Application to the North Dakota Public Service Commission for a Certificate of Site Compatibility to Construct the Clean Energy #1 Wind Project

Case # PU-11-662

By
ALLETE Clean Energy

January 2012

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SMART. POWERFUL. AHEAD.

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1.0 Introduction

ALLETE Clean Energy (ACE), a wholly owned subsidiary of ALLETE, Inc., submits this application for a Certificate of Site Compatibility (Certificate) to the North Dakota Public Service Commission (PSC) to construct the Clean Energy #1 Wind Project (the Project). Launched on July 28, 2011, ACE plans to develop and acquire capital projects for electric utilities, cooperatives, municipalities, independent power marketers and large end users. ACE expects to grow with the trend toward sustainable power and the resulting state renewable energy standards, as well as the likely more stringent environmental standards at the federal level.

The preliminary Project boundary encompasses approximately 12,000 acres in Morton and Mercer counties, North Dakota (Exhibit 1). The Project, when completed, will generate up to 100 megawatts (MW) of electricity, and will use up to 50 wind turbine generators depending on the turbine selected. Associated permanent facilities include access roads, an electrical collection system and one meteorological tower.

At the time of this application, ACE has not entered into a contract to purchase and use a specific make, model, and size of wind turbine. However, ACE is committed to developing this project at this site and is seeking authorization from the NDPSC to proceed in a way that provides the maximum amount of flexibility in developing a competitive project based on costs, customer needs, and economic considerations. As a result, this application assumes the greatest number of turbine locations, project area, and resulting impacts based on the worst case turbine characteristics (i.e. greatest hub height, largest rotor diameter, loudest turbine, etc.). In this way, ACE will assure compliance with NDPSC regulatory requirements for any turbine selected and the associated layout because all possible project scenarios are included in this worst case project description.

In general, ACE will use larger turbine sizes when possible as a way to reduce the total project acres of impact. For this project, ACE is not considering any turbines with less than 2 MW capacity. Therefore, this application assumes the maximum 50 wind turbine locations and associated access roads, crane paths, and collector lines. The actual turbine size, height and rotor diameter could change depending on the turbine that is selected.

If a turbine with a capacity over 2 MW is selected, fewer turbines will be needed to supply the up to 100 MW of electricity. In addition to decreasing the number of turbines, the turbine change would also decrease the number of associated access roads. As a result, if the turbine size does increase, the project footprint, affected project acres and impacts from an environmental standpoint, will be reduced.

Likewise, the impact calculations provided in this application are based not only on the maximum number of turbines that could be used but also the *maximum* potential hub height, the *maximum* rotor diameter, and other maximum turbine characteristics. These numbers will most likely decrease as the project develops.

At the request of ACE and at ACE's expense, Minnesota Power (MP), ALLETE Inc.'s Duluth based regulated electric utility, is also in the process of planning and permitting a new substation in Mercer County and an extension of its existing 230 kV transmission line from Morton County, through Oliver County to the new substation in Mercer County. The approximately 11-mile transmission line extension and associated substation, to be owned and operated by MP, will act as a generator outlet for new wind projects in the area, including the ACE Clean Energy #1 Project. The transmission line extension and new substation are planned for construction as early as spring, 2012 and completion in fall, 2012 and as such will be available for use by the Project when commissioned by December 31, 201. This schedule for the Project and transmission upgrade, however, are contingent on obtaining all necessary approvals from the PSC and local governments along with ACE finding a counterparty.

The Project will use MP's proposed 11-mile 230 kV transmission line extension and MP's existing Bison to Square Butte 84 Line transmission line to interconnect at the Square Butte 230 kV substation. Energy generated by the Project will be transmitted via MP's existing 250 kV DC Line and the existing AC transmission system for sale to ACE customers.

ACE has retained Barr Engineering Co. (Barr) to assist with environmental review, permitting, and preliminary engineering for the Project. ACE anticipates receiving a Certificate from the PSC in April 2012, so that it may begin construction as early as spring, 2012 and begin operation in December, 2012.

