conclusions of the Tier 1 and 2 studies and data requests with appropriate agencies there are no high-risk areas in the Project Area.	✓

3	Use available data from state and federal agencies, and other sources (which could include maps or databases), that show the location of sensitive resources and the results of Tier 2 and/or 3 studies to establish the layout of roads, power lines, fences, and other infrastructure.	OE 31 has obtained all known sensitive resource data for the Project Area. OE 31 has designed the Project to avoid undisturbed native lands and streams. The specific project design was considered during the Tier 1 and Tier 2 studies.	✓
4	Minimize, to the maximum extent practicable, roads, power lines, fences, and other infrastructure associated with a wind development project. When fencing is necessary, construction should use wildlife compatible design standards.	The Project was designed with the minimum number of roads, powerlines, and other infrastructure. No new fences will be constructed.	✓
5	Use native species when seeding or planting during restoration. Consult with appropriate state and federal agencies regarding native species to use for restoration.	The only disturbed area will be already disturbed land and land used for farming. The disturbed areas without permanent facilities will be replanted and returned to farmland following project installation.	✓
6	To reduce avian collisions, place low and medium voltage connecting power lines associated with the wind energy development underground to the extent possible, unless burial of the lines is prohibitively expensive (e.g., where shallow bedrock exists) or where greater adverse impacts to biological resources would result: a. Overhead lines may be acceptable if sited away from high bird crossing locations, to the extent practicable, such as between roosting and feeding areas or between lakes, rivers, prairie grouse and sage grouse leks, and nesting habitats. To the extent practicable, the lines should be marked in accordance with Avian Power Line Interaction Committee (APLIC) collision guidelines. b. Overhead lines may be used when the lines parallel tree lines, employ bird flight diverters, or are otherwise screened so that collision risk is reduced. c. Above-ground low and medium voltage lines, transformers and conductors should follow the 2006 or most recent APLIC "Suggested Practices for Avian Protection on Power Lines."	All power lines are underground.	✓
7	Avoid guyed communication towers and permanent met towers at wind energy project sites. If guy wires are necessary, bird flight diverters or high visibility marking devices should be used.	There are no guyed towers associated with this Project.	✓
8	Where permanent meteorological towers must be maintained on a project site, use the minimum number necessary.	There is no permanent meteorological tower for this Project.	✓

9	Use construction and management practices to minimize activities that may attract prey and predators to the wind energy facility.	One Energy Solutions LLC's construction team will ensure that attractive conditions are not created during Project construction.	✓
10	Employ only red, or dual red and white strobe, strobe-like, or flashing lights, not steady burning lights, to meet Federal Aviation Administration (FAA) requirements for visibility lighting of wind turbines, permanent met towers, and communication towers. Only a portion of the turbines within the wind project should be lighted, and all pilot warning lights should fire synchronously.	The wind turbines will each have a single red light (as required by the FAA). All lights will be synchronized. Based on the Project size, it is not prudent to light only some of the turbines. In addition, the Project will comply with the light-mitigating technology system requirements set forth in NDCC Section 49-22-16.4 and NDAC Chapter 69-06-11.	✓
11	Keep lighting at both operation and maintenance facilities and substations located within half a mile of the turbines to the minimum required: a. Use lights with motion or heat sensors and switches to keep lights off when not required. b. Lights should be hooded downward and directed to minimize horizontal and skyward illumination. c. Minimize use of high- intensity lighting, steady-burning, or bright lights such as sodium vapor, quartz, halogen, or other bright spotlights. d. All internal turbine nacelle and tower lighting should be extinguished when unoccupied.	No new exterior lighting will be added for this Project, except the lights required by the FAA.	✓
12	Establish non-disturbance buffer zones to protect sensitive habitats or areas of high risk for species of concern identified in pre-construction studies. Determine the extent of the buffer zone in consultation with the Service and state, local and tribal wildlife biologists, and land management agencies (e.g., U.S. Bureau of Land Management (BLM) and U.S. Forest Service (USFS)), or other credible experts as appropriate.	Based on the conclusions of the Tier 1 and 2 studies and data requests with appropriate agencies, there are no known sensitive habitats or areas of high risk inside the Project Area or the disturbed area.	✓
13	Locate turbines to avoid separating bird and bat species of concern from their daily roosting, feeding, or nesting sites if documented that the turbines' presence poses a risk to species.	The turbines directly surround a major industrial facility. There is no known condition for this Project where the wind turbines create a separation condition.	✓
14	Avoid impacts to hydrology and stream morphology, especially where federal or state-listed aquatic or riparian species may be involved. Use appropriate erosion control measures in construction and operation to	The Project will have a single boring under the Heart River. There will be no direct impacts to hydrology or stream morphology. The Project will have and comply with a SWPPP including associated BMPs.	✓

	eliminate or minimize runoff into water bodies.		
15	When practical use tubular towers or best available technology to reduce ability of birds to perch and to reduce risk of collision.	The Project uses tubular steel towers.	✓
16	After project construction, close roads not needed for site operations and restore these roadbeds to native vegetation, consistent with landowner agreements.	The Project will close any roads not needed for site operation. The Project will only disturb land used for farming and already disturbed land. However, in the event roadbeds did disturb native vegetation, roadbeds will be restored to native vegetation consistent with landowner agreements.	✓
17	Minimize the number and length of access roads; use existing roads when feasible.	The Project uses the existing Renewable Diesel Facility's access roads to the extent possible.	✓
18	Minimize impacts to wetlands and water resources by following all applicable provisions of the Clean Water Act (33 USC 1251-1387) and the Rivers and Harbors Act (33 USC 301 et seq.); for instance, by developing and implementing a storm water management plan and taking measures to reduce erosion and avoid delivery of road-generated sediment into streams and waters.	The Project will have a SWPPP to control surface water flow and will fully comply with the Clean Water Act and the Rivers and Harbors Act. The Project is not expected to generate any sediment into streams.	✓
19	Reduce vehicle collision risk to wildlife by instructing project personnel to drive at appropriate speeds, be alert for wildlife, and use additional caution in low visibility conditions.	The existing speed limit for the entire industrial facility is 20 mph or less. The Project will comply with that speed limit.	✓
20	Instruct employees, contractors, and site visitors to avoid harassing or disturbing wildlife, particularly during reproductive seasons.	The employees will be so instructed.	✓
21	Reduce fire hazard from vehicles and human activities (instruct employees to use spark arrestors on power equipment, ensure that no metal parts are dragging from vehicles, use caution with open flame, cigarettes, etc.). Site development and operation plans should specifically address the risk of wildfire and provide appropriate cautions and measures to be taken in the event of a wildfire.	The Renewable Diesel Facility has robust rules related to fire hazard given the nature of its operations. The Project team will take multiple precautions to avoid creating conditions where a fire could exist or be ignited.	✓
22	Follow federal and state measures for handling toxic substances to minimize danger to water and wildlife resources from spills. Facility operators should maintain Hazardous Materials Spill Kits on site and train personnel in the use of these.	This community-scale Project is relatively small and will have a minimal amount of hazardous substances involved in its construction. The Project will have multiple spill kits on site and One Energy Solutions LLC personnel are trained in spill response. The site will also comply with a full SWPPP plan.	✓

23	Reduce the introduction and spread of invasive species by following applicable local policies for invasive species prevention, containment, and control, such as cleaning vehicles and equipment arriving from areas with known invasive species issues, using locally sourced topsoil, and monitoring for and rapidly removing invasive species at least annually.	No new topsoil will be brought into the site. Vehicles will not be permitted on site if they arrive dirty from an out-of-region site.	✓
24	Use invasive species prevention and control measures as specified by county or state requirements, or by applicable federal agency requirements (such as Integrated Pest Management) when federal policies apply.	In the event that invasive weeds are encountered in the cultivated fields, OE 31 will comply with county guidelines and prudent practices.	✓
25	Properly manage garbage and waste disposal on project sites to avoid creating attractive nuisances for wildlife by providing them with supplemental food.	It is anticipated there will be a single Project dumpster and it will be frequently emptied. If the dumpster is found to attract wildlife during construction, OE 31 will ensure that the emptying frequency will be increased and/or the dumpster will be covered.	✓
26	Promptly remove large animal carcasses (e.g., big game, domestic livestock, or feral animal).	Will comply if condition arises.	✓
27	Wildlife habitat enhancements or improvements such as ponds, guzzlers, rock or brush piles for small mammals, bird nest boxes, nesting platforms, wildlife food plots, etc. should not be created or added to wind energy facilities. These wildlife habitat enhancements are often desirable but when added to a wind energy facility result in increased wildlife use of the facility which may result in increased levels of injury or mortality to them.	Will comply. No enhancements will be added.	✓

Table 5.14-1: Summary of Compliance with USFWS WEG BMPs

NDBMP

Beginning on page 18 of the NDBMP, 18 best management practices are provided for new wind turbine construction. This Project complies with all 18 best management practices as detailed below:

TABLE 5.14-2: SUMMARY OF COMPLIANCE WITH NDBMP			
#	**NDBMP**	**PROJECT COMPLIANCE**	✓
1	Avoid disturbance to native, unbroken habitats (grasslands, wetlands, and woodlands). a. Site turbines, roads, and other infrastructure on areas already disturbed land (tilled or otherwise broken) as often as possible. b. Avoid siting turbines, roads, or other infrastructure in areas that will fragment large, contiguous tracts of native habitats.	This Project will not disturb any native, unbroken habitats. The entire Project is sited on already disturbed land and will not fragment native habitats or impact any wetlands.	✓

	c. Avoid siting turbines, roads, or other infrastructure in wetland dense areas.		
2	Avoid disturbance to land enrolled in CRP SAFE.	There are no CRP SAFE areas in the Project Area.	✓
3	Minimize, to the extent possible, the amount of area disturbed for siting and construction activities. a. Use pre-existing roads and minimize, to the extent possible, the length of new roads needed to be created.	The Project is designed using the minimum possible disturbed area. Existing roads are being used to the extent possible.	✓
4	Avoid siting turbines or other infrastructure within the Greater Sage-Grouse Priority Conservation Areas (PCA): https://gf.nd.gov/sites/default/files/publications/nd-sage-grouse-plan-2014_0.pdf	There are no Greater Sage-Grouse Priority Conservation Areas inside the Project Area.	✓
5	Avoid siting turbines in nesting habitat within a 2-mile buffer of Greater Prairie- Chicken and Sharp-tailed Grouse leks and within a 4-mile buffer of Greater Sage- Grouse leks. a. Moreover, due to the fragile status of these Greater Sage-Grouse and Greater Prairie-Chicken in our state, we prefer developers to avoid any limiting habitat within these two species' ranges. In particular, we are concerned with developments in the remaining habitat patches that are >= 0.5 square miles, or where smaller patches accumulate to over 0.5 miles without barriers to movement between patches. Critical limiting habitat for Greater Sage-Grouse consists of grassland tracts with >5% Big Sagebrush (Artemesia tridentata). Critical limiting habitat for prairie chickens consists of tallgrass prairie.	The Project Area is outside of the species range for the Greater Prairie-Chicken and Greater Sage-Grouse in North Dakota. As discussed in the Tier 1 and Tier 2 study, the disturbed area for the Project consists primarily of cultivated cropland and as such is not likely to support nesting sharp-tailed grouse. There are no known Greater Prairie-Chickens, Greater Sage-Grouse, or Sharp-tailed Grouse leks within four miles of the Project Area.	✓
6	Avoid siting utility lines in nesting habitat within a 1-mile buffer of any prairie grouse lek.	There are no known Prairie Grouse leks within one mile of the Project Area. As discussed in the Tier 1 and Tier 2 study, the disturbed area for the Project consists primarily of cultivated cropland and as such is not likely to support nesting sharp-tailed grouse. All utility lines are being constructed underground.	✓
7	Restrict construction within the above buffer zones during the lekking and nesting seasons (March 15-July 15).	There are no known buffer zones that affect this Project.	✓
8	Place utility lines along existing roads as often as possible.	All utility lines are being constructed underground. To the extent possible, the lines run along existing infrastructure.	✓
9	Avoid siting turbines or other infrastructure within Bighorn Sheep habitat modeled and mapped by the Department.	There is no Bighorn Sheep habitat in the Project Area.	✓