1.1 Compliance with the Energy Conversion and Transmission Facility Siting Act Chapter 49-22

This application for a Certificate has been prepared in accordance with the North Dakota Energy Conversion and Transmission Facility Siting Act (the Act) and meets the criteria set forth in North Dakota Century Code (NDCC) 49-22. The Act states that the siting of an energy conversion facility is to be made in an orderly manner compatible with environmental preservation and the efficient use of resources (NDCC 49-22-02).

ACE has considered exclusion areas, avoidance areas, selection criteria, and policy criteria as described in Article 69-06 of the North Dakota Administrative Code (NDAC) in the design of the Project. In addition, sufficient project design, wind resource, and technical information have been provided for a thorough evaluation of the reasonableness of the proposed site.

Table 1-1 outlines the information necessary to fulfill the requirements for a Certificate with the PSC and notes where these requirements are addressed in this document.

In addition to the Certificate, ACE will also secure other permits and approvals as required, including a Special Use Permit from Morton County and a Conditional Use Permit from Mercer County.

Table 1-1 Certificate Completion Checklist

State Authority	Description	Section
Chapter 49-22	PSC Guidelines: Energy Conversion and Transmission Facility Siting	1.1
Section A	Description	1.2, 1.3, 1.3.3, 1.5, 4.3, 6.0-6.6, 9.0
1.	Type: Describe the type of energy conversion facility proposed and provide a diagram of the major process system or a flow diagram.	1.0, 4.1
2.	Product: Describe in general terms and technical terms the products to be produced by the proposed facility.	1.3.4, 6.1, 6.3
3.	Size and Design: Provide the following description of the production capacity and design	1.3.4, 4.1, 4.2, 4.3, 6.0
a.	Gross design capacity	1.3.4
b.	Net design capacity	1.3.4
c.	Estimated thermal efficiency of the energy conversion process and the assumptions upon which the estimate is based	N/A
d.	The number of acres that the proposed facility will occupy	1.3.3, 4.1, 4.2, 5.1
e.	One (1) copy of all design data reports separate from the application	Separate Cover
4.	Time Schedule: Provide the anticipated time schedule for the accomplishment of the following	1.4
a.	Certificate of Site Compatibility	1.4
b.	Land acquisition complete	1.4
c.	Construction start date	1.4
d.	Construction complete	1.4
e.	Test operations	1.4
f.	Commercial production date	1.4
g.	100 percent capacity factor	1.4
h.	Any expansion or additions	1.4
Section B	Studies	Appendix A
	Provide a copy of any evaluative studies or assessments of the environmental impact of the proposed facility submitted to any federal, regional, state or local agency	Appendix A
Section C	Need for Facility	2.0
1.	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	2.1
2.	A description of any feasible alternative methods of serving the need	2.2
3.	A statement justifying any deviations from the most recent Ten-Year Plan which the proposed facility may present	2.3
Section D	Location	1.3.3
1.	Select a study area, which includes the proposed facility site, of sufficient size to enable the PSC to evaluate the factors addressed in Section 49-22-09, NDCC	1.3.1, 1.3.2, 10.0-10.11, Exhibits 1, 2

State Authority	Description	Section
		and 3
2.	Discuss the utility's policies and commitments to limit the environmental impact of its facilities, including copies of board resolutions and management directives	1.0
3.	Identify and map the criteria that led to the proposed facility location within the study area	Exhibits 1 and 4, 1.3.3, 3.0
4.	Discuss in detail the relative value of each criteria and how the proposed facility location was selected giving consideration to all criteria	3.0
5.	The criteria to be evaluated shall include at a minimum all of the following which are within the study area	3.0
a.	Exclusion areas	3.1, Exhibits 4, 6 and 8
b.	Avoidance areas	3.2, Exhibits 4 and 10
c.	Selection criteria	3.3
d.	Policy criteria	3.4
e.	Design and construction limitations	3.5
f.	Economic considerations	3.6
6.	Discuss the mitigative measures that will be taken to minimize adverse impacts which result from the location, construction, and operation of the proposed facility	7.2.3, 7.3.3, 7.4.3, 7.5.3, 7.6.3, 7.7.3, 7.8.3, 7.9.3, 7.10.3, 7.11.3, 7.12.3, 7.13.3, 7.14.3, 7.15.3, 7.16.3, 7.17.3, 7.18
7.	List the qualifications of the people in the various disciplines that contributed to the facility site location study	11.0
8.	Maps	Exhibits
a.	Map the criteria within the study area showing the proposed facility location. Several different criteria may be shown on each map, depending on the map scale and the density and nature of the criteria. Minimum map scale shall be 0.5 inch = 1 mile. All maps shall be at the same scale unless otherwise specified.	Exhibits
b.	Furnish one Mylar map, separate from the application, of the same scale as the criteria maps and showing the same basic features as the criteria maps, including the study area, but not the proposed facility location	Exhibits (PSC Staff supports not providing a Mylar map)
NDCC 49-22-09	Factors to be considered in evaluating applications and designation of sites, corridors, and routes	10.0
1.	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	10.1
2.	The effects of new energy conversion and transmission technologies and systems designed to minimize adverse environmental effects	10.2