10	Minimize, to the extent possible, placing turbines or associated infrastructure in areas that will have serious, detrimental impacts to flora or fauna listed under the Endangered Species Act.	The turbines and associated infrastructure are located entirely on previously disturbed areas. There are no known flora or fauna listed under the Endangered Species Act in the disturbed area.	✓
11	Utility lines that are constructed across wetlands should be marked to decrease bird strikes and mortality.	No utility lines are being constructed across wetlands.	✓
12	To reduce eagle and raptor mortality from electrocution, utility line construction should follow recommendations by the Avian Power Line Interaction Committee (www.aplic.org).	There are no new above-ground utility lines associated with this Project.	✓
13	The following table provides distance and seasonal restrictions, which if implemented, should assure that impacts to nesting raptors will be minimal. Development activities should not occur within the spatial buffer during the identified breeding period, which includes courtship and nest building, egg laying, fledgling, and through the post-fledgling dependency on the nest. (Table omitted here)	Based on the conclusions of the Tier 1 and 2 studies and data requests with appropriate agencies, the Project Area does not contain any of buffer zones detailed in the table.	✓
14	Minimize the number of permanent meteorological towers needed at the project site.	There is no permanent meteorological tower for this Project.	✓
15	Avoid impacts to the hydrological function of wetlands as often as possible and follow all applicable provisions of the Clean Water Act (33 USC 1251-1387) and the Rivers and Harbors Act (33 USC 301 et seq.).	The Project will have a SWPPP to control surface water flow and will fully comply with the Clean Water Act and the Rivers and Harbors Act. The Project is not expected to generate any sediment into streams or wetlands.	✓
16	Avoid siting turbines within Game and Fish owned and/or operated lands.	There are no Game and Fish owned or operated lands in the Project Area.	✓
17	Avoid sitting turbines on any Private Land Open To Sportsmen (PLOTS) land without prior consultation with the Department's private land section.	There are no PLOTS lands in the Project Area.	✓
18	Avoid any other state or federally owned wildlife or recreational lands (i.e. waterfowl production areas, national wildlife refuges, state parks, and national parks).	There are no state or federally owned wildlife or recreational lands in the Project Area.	✓

Table 5.14-2: Summary of Compliance with NDBMP

In addition, OE 31 is working with NREL to advance bat research related to community-scale wind projects. OE 31 will pay for and operate two thermal camera data collection systems at a site that NREL selects. These systems were designed by NREL to collect information about bat behavior around community wind projects. One Energy will support NREL in analyzing the data and publishing their findings. These systems will be deployed at operating community-scale wind projects owned by One Energy. This research will complement existing research being done by NREL for utility-scale projects. OE 31 will provide both USFWS and NDGF with the results of the studies when they are completed.

5.15 SUMMARY OF IMPACTS AND MITIGATION

Table 5.15-1 provides a summary of Project impacts and proposed mitigation.

TABLE 5.15-1: SUMMARY OF IMPACTS

RESOURCE	POTENTIAL IMPACT	PROPOSED MITIGATION	SECTION
Demographics	The Project will be socioeconomically beneficial to the Renewable Diesel Facility, local governments, and communities by providing economic benefits, taxes, and scholarships. No long-term changes to demographics are anticipated.	No mitigation is proposed.	5.1
Land Use, Ownership, and Management	The Project will convert approximately 6.7 acres of land in the Project Area into a renewable, alternative energy source for the life of the Project and would result in 20.6 acres of temporary impacts. The Project will also impact 2.8 acres of the existing Renewable Diesel Facility.	Areas of temporary disturbance will be made available for agricultural purposes following construction. Areas of disturbance to agriculture for the life of the Project will be minimal. Project infrastructure is located on previously disturbed land to minimize impacts of the Project.	5.2
Public Services	Construction of the Project will temporarily increase traffic on haul roads. One land mobile station owned by DPR was identified in the Project Area at the Renewable Diesel Facility. No impacts to AM, FM, or TV signals are expected.	OE 31 will utilize North Dakota One Call prior to construction to identify existing utilities. Roadways will be returned to pre-existing conditions unless otherwise requested by authorities during coordination. All applicable road permits will be obtained from the applicable authority. OE 31 will coordinate with DPR to minimize impacts to the land mobile station. No impacts to AM, FM, or TV signals are expected, but if they occur, they will be mitigated.	5.3
Human Health and Safety	No adverse impacts are anticipated.	Wind turbines adhere to required setback distances, collection lines will be buried to a depth of at least four feet outside of the immediate Renewable Diesel Facility, and the Project will meet applicable sound avoidance requirements.	5.4

		Minimal amounts of oil, hydraulic oil, and fuel will be located on-site and will be stored as required by law. DNHs were obtained for all turbines and FAA lighting will be installed in compliance with state and federal law.	
Sound	A sound assessment was completed, and sound levels are modeled below 45 decibels within 100 feet of inhabited residences and community buildings.	No mitigation is proposed.	5.5
Visual	The Project will have visual and potential aesthetic impacts. A detailed shadow flicker analysis was performed and indicated that the maximum modeled realistic shadow flicker at an inhabited residence is 12 hours/year.	Use of setbacks, uniformity of turbines, use of underground collection lines, minimum FAA lighting and marking requirements, and light mitigation required by ND law are anticipated to minimize visual impacts. OE 31 does not propose any mitigation for shadow flicker as all residences are well below 30 hours per year.	5.6
Cultural and Archaeological Resources	Identified cultural resources sites recommended for avoidance will be avoided; no historic properties will be affected.	A Class III Pedestrian Survey has been conducted and wind turbines, access roads, and associated facilities have been sited to avoid known/existing archaeological sites. If cultural resources are discovered during construction or operation, work shall immediately be stopped, the affected site secured, and the SHSND notified.	5.7
Recreational Resources	There are no designated recreation areas, public or private parks, or designated trails in the Project Area.	NA	5.8
Land Based Economies	Some agricultural land will be converted for the life of the Project and other agricultural land will be converted temporarily.	Areas of temporary disturbance will be made available for agricultural purposes following construction. Areas of disturbance to agriculture for	5.9