State Authority	Description	Section
3.	The potential for beneficial uses of waste energy from a proposed energy conversion facility	10.3
4.	Adverse direct and indirect environmental effects which cannot be avoided should the proposed site or route be designated	10.4
5.	Alternatives to the proposed site, corridor or route which are developed during the hearing process and which minimize adverse effects	10.5
6.	Irreversible and irretrievable commitments of natural resources should the proposed site, corridor, or route be designated	10.6
7.	The direct and indirect economic impacts of the proposed facility	10.7
8.	Existing plans of the state, local government, and private entities for other developments on or in the vicinity of the proposed site, corridor, or route	10.8
9.	The effect of the proposed site or route on existing scenic areas, historic sites and structures, and paleontological or archaeological sites	10.9
10.	The effect of the proposed site or route on areas which are unique because of biological wealth or because they are habitats for rare and endangered species	10.10
11.	Problems raised by federal agencies, other state agencies, and local entities	10.11

1.2 Flexibility in Siting

To develop a project that is both economically and technically feasible, wind energy project owners follow a step-wise siting process that weighs alternatives – both at the level of general location and specific layout. Included below are the siting criteria used in identifying general project locations. Each of these criteria needs to be satisfied for a project to be economically and technically feasible and practical.

- **High Quality Wind Resource.** Given current turbine technologies, the siting of large-scale wind energy facilities is constrained by the need for a location with sufficient wind speeds on a regular basis throughout the year. The lack of a suitable wind resource could lead to operational problems, a lower return on investment, and higher energy costs for electric customers.
- **Available Land.** Land must be available for a large-scale wind energy project. Land owners and/or administrators must be willing to negotiate lease agreements or otherwise allow the use of the land for wind turbines and associated facilities. Existing land uses must not conflict with wind energy facilities.
- **Suitable Transmission.** Large-scale wind energy facilities must be located within a reasonable distance of an interconnection point on a transmission line with sufficient capacity to allow for the economical delivery of power to customers on the transmission grid. A reasonable distance is determined, in part, by the capital cost of transmission line construction.

- **No Significant Environmental Issues.** Large scale wind energy projects are ideally located in areas that avoid significant environmental issues, areas of particularly sensitive habitats, or conflicting activities (e.g., airports).

The proposed Project location in Morton and Mercer counties was found to meet all of the siting criteria. The next step in the development process was to secure the site by entering into agreements with landowners interested in having ACE place wind turbines and associated facilities on their properties.

Once a site was selected and secured, preliminary turbine locations were identified based on an efficient project design, initial site inspection, topographic maps, known environmentally sensitive areas, review of North Dakota's power plant siting exclusion and avoidance areas, review of Morton and Mercer Counties' wind siting requirements, and communications with local, state and federal agencies. ACE is conducting a number of field studies such as wetland, biological, and cultural resource surveys and geotechnical investigations. After these field studies and additional analyses have been completed, ACE will provide the PSC first with preliminary turbine locations, then with proposed final turbine locations prior to the public hearing.

Once the PSC issues the Certificate, ACE would complete any remaining studies required by the Certificate or ACE's siting process, including additional geotechnical studies as well as outstanding wetland, biological, and cultural resource surveys. Once these additional studies are completed, preliminary turbine and access road locations will be reevaluated for their appropriateness with Certificate conditions and buffers. A final site plan for the Project will be submitted to the PSC prior to construction.

ACE believes that the aforementioned siting process is consistent with North Dakota siting rules and provides ACE the flexibility necessary to develop this Project in a timely, cost-effective, and environmentally responsible manner.

1.3 Project Summary

As part of the formation of ACE, the wind options located in the area north of Glen Ulin, ND held by ALLETE were designated for use by ACE. After reviewing the wind resource potential, environmental constraints, transmission access and other issues described below, ACE selected the study area for this project.

1.3.1 Project Study Area Alternatives

ACE used a number of criteria to select a site for the Project (i.e. high quality wind resource, available land, suitable transmission, and no significant environmental issues). See Section 1.2, above. Those alternative areas that do not meet these criteria were quickly dismissed and not studied in detail.

West central North Dakota is well suited for wind development because it features large open terrain without trees. ACE has identified a number of other areas that meet its siting criteria and could feasibly be developed for wind energy. However, because ACE intends to develop more than one wind energy project in North Dakota, some of these suitable areas were set aside for future development.

1.3.2 Project Study Area Selection

Exhibit 1 shows the location of the proposed Project boundary, study area, or site, which is approximately 7 miles east of the city of Hebron, North Dakota. This site was selected based on good land compatibility and accessibility, excellent wind resources, and proximity to a transmission grid interconnection point. In addition, the study area was selected considering the exclusion and avoidance criteria outlined in North Dakota Administrative Code (NDAC) 69-06-08.

The proposed Clean Energy #1 Project site combines the strength of the strong wind resource with close transmission access. The Clean Energy #1 Project will interconnect to the grid at a planned MP Tri-County substation in Mercer County described above in Section 1.0. From there, the Project will connect into MP's existing Bison Substation through a proposed 11-mile 230 kV transmission line extension from that substation.

From the Bison Substation, the Project will use the existing 230 kV Bison – Square Butte 84 Line to connect into the grid at the Square Butte 230 kV Substation. Finally, from the Square Butte Substation, the wind-generated electricity will be transmitted to Minnesota Power's transmission system via an existing 250kV DC Line and the existing AC transmission system as available.

West central North Dakota has higher average wind speeds than most other buildable areas in the Midwest, as shown in Figure 1, below. In evaluating these wind resources in Morton and Mercer counties, ALLETE embarked upon a wind assessment process to evaluate the wind energy potential in areas in which ALLETE has obtained site control near the western terminus of MP's DC Line. This wind assessment has produced over two years of wind data near the Clean Energy #1 site and indicates annual average wind speeds of over 8.5 meters per second (19 miles per hour) in the area, making it an ideal site to build a wind project that can deliver low cost energy to customers.