		the life of the Project will be minimal.	
Soils	During construction the soil surface may be more prone to wind and water erosion and soil compaction.	Erosion and sediment control measures will be utilized during and after construction in accordance with the Project's SWPPP.	5.10
Geological and Groundwater Resources	No adverse impacts anticipated.	No mitigation is proposed.	5.11
Surface Water and Floodplain Resources	No impacts to surface water are anticipated. Some areas of the collection line will be located in the 100-year floodplain. Two small sections of gravel access road will be located in the 100-year floodplain. One of these gravel access roads is being used to access a public road that is located in a floodplain (116th Ave.). The other small area of access road will be located in the floodplain to utilize an existing gate at the Renewable Diesel Facility and avoid unsafely routing traffic into an area with high vehicular and pedestrian traffic.	The Project will use BMPs such as silt fence, straw wattles, earth berms, and/or culverts to avoid impacts to surface water. Impacts to floodplains caused by the collection line will be temporary, limited to construction, and limited through construction practices. There is no reasonable alternative but to install the access road in the floodplain to access the public road in the floodplain. There is no reasonable alternative to routing the access road through the security gate to avoid creating an unsafe condition for vehicular and pedestrian traffic.	5.12
Wetlands	No wetlands will be impacted by the Project.	No mitigation is proposed.	5.12
Vegetation	The Project will result in temporary and permanent vegetation impacts.	Following construction, temporarily disturbed cropland will be returned to cropland. No impacts to vegetation other than cropland are anticipated. If impacts occur, those areas will be re-vegetated with a seed mixture consistent with the surrounding vegetation.	5.13
Wildlife - Mammals	The Project may impact potential habitat for ground dwelling mammals and increase potential for bat strikes with turbine blades.	To mitigate the Project's impacts to wildlife, OE 31 will implement and comply with all 45 of the BMPs contained in the USFWS WEG and NDBMP. Details of this implementation and	5.14

		compliance are set forth in Section 15.14.3.	
Wildlife - Avian Species	The Project may result in impacts to avian species through increasing the potential for bird strikes with the turbine blades.	To mitigate the Project's impacts to wildlife, OE 31 will implement and comply with all 45 of the BMPs contained in the USFWS WEG and NDBMP. Details of this implementation and compliance are set forth in Section 15.14.3.	5.14
Threatened and Endangered Species & State Species of Concern	Whooping cranes may occur in the Project Area and the Northern Long Eared Bat is unlikely to be present in the Project Area. Impacts to state species of concern would be similar to those for wildlife.	To mitigate the Project's impacts to wildlife, OE 31 will implement and comply with all 45 of the BMPs contained in the USFWS WEG and NDBMP. Details of this implementation and compliance are set forth in Section 15.14.3.	5.14

Table 5.15-1: Summary of Impacts

6.0 COMPLIANCE WITH NDCC SECTION 49-22-09 FACTORS

The Siting Act (see NDCC Section 49-22-09) lists the following factors to guide the PSC in assessing and designating the site for the proposed facility.

6.1 PUBLIC HEALTH AND WELFARE, NATURAL RESOURCES, AND THE ENVIRONMENT

The preceding sections and Appendices of this Application provide extensive research and investigations regarding the Project's potential impacts on public health and welfare, natural resources, and the environment. Those sections demonstrate the Project will have minimal negative impacts to natural resources and the environment due to a number of factors including: the relatively small Project size, the Project being situated in previously disturbed lands, the Project being on-site at an industrial facility, and the implementation of all 45 of the USFWS WEG BMPS and NDBMP as further outlined in Sections 5.14 and 5.15. The Project will also have significant positive economic benefits to the local community and State of North Dakota that will positively affect the public welfare.

6.2 TECHNOLOGIES TO MINIMIZE ADVERSE ENVIRONMENTAL EFFECTS

OE 31 has utilized or will utilize the most current technologies available to site, construct, and operate the Project to optimize energy production and minimize potential adverse environmental impacts. Examples of this include the utilization of LiDar technology as opposed to MET towers, the utilization of underground as opposed to overhead collection lines, and the utilization of wind turbines with no gearboxes. Further examples are identified within Section 5.0, Environmental Analysis.

6.3 POTENTIAL FOR BENEFICIAL USES OF WASTE ENERGY

Because wind energy does not create material amounts of waste energy, there would be no use of waste energy associated with this Project.

6.4 UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

Unavoidable adverse environmental effects of the Project are minimal and are described for each resource category in Section 5.0. The relatively small size of the Project, the siting of the Project on previously disturbed land, the siting of the Project on-site of an existing industrial facility, and the implementation of all 45 of the USFWS WEG BMPS and NDBMP as further outlined in Sections 5.14 and 5.15 all reduce the number of unavoidable adverse environmental effects of the Project.

6.5 ALTERNATIVES TO THE PROPOSED SITE

OE 31 analyzed various siting options for the Project. Selecting this land as the Project Area enables the Project's five wind turbines and associated infrastructure to be located on-site at the Renewable Diesel Facility, which minimizes environmental impacts and allows the Project to meet its intended purpose. OE 31 also selected the proposed Project Area based on wind resource assessment, site-specific studies, agency coordination, and avoidance of exclusion and avoidance areas. As sited, the Project has limited environmental and land use impacts and OE 31 believes the proposed site is the best location for the Project.

6.6 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF NATURAL RESOURCES

Renewable energy projects (such as the Project) cause relatively few irreversible and irretrievable commitments of natural resources. Natural resources will be used in the fabrication and preparation of Project and construction materials, such as concrete, steel, and aggregate, and the vehicles traveling to and from the site during construction will use fuel. While these materials may not be retrievable after use, their use in this Project will not have an adverse effect on the availability of these resources. The anticipated benefits of the Project will balance the irretrievable commitment of resources for the Project.

6.7 DIRECT AND INDIRECT ECONOMIC IMPACTS

The Project will provide extensive economic benefits. It will provide economic benefits to local governments and communities through taxes and scholarships. Over twenty years, the Project would generate a total of $940,000 in taxes and $500,000 in STEM scholarships. The Project will also directly support the Renewable Diesel Facility, which is a significant employer in community and the purchaser of a significant amount of agricultural products. Development and construction of the Project will also provide increase demand for food services, lodging, fuel, and general supplies. Personal income could also be generated by circulation and recirculation of dollars paid out by the Project as business expenditures.

6.8 EXISTING DEVELOPMENT PLANS OF THE STATE, LOCAL GOVERNMENT AND PRIVATE ENTITIES AT OR IN THE VICINITY OF THE SITE

The Project does not conflict with existing development plans of state, local, or private entities within the Project Area. The Project is only located on land owned by DPR and coordination with DPR has taken place to avoid conflicts with DPR's development plans. The Project will comply with applicable provisions of the Stark County Zoning Ordinance.