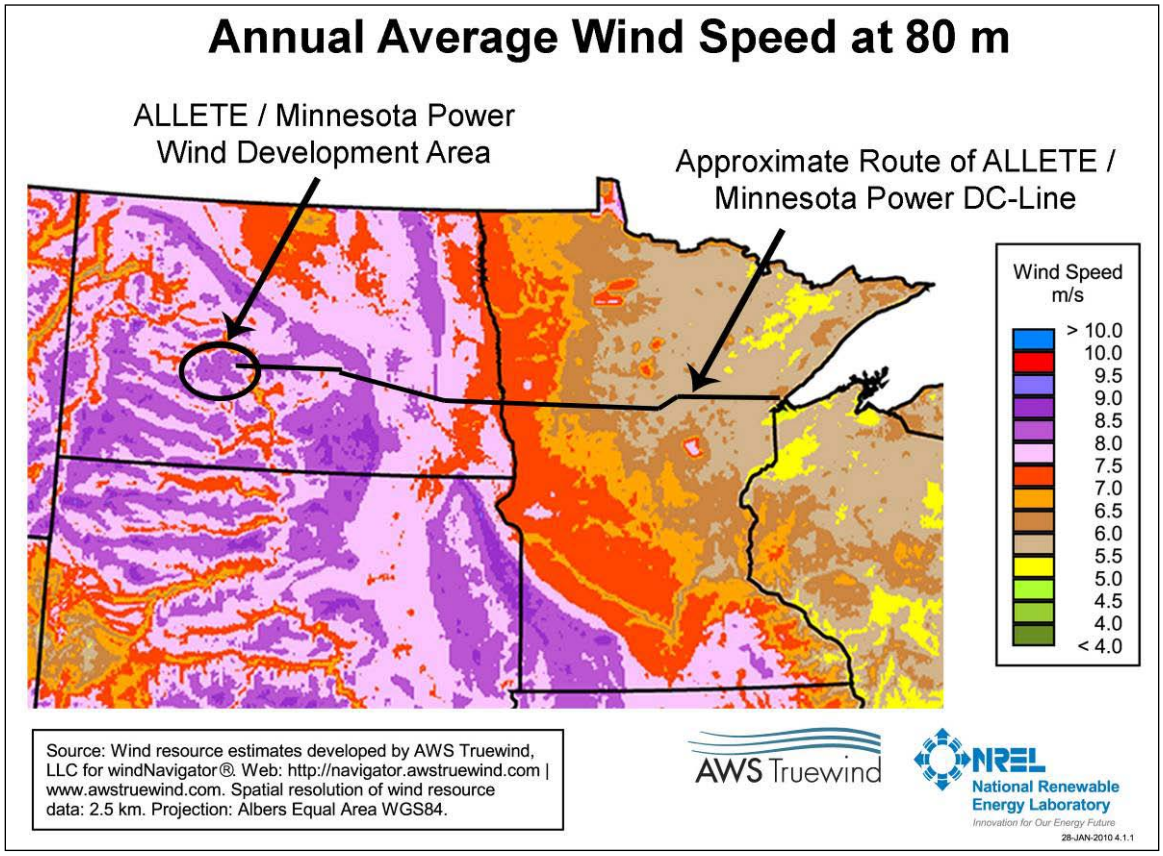


Figure 1. Upper Midwest Wind Resource Map

1.3.3 Proposed Site

Leases from most landowners have been obtained within the preliminary Project boundary. The Project site is located in Morton and Mercer counties within the following townships, ranges, and sections (Table 1-2).

Table 1-2 Project Site Location

County	Township	Range	Section
Morton	140N	88W	3, 4, 5, 6, 7, 8, 9, 10, 16, 17, 18
		89W	1, 11, 12, 13, 14
Mercer	141N	88W	27, 28, 32, 33, 34, 35, 36

The Project site encompasses approximately 12,000 acres and is located approximately 7 miles east of the City of Hebron and 8 miles north of the City of Glen Ullin. The turbines will be placed throughout the Project site. The Project's general location is shown in Exhibit 1 and the preliminary Project boundary, with aerial photo and topographical map backgrounds, is shown in Exhibit 2 and Exhibit 3, respectively.

Although final project design is not complete, overall project impacts can be estimated based on preliminary information. Of the 11,864 acres within the preliminary Project boundary, approximately 64 acres will be permanently impacted (about 0.5%). The remaining 11,800 acres will be left untouched by the project or will be allowed to revert to their former condition after project construction (areas such as those temporarily disturbed for crane paths). Detailed locations of wind turbine generators, access roads, and collector lines will be provided to the PSC a minimum of one week in advance of the public hearing.

1.3.4 Projected Output

As with all wind projects, output is dependent upon wind resource, final design, site-specific features, and equipment. The Project will have a nameplate (gross) capacity of up to 100-MW using up to fifty-one (50) turbines. These turbines at the selected site will produce an estimated annual average output of over 350,000 MWh.

1.4 Project Schedule

The anticipated schedule, including the commercial operation date, is dependent upon permitting approval, obtaining an off take agreement, and other development activities. With the aforementioned items in place, ACE plans to begin construction activities in the spring of 2012 and may complete access road, collector line, and turbine construction in the fall of 2012, provided all pre-construction permits and approvals have been obtained. Other Project-related activities include:

- **Certificate of Site Compatibility**: ACE anticipates the Certificate will be approved in April, 2012.
- **Land Acquisition:** ACE has secured sufficient easement options from landowners to develop up to a 100-MW project in Morton and Mercer counties.
- **Permits:** ACE is responsible for undertaking all required environmental studies, and will obtain all required permits and licenses concurrent with the PSC Certificate review and approval process. Completing permits is on the "critical path" for the Project and will allow ACE to move forward with other commitments, including ordering long-lead time equipment.
- **Equipment Procurement, Manufacture, and Delivery:** ACE anticipates securing a contract with a turbine supplier in late summer of 2012.

- **Construction:**
  - Project construction may begin in the second quarter of 2012, subject to receipt of the necessary permits and approvals, road restrictions and weather.
  - Construction of the access roads, wind turbine generator foundations, 34.5 kV electrical collector system, operations and maintenance building, and communication system for the wind turbine generators, may be completed in spring and summer of 2012.
  - Erection of the turbine generators may be completed in the fall of 2012.
- **Test and Operations:** Testing for Clean Energy #1 may begin in the fourth quarter of 2012.
- **Commercial Operation:** ACE expects commercial operation may begin in December of 2012 for all Clean Energy #1 turbines.

No expansions or modifications to the Clean Energy #1 Wind Project are planned. ACE will submit applications for any future additional wind generation facilities.

1.5 Project Ownership

ACE will construct and own the Clean Energy #1 Wind Project, including all equipment up to the interconnection point (MP's proposed substation and transmission line extension). ACE is a wholly owned subsidiary of ALLETE. The output of the Project will supply clean energy for ACE customer consumers across North America. Subject to the terms of the off take agreement, however, project ownership could be transferred to the eventual customer or another party.

2.0 Need for Facility

2.1 Need Analysis

Although projected electricity demand in the Midwest region has declined recently, the last Mid-Continent Area Power Pool (MAPP) report available (2009) indicates that deficits are expected over the next five to ten years. Since North Dakota has some of the best wind resources for energy development of any state, it has an opportunity to continue to add electricity generation capacity to meet those forecasted deficits with clean, efficient, renewable energy.

Also, continuing to develop North Dakota's wind energy resources supports a number of North Dakota's goals including general economic development, new wind project investments and construction, new landowner income, and new long-term jobs from broad professional services (such as wind project design, wind resource monitoring, legal and accounting services), and from the manufacturing of wind turbine components. The project also offers the opportunity to help North Dakota and the MAPP region stabilize wholesale power prices for the next 30 years—an important incentive for the state's long-term industrial development.

2.2 Alternatives

There are a number of traditional alternatives for generating electricity including the burning of coal or natural gas. Generation alternatives include wind, solar, small hydroelectric, and biomass. Given limitations associated with solar, hydroelectric, and biomass, wind energy is currently the most economic and technologically feasible of the renewable alternatives to meet ACE's near-term goal of developing renewable energy. As such, no other alternative was considered to the Clean Energy #1 Wind Project.

2.3 Ten-Year Plan

ACE will file a Ten-Year Plan with the PSC in 2012.

3.0 Site Selection Criteria

ACE is currently evaluating the proposed 12,000-acre site to determine the optimal locations for up to 51 wind turbines. Siting turbines is a process through which input from several different sources is considered. Initially, several study areas were considered based on the expected wind resources and transmission availability. The Clean Energy #1 study area was identified as an optimal site from an environmental, wind resource, and economic perspective (Exhibit 1).

ACE negotiated with landowners to secure wind lease options and has begun to identify preliminary turbine locations based on site inspection, topographic maps, known environmentally sensitive areas, review of North Dakota's power plant siting exclusion and avoidance areas, review of Morton and Mercer Counties' wind siting requirements, and communications with local, state, and federal agencies. Through this process, ACE not only

addresses environmental issues that commonly arise during project development, but also works within the parameters of state rules. North Dakota has several site selection criteria that are considered by the PSC to determine suitability of the site. ACE has reviewed the criteria in the NDAC, Title 69, Chapter 69-06-08, and has factored these criteria into site design. These criteria are discussed in this section.