6.9 EFFECT OF SITE ON CULTURAL RESOURCES

The Project will be sited to avoid archaeological sites, traditional cultural properties, and historic resources. If additional cultural resources are discovered, OE 31 will work with SHSND to avoid or mitigate impacts. See Section 5.7 for further discussion of cultural resource survey efforts and SHSND consultation.

6.10 EFFECT OF SITE ON BIOLOGICAL RESOURCES

OE 31 has made significant efforts to avoid or minimize impacts to biological resources, including wildlife, through Project development and will continue to do so throughout construction and operation of the Project. This includes through practices such as complying with all BMPs of NDGF and USFWS regarding the development of wind energy, burying collection lines underground, placing the Project in previously disturbed land, not removing trees, not impacting any wetlands, and other practices outlined in Section 5.

6.11 AGENCY COMMENTS

A summary of agency correspondence and collaboration to date is provided in this section below. Copies of substantive agency correspondence are provided in Appendix E.

6.11.1 Federal Aviation Administration (FAA)

OE 31 has been in communication with the FAA since May 2021 to provide information regarding the Project and obtain DNHs for each of the turbine locations for the Project. The DNHs were obtained for the Project in August and September 2021 and are included in Appendix E.

6.11.2 U.S. Department of Defense (DoD) Military Aviation and Installation Assurance Siting Clearinghouse

In April 2021, OE 31 requested an informal review of the Project through the DoD Siting Clearinghouse. OE 31 submitted the requested documents that described the turbine locations, turbine dimensions, and area where the Project would be located. On June 4, 2021, OE 31 received a Review Response Letter from the Military Aviation and Installation Assurance Siting Clearing House. The letter stated the Project as proposed would have minimal impact on military operations conducted in the area and is included in Appendix E.

6.11.3 Wildlife Agencies (U.S. Fish and Wildlife Service, North Dakota Field Office and North Dakota Game and Fish)

OE 31 began coordinating with wildlife agencies in May 2021. Correspondence, information requests, and reviews with USFWS and NDGF have helped to identify survey needs for the Project, determine the scope of potential environmental impact for the Project, and identify mitigative steps. A summary of this correspondence and exchanges are found below.

NDGF

July 2021 NDGF Communications

OE 31 called NDGF to introduce the Project, discuss the way the department would view a project that is community scale or a distributed wind project, confirm that this was the first project of this type in North Dakota, and ask what the coordination process going forward would be. NDGF followed up with contact information and attached a link to North Dakotas BMPs. OE 31 sent NDGF a KMZ file along with the description of the Project and asked for any information on known species (bald eagles, golden eagles, raptors, etc.) of concern in the area. OE 31 also informed NDGF that OE 31 would give NDGF notice when the Tier 1 and 2 studies for the Project were complete.

August 2, 201 NDGF Communication

NDGF emailed OE 31 the Department's early guidance letter for the Project. The letter stated that the Department was encouraged by the Project being located on already disturbed land and not impacting native prairie. The letter also noted that the Project fell inside the State Wildlife Action Plan Priority Area and High Impact to Native Wildlife and Habitat area and provided recommendations regarding bat and bald eagle/raptor nest studies. The letter is included in Appendix E.

Additional August 2021 NDGF Communications

NDGF emailed OE 31 and stated they do not know of bald eagle nests in the area but do know of a golden eagle nest that is approximately 3.5 miles outside of the Project boundary. OE 31 requested more detailed information on high impact areas and the eagle nest locations. After securing the necessary agreement to obtain the information, NDGF sent OE 31 an email with Key Native Wildlife and Habitat Areas along with the confidential location of a golden eagle nest more than three miles away from the area of the Project.

September 2021 NDGF Communications

OE 31 sent the completed Tier 1 and 2 Studies for the Project along with additional materials to NDGF and requested that NDGF review the documents and contact OE 31 with follow-up.

October 2021 NDGF Communications

OE 31 had a call with NDGF on October 27, 2021 to discuss NDGF's feedback after receiving the completed Tier 1 and 2 Studies for the Project. In the call, NDGF stated it had a discussion with USFWS and the letter NDGF will provide to the PSC in advance of the PSC hearing will generally align with the USFWS letter. NDGF also stated that it would issue a letter to the same effect sometime in mid-November so that it could be provided to local officials in the local zoning process. A letter was provided by NDGF to OE 31 on November 9, 2021 and is included in Appendix E.

USFWS

May 2021 USFWS Communications

A call was held between OE 31 and USFWS regarding general background and information on the Project. OE 31 followed up by emailing a KMZ file for the turbine locations and general Project information. A follow-up call took place to further discuss the Project.

June 2021-August 2021 USFWS Communications

Additional calls were held between OE 31 and USFWS to discuss the Project and how the Land-Based WEGs applied to community-scale wind energy projects.

After receiving information from NDGF regarding the location of bald eagle and golden eagle nests in the area, OE 31 emailed USFWS asking if it had any additional information that NDGF did not have. USFWS responded that it did not believe it had any additional information regarding species in the area.

September 2021 USFWS Communications

OE 31 sent the completed Tier 1 and 2 studies for the Project along with additional materials to USFWS and requested that USFWS review the documents and contact OE 31 with follow-up.

October 2021 USFWS Communications

OE 31 had a call with USFWS to discuss the Tier 1 and 2 studies performed for the Project and to provide an update with status. OE 31 and USFWS also discussed whether USFWS would provide a letter as part of its review of the studies undertaken and the approach taken. USFWS responded that it would provide a letter and did not expect any issues given the approach taken, implementation of all North Dakota and USFWS BMPs, and research that is being done with NREL. A letter was provided by USFWS to OE 31 on October 26, 2021 and is included in Appendix E.

6.11.4 North Dakota Parks & Recreation

OE 31 had a call with Parks and Recreation regarding the Project and ND Natural Heritage Inventory requests. OE 31 then sent KMZ files and drawings of the Project, informed Parks and Recreation that OE 31 was going to have Tier 1 and 2 studies completed for the Project, and requested an environmental review for the Project. Parks and Recreation responded with an environmental review response letter on July 27, 2021. The letter can be found in Appendix E.