3.1 Exclusion Areas

Section 69-06-08-01-1 of the NDAC states that specified "geographical areas shall be excluded in the consideration of a site for an energy conversion facility, and shall include a buffer zone of a reasonable width to protect the integrity of the area." Clean Energy #1 Project exclusion areas are listed in Table 3-1 and shown in Exhibit 4.

Table 3-1 Exclusion Areas

Exclusion Area	Present within Preliminary Project Boundary?	Proposed Buffer	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	No		7.9, 7.14, 7.15, Exhibits 1, 4 and 6
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.	Yes	8 cultural sites have been previously identified. Buffers will be determined in consultation with North Dakota SHPO	7.8, 7.9, 7.17
County parks and recreational areas, municipal parks, parks owned or administered by other governmental subdivisions, hardwood draws, and enrolled woodlands.	No		7.9
Prime farmland and unique farmland, as defined by the land inventory and monitoring division of the soil conservation service, United States department of agriculture, in 7 C.F.R. part 657; provided, however, that if the PSC finds that the prime farmland and unique farmland that will be removed from use for the life of the facility is of such small acreage as to be of negligible impact on agricultural productions, such exclusion shall not apply.	Yes	No buffer is proposed. Prime farmland has been avoided to the extent practicable. Impacts to prime farmland will affect less than 0.1% of the yearly production for the top five commodities in Morton and Mercer counties.	7.10, 7.11, Exhibit 8
Irrigated land	No		7.10
Areas critical to threatened or endangered animal or plant species	No		7.17
Areas where animal or plant species that are unique or rare to this state would be irreversibly damaged.	No		7.13, 7.14, 7.15, 7.17

3.2 Avoidance Areas

Section 69-06-08-01-2 of the NDAC states that specified "geographical areas shall 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 commission 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." Clean Energy #1 Project avoidance areas are listed in Table 3-2 and shown in Exhibit 4.

Table 3-2 Avoidance Areas

Avoidance Areas	Present within Project Site?	Proposed Buffer	Section Addressed
Historical resources which are not designated as exclusion areas	A Class I literature review has been completed and a Class III pedestrian survey was performed in October, 2011.	A report containing the results of the Class I and Class III investigations will be submitted to the North Dakota State Historic Preservation Office (SHPO) in January, 2012. In consultation with the SHPO, a professional archaeologist would establish buffers appropriate to the resource, once historic resources have been identified.	7.8
Areas within the city limits of a city or the boundaries of a military installation	No		7.3, Exhibits 1 and 4
Areas within known floodplains as defined by the geographical boundaries of the hundred-year flood	No		7.13
Areas that are geologically unstable	No		7.12
Woodlands and wetlands	Yes	All wetland resources will be avoided to the extent practicable and no permanent impacts will occur. Woodland impacts are not anticipated. If woodland impacts occur, individual trees or shrubs will be replaced at a 2:1 ratio in accordance with a planting plan approved by the PSC.	7.14, 7.15, Exhibits 7 and 10
Areas of recreational significance which are not designated as exclusion areas	No		7.9

3.3 Selection Criteria

Section 69-06-08-01-3 of the NDAC states that (a) site shall be approved in an area only when it is demonstrated to the commission 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 3–3).