6.11.5 State Historical Society of North Dakota

SWCA, who was contracted by OE 31 to conduct cultural resource studies for the Project, has coordinated with the SHSND on the Project since June 2021. SWCA confirmed that OE 31 should conduct a Class I Literature Review and a Class III Intensive Cultural Resources Pedestrian Survey of all areas that may be affected by the Project, as per standard SHSND guidelines. The SHSND recommended that the APE for the Class III Pedestrian Survey be defined as any ground surface area that has the potential to be disturbed by any construction or installed activities associated with the Project. Additionally, the SHSND recommended a visual impacts assessment within a 2-mile visual APE of the Project, as per their standard guidelines. The visual impacts assessment included documentation within the 2-mile visual APE of all buildings, structures, and objects 45 years of age or older at the time of survey. The Project has been designed to avoid impacts to cultural and architectural resources. SHSND's concurrence with the determination of "No Historic Properties Affected" for the Class I Literature Review and for the Class III Intensive Cultural Resources Pedestrian Survey and "No Adverse Effect" determination for the Class II visual impact assessment can be found in Appendix E.

6.11.6 Stark County

OE 31 initiated communication with Stark County in May 2021 and communication with the County has been ongoing since. OE 31 has been communicating with the Stark County Planning and Zoning Director and County Commissioners on the zoning requirements in the County, the procedural aspects of obtaining a conditional use permit, and any information requests from the Zoning Director. OE 31 filed a conditional use application and rezoning request associated with the Project in July 2021.

In September 2021, the Planning and Zoning Commission conducted a public hearing on the rezoning request (separate from the conditional use permit application). Following the public hearing, the Planning and Zoning Commission recommended denial of the rezoning request, indicating it wanted additional environmental information. OE 31 then withdrew the rezoning request and requested the hearing date for the conditional use application be postponed to allow OE 31 time to obtain information requested by the Planning and Zoning Commission. The hearing date is not yet officially set for the conditional use permit application and the rezoning request, but OE 31 has asked that they be considered concurrently at the January 27, 2022 Planning and Zoning Commission meeting. OE 31 will continue to communicate with Stark County throughout the development, construction, and operation of the Project.

6.11.7 Stark County Emergency Services

OE 31 has had calls and meetings with the Director of Emergency Services in Stark County to explain the Project and to discuss the safety and emergency trainings, programs, licenses, and certifications of One Energy Solutions LLC. OE 31 also discussed emergency planning for the Project and the training One Energy Solutions LLC would offer to local emergency responders. OE 31 will continue to communicate with Stark County Emergency Services throughout the development, construction, and operation of the Project.

6.11.8 Stark County Airport Authority

OE 31 has been communicating with the Dickinson Theodore Roosevelt Regional Airport since July 2021. In July 2021, OE 31 had a phone call with Kelly Braun, the Airport Manager to discuss the Project and inform him that a Notice of Proposed Construction (7460-1) was filed with the FAA for five wind turbines on May 10, 2021. On August 18, 2021, OE 31 emailed Mr. Braun to let him know that the five turbines received DNHs from the FAA. On August 31, 2021, OE 31 emailed Mr. Braun to let him know two of the turbine locations needed to be resubmitted to the FAA due to micro-siting. Mr. Braun acknowledged the receipt of the information. In September 2021, OE 31 informed Mr. Braun that the two micro-sited turbines had received DNHs from the FAA. OE 31 will continue to keep the Airport updated on the status of the FAA process and Project throughout development, construction, and operation of the Project.

6.11.9 Public Participation

OE 31 and MPC have actively participated in the community since the announcement of the Project in May 2021. OE 31 and MPC have hosted numerous meetings with the community, residents, and public officials and have held an open house. OE 31 and MPC also sent materials explaining the Project to all residences within two miles of the Renewable Diesel Facility and ran educational social media ads that made 40,000 impressions (impressions are the number of times an ad is visible on a screen). OE 31 and MPC will continue to participate in the community throughout development, construction, and operation of the Project.

7.0 POTENTIAL GOVERNMENT PERMITS AND APPROVALS

The potential government permits or approvals that may be required for the construction and operation of the Project are shown in Table 7.0-1. Copies of agency correspondence to date are provided in Appendix E.

TABLE 7.0-1: POTENTIAL GOVERNMENT PERMITS AND APPROVALS

ADMINISTERING AGENCY	PERMIT, APPROVAL, OR CONSULTATION	APPLICABILITY TO THE PROJECT	STATUS
FEDERAL			
U.S. Army Corps of Engineers	Section 10 Permit (Rivers and Harbors Act of 1899) (Nationwide Permit 51(wind) (or other approved permit i.e. Permit 57(utilities)))	Boring under navigable waters.	To be obtained prior to construction.
Environmental Protection Agency	Spill Prevention Control and Countermeasure Plan	Required if any facility associated with the Project has oil storage of more than 1,320 gallons.	To be prepared prior to construction, if necessary.
Federal Communications Commission (FCC)	Radio Station Authorization/License	May be required for operation of communications tower associated with ADLS or other approved system.	If needed, prior to operation of ADLS communications tower or other approved system.
Federal Energy Regulatory Commission	QF Self-Certification via FERC Form 556		To be filed at least 90 days prior to operation of the Project.
Federal Aviation Administration	Form 7460-1 Notice of Proposed Construction or Alteration (Determination of No Hazard)	Construction or alteration of structures standing higher than 200 feet above ground level.	Determinations of No Hazard to Air Navigation obtained on 8/2/2021 and 9/21/2021.
	Notice of Actual Construction or Alteration (Form 7460-2)	Supplemental notice required either 10 days before construction start or within five days of reaching maximum height.	To be provided after structures reach maximum height as required.
	Marking & Lighting Recommendations	Required for approval of ADLS.	7460-1 filing will include standard red/white synchronized lights but the FAA filings will be modified to request approval of ADLS or other approved technology prior to construction.

STATE OF NORTH DAKOTA APPROVALS			
North Dakota Public Service Commission	Certificate of Site Compatibility	Construction of energy conversion facility with greater than 0.5 MW nameplate capacity.	In progress.
North Dakota State Water Commission	Sovereign Land Permit	Required for construction activities that impact an island or bed of a navigable waterway or stream (e.g., boring under a state-navigable waterway).	To be obtained prior to activities that would impact the area(s) subject to permit, if necessary.
North Dakota Department of Environmental Quality	North Dakota Pollutant Discharge Elimination System (NDPDES) General Permit for Stormwater Discharge Related to Construction (includes Storm Water Pollution Prevention Plan and Notice of Intent submission)	For stormwater discharges from construction activities with disturbances greater than one acre.	To be obtained prior to construction activities for which the permit is required, if necessary.
North Dakota Highway Patrol	Oversize/ Overweight Permit	Required to transport oversize/overweight loads on state-maintained roads.	To be obtained prior to transport of oversize/overweight loads.
North Dakota State Historic Preservation Office (SHPO)/State Historical Society of North Dakota (SHSND)	Cultural and Historic Resources Review and Review of State and National Register of Historic Sites and Archeological Survey	Consultation required in connection with other agency permitting requirements, such as the PSC.	Class I, II, and III survey work and reporting for the Project is complete. Concurrence from SHSND received 9/15/2021.
LOCAL APPROVALS			
Stark County	Conditional use permit	Required for wind energy generation in an industrial district.	Filed July 2021.
	Building application	Required for locating a structure in the county.	To be obtained prior to construction.
	Right-of-Way Approach Permit	Installation of approach roads.	To be obtained prior to installation of approaches, as needed.
	Road Crossing/Right-of-Way Encroachment/Utility Permit	Installation/maintenance of facilities on, across, or adjacent to county right-of-way.	To be obtained prior to construction work in roadway ROW, if necessary.

	Road haul/use permits	Using local roadways for haul roads.	To be obtained as necessary prior to use of haul roads.

Table 6.11-1: Potential Government Permits and Approvals

8.0 QUALIFICATIONS OF CONTRIBUTORS TO SITING STUDIES

The qualifications of contributors to the Application are shown in Table 8.0-1.

TABLE 8.0-1: QUALIFICATIONS OF CONTRIBUTORS TO SITING STUDY

NAME AND PROJECT ROLE	EDUCATION AND PROFESSIONAL EXPERIENCE
Jereme Kent CEO and General Manager One Energy Enterprises LLC.	Jereme Kent is the CEO and General Manager at One Energy. Prior to founding One Energy in 2009, Jereme ran construction of several of the world's largest wind projects for utility-scale construction firms including RMT, M.A. Mortensen, and D.H. Blattner, and has overseen more than half a billion dollars in wind turbine construction projects. Jereme developed several safety, quality, and production methods that are considered standard within the utility-scale wind industry. He also pioneered the concept of just-in-time construction for utility-scale wind turbine projects. Jereme studied Civil Engineering at the University of Michigan's College of Engineering. Jereme is a Certified Tower Rescue Instructor, Advanced EMT, Crane Operator, Crane and Rigging Inspector, and Principal Inventor on multiple United States patents.
Katie Treadway SVP, Head of Regulatory Affairs One Energy Enterprises LLC.	Katie Treadway is the SVP and Head of Regulatory Affairs at One Energy. Katie leads One Energy's regulatory compliance and government affairs efforts at both the state and national levels. Katie is a former Assistant Attorney General for the Office of the Ohio Attorney General and represented the Public Utilities Commission of Ohio and the Ohio Power Siting Board. Katie received her Bachelor of Science degree in Economics from Otterbein University and her Juris Doctor from Vermont Law School.
Jessica Grosso SVP, Head of Project Planning and Technology One Energy Enterprises LLC.	Jessica Grosso is the SVP and Head of Project Planning and Technology at One Energy. Jessica is One Energy's wind project development and feasibility expert. She developed the algorithms, methods, and processes used to take *Wind for Industry*® projects from first conception through the project groundbreaking. This includes remote sensing data campaigns and One Energy's proprietary software for site-specific feasibility studies including shadow flicker, sound propagation, icing, and a Monte Carlo statistical energy production analysis. Jessica's team has become the leading developer of on-site wind energy in the country. Jessica earned her Bachelor of Science in Engineering: Earth Systems Science and Engineering, with a Climate Physics Concentration, and her Master of Science in Atmospheric Science from the University of Michigan. She is a member of the American Meteorological Society and runs One Energy's weather risk team.
Chelsea Bumb SVP, Head of Construction	Chelsea Bumb is the SVP and Head of Construction at One Energy. She is a Licensed Professional Engineer who is responsible for all of One Energy's construction projects and self-perform construction team. Chelsea built One Energy's self-perform team and has pioneered One

One Energy Enterprises LLC.	Energy's systematic approach to project engineering and construction. Chelsea has built more than 30 MW of on-site wind generation facilities, including three of the largest behind-the-meter wind projects in the country. Chelsea earned her Bachelor of Science in Civil Engineering from The Ohio State University. She is a Certified EMT, Tower Rescue Instructor, Crane Operator and is co-author of a United States patent.
Carly Good Senior Analyst One Energy Enterprises LLC.	Carly Good is a Senior Analyst at One Energy. Carly is a technical lead for the development of One Energy's *Wind for Industry®* projects. Carly is responsible for ensuring projects are sited responsibly and in accordance with all applicable standards and laws. Carly also conducts site feasibility studies for projects. Carly earned her Bachelor of Science in Environment, Economy, Development, and Sustainability from The Ohio State University.
Claire Hanrahan Field Engineer One Energy Enterprises LLC.	Claire Hanrahan is a Field Engineer at One Energy. Claire is an Engineer in Training. She currently leads One Energy's GIS Operations. Claire earned her Bachelor of Science in Agricultural and Biological Engineering at the University of Illinois at Urbana-Champaign.
Mollie Smith Attorney at Law Fredrikson & Byron, P.A.	Mollie Smith assists clients with wind farm, transmission line, and pipeline permitting matters in North Dakota, South Dakota, and Minnesota. At the state level, Mollie represents clients in certificate of corridor compatibility, route permit, certificate of site compatibility and rulemaking proceedings before the North Dakota Public Service Commission; energy facility permit proceedings before the South Dakota Public Utilities Commission; and certificate of need, route permit and site permit proceedings before the Minnesota Public Utilities Commission. At the local level, Mollie advises and assists clients with a variety of permitting-related matters, including obtaining conditional use/special exception permits, variances and subdivision approvals, and participating in zoning ordinance amendment processes. Mollie has a Bachelor of Arts in English from Northern State University, Aberdeen, SD; a Master of Arts in Literature from Colorado State University, Fort Collins, CO; and a Juris Doctor from the University of Minnesota Law School, Minneapolis, MN.
Bridget Duffus Attorney at Law Fredrikson & Byron, P.A.	Bridget Duffus assists clients with wind farm, solar farm, transmission line, and pipeline permitting matters in North Dakota and Minnesota. At the state level, Bridget represents clients in certificate of corridor compatibility, route permit, and certificate of site compatibility proceedings before the North Dakota Public Service Commission; and certificate of need, route permit and site permit proceedings before the Minnesota Public Utilities Commission. At the local level, Bridget advises and assists clients with a variety of permitting-related matters, including obtaining conditional use permits and variances. Bridget has a B.A. in Psychology from the University of St. Thomas, St. Paul, MN; and a J.D. from the University of St. Thomas School of Law, Minneapolis, MN.
Griffin Bachhuber, B.S. Natural Resources Project Manager	Griffin Bachhuber is a biologist and project manager in SWCA's Bismarck, North Dakota, office and has completed projects in power generation, transmission, oil and gas, Department of Transportation, and residential and commercial land development throughout the Midwest, central, and western United States. His work has been heavily focused on all facets of pre-construction renewable energy