Table 3-3 Selection Criteria

Selection Criteria	Potential Adverse Effects	Section Addressed
Impact Upon Agriculture:		
Agricultural production	The area required for the maximum 50 turbines would be a total of approximately 64 acres, of which 13 acres would be needed for the turbines, 51 acres for permanent access roads, and an additional 3 acres for an O&M Facility. The total of approximately 64 acres out of production is insignificant impact to agricultural production.	7.10
Family farms and ranches	No turbines will be placed within 1,400 feet of occupied residences. The permanent conversion of some land for access roads and turbines, as well as aesthetic changes, are the primary effects to family farms and ranches; however, the permanent effects from roads and turbine sites will be minimal and wind lease payments to farmers will provide a supplemental source of income.	7.2, 7.3, 7.10, Exhibit 4
Land which the owner demonstrates has soil, topography, drainage, and an available water supply that cause the land to be economically suitable for irrigation	No owner of land potentially containing Project infrastructure has expressed concerns related to land that is economically suitable for irrigation.	7.10
Surface drainage patterns and ground water flow patterns	No impacts are anticipated.	7.12, 7.13, 7.14, Exhibit 10
The agricultural quality of the cropland	No impacts to the agricultural quality of the cropland are anticipated. If compaction of soils occurs during construction, ACE will work with the landowners to alleviate the compaction.	7.10
Impact Upon Availability and Adequacy of:		
Law enforcement	No impacts are anticipated.	7.4
School systems and education programs	No impacts are anticipated.	7.4
Governmental services and facilities	No impacts are anticipated.	7.4
General and mental health care facilities	No impacts are anticipated.	7.4
Recreational programs and facilities	No impacts are anticipated.	7.4
Transportation facilities and networks	During construction an increase in vehicle trips per day is anticipated for approximately 6 months. During facility operation no significant impacts are anticipated.	7.4
Retail service facilities	No impacts are anticipated.	7.4
Utility services	ACE will utilize station service from the local electrical utility. MISO will suggest appropriate configurations for the electrical system, and ACE will abide by the recommendations to prevent adverse impacts to the transmission system.	2.0, 7.4

Selection Criteria	Potential Adverse Effects	Section Addressed
Impact Upon:		
Local institutions	No impacts are anticipated.	7.4
Noise sensitive land uses	Therefore, occupied residences, one cemetery, and one church are the only noise sensitive land use within or near the project area. Noise modeling indicates that even for the turbines with the highest noise levels the resulting ambient noise levels will not exceed the 50 dBA (A-weighted decibel) benchmark for residences within 755 feet from worst case turbine, and no turbine will be located closer than 1400 feet of a residence per previous PSC permit precedents.	7.6, Exhibits 2, 3, 4, and 6
Rural residences and businesses	No turbines will be placed within 1,400 feet of occupied residences or businesses.	7.2, 7.3, 7.10, Exhibit 4
Aquifers	No impacts are anticipated.	7.12
Human health and safety	If mitigative measures are implemented as discussed in Section 7.5.3 and maintenance schedules are met, no impacts to human health and safety are anticipated.	6.3, 6.5.2, 6.5.3, 7.5
Animal health and safety	No impacts to livestock are anticipated from operation of the facility. Based on biological surveys for similar projects and consultations with the NDGFD and USFWS, there is a potential for avian and bat collisions with the turbines, but the overall impacts are expected to be minimal. Mitigative measures in turbine siting will further minimize the potential for these impacts. ACE has conducted pre-construction habitat characterizations for selected avian species and will participate in informal post-construction mortality studies for avian and bat species.	7.10, 7.16, 7.17, Appendix A
Plant life	A maximum of approximately 64 acres of land will be permanently impacted for the turbines, building and access roads. The land where the turbines will be sited is primarily tilled and rangeland.	7.10, 7.15, Exhibit 7
Temporary and permanent housing	Temporary housing will be utilized during construction. No impacts are anticipated.	7.2
Temporary and permanent skilled and unskilled labor	No adverse effects are anticipated.	7.2
The cumulative effect of the location of the facility in relation to existing and planned facilities and other industrial development	No impacts are anticipated to existing and planned facilities and other industrial development.	7.3

3.4 Policy Criteria

Section 69-06-08-01-4 of the NDAC stats that "(t)he commission may give preference to an applicant that will maximize benefits that result from the adoption of the following policies and practices, and in a proper case may require the adoption of such policies and practices. The commission may also give preference to an applicant that will maximize interstate benefits." (See Table 3–4).

Table 3-4 Policy Criteria

Policy Criteria	Suitable Policy or Practice of Applicant	Section Addressed
Recycling of the conversion byproducts and effluents	No conversion byproducts or effluents occur as a result of wind energy conversion.	N/A
Energy conservation through location, process, and design	ACE is developing the site to maximize the energy output. ACE will develop a site layout that optimizes wind resources while minimizing the impact on land resources and any potentially sensitive areas. Wind-powered electric generation is entirely dependent on the availability of the wind resource at a specific location. The energy available from the wind increases at the third power of the wind speed. In other words, a doubling of the wind speed will increase the available energy by a factor of eight times. In addition, ACEs proposed use of the DC Line running from the Square Butte