	development in the wind and solar industries including natural resources reporting, permitting, wetland delineation, ecological and threatened and endangered species assessments, and due diligence. As part of his work in renewable energy development, he has supported Public Utilities Commission/Public Service Commission site permit applications for large-scale wind farms in Minnesota, North Dakota, South Dakota, and Iowa.
Cole Reagan, M.S. Wetland and Vegetation Specialist	Cole Reagan is a wetland specialist for SWCA's Bismarck, North Dakota, office. He frequently performs environmental work in western North Dakota. He is experienced conducting wetland delineations in accordance with the U.S. Army Corps of Engineers' 1987 manual and the Great Plains regional supplement. He is also skilled at identifying ordinary high-water marks for problematic, ephemeral, and intermittent streams within the arid West. He has prepared several functional assessments for wetlands and streams within Wisconsin, the George Washington National Forest, and the Monongahela National Forest. Additional experience includes graduate work developing models to predict nutrient flow and storage within wetland soils, treatment of wetland vegetation, and peatlands, and developing lake chemistry and stream discharge sampling plans; conducting on-site environmental inspections of drainage systems to ensure compliance with stormwater pollution prevention plans (SWPPPs), spill prevention, control, and countermeasures (SPCC) plans, and state and local environmental regulations; and identifying native, invasive, rare, and endangered plant species within wetland territories.
Andrea Hannan, B.S. Biologist	Andrea Hannan is a biologist in SWCA's Bismarck office. She has conducted wildlife and botanical surveys across the Intermountain West. She has collected biological field data for various wildlife species, including burrowing owl, mountain plover, pygmy rabbit, and white-tailed prairie dog; collected raptor flight pattern data and conducted raptor nest surveys; conducted threatened, endangered, and sensitive (TES) plant surveys, including surveys for Ute ladies'-tresses (Spiranthes diluvialis), Wheeler's angelica (Angelica wheelerii), and Clay phacelia (Phacelia argillaceae); and conducted habitat assessments and fire and rangeland monitoring. She has additional experience in invasive and noxious weed mapping.
Michael Retter, M.A., RPA Principal Investigator and Project Manager	Michael Retter is a principal investigator and project manager. He is responsible for all aspects of project completion and leads teams through all project components, including research design, performance, results analysis, final reporting, and project oversight and review. Mr. Retter has more than 21 years of experience reviewing and managing National Historic Preservation Act (NHPA) Section 106 and National Environmental Policy Act (NEPA) projects in Arizona, California, Colorado, Indiana, Kansas, Minnesota, Missouri, Montana, Nebraska, New Hampshire, New Mexico, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Dakota, Texas, Utah, Washington, West Virginia, and Wyoming, as well as Ontario Heritage Act–compliance projects in Ontario, Canada. He conducts full-spectrum projects on the cultural environment through application of his expertise in anthropology, archaeology, historic archaeology, tribal consultation, and cultural landscapes, particularly for NHPA Section 106 and Section 110 compliance. He also works with diverse teams on multi-disciplinary projects, including those with NEPA requirements.

Jolene Schleicher, B.SC. Cultural Resources Project Manager	Jolene Schleicher is an archaeologist and project manager in SWCA's Bismarck, North Dakota office. As a project manager and assistant project manager, she is responsible for coordination of all project tasks, including fieldwork and report writing for multiple projects. As an archaeologist, she leads cultural resource survey and site recording projects, and prepares cultural resource reports. Ms. Schleicher has more than 12 years of professional environmental consulting experience. Ms. Schleicher has served as a project manager, assistant project manager, field lead, and crew member for a number of projects, including dozens in North Dakota and Montana. Additional responsibilities include GPS/GIS data collection and interpretation and conducting cultural resource monitoring for construction projects.
Hannah Curry, M.S. Historic Preservation Specialist/Architectural Historian	Hannah Curry is a Secretary of the Interior's qualified historic preservation professional/architectural historian and serves as an architectural history project manager for SWCA's Central/East Region. She has experience in cultural resources surveys and inventories of historic buildings and structures, National Register of Historic Places (NRHP) evaluations and nominations, and the development of historic contexts. Ms. Curry has successfully completed over 10 NRHP nominations as multiple state and local landmark applications. She is also skilled in regulatory compliance under Section 106 of the National Historic Preservation Act, the Antiquities Code of Texas, and local preservation ordinances, ensuring client compliance under federal, state, and/or local law. Ms. Curry is the regional expert on state and federal historic preservation tax credits and the application of the Secretary of the Interior's Standards for the Treatment of Historic Properties.
Laci Paul, M.A. Archaeological Field Director	Laci Paul is an archaeologist in SWCA's Bismarck office and has worked as a field director, crew chief, and technician on crews throughout North Dakota, South Dakota, Nebraska, Texas and New Mexico. Her responsibilities as an archaeologist with SWCA include all aspects of logistics, inventory, evaluative testing, mapping, artifact analysis, site forms, and report writing. As a cultural resource specialist, Ms. Paul has expertise in National Historic Preservation Act (NHPA) – Section 106 actions and compliance and Secretary of Interior's Guidelines. Ms. Paul specializes in prehistoric archaeology and the Native American Graves Protection and Repatriation Act (NAGPRA).

Table 6.11-1: Qualifications of Contributors to Siting Study

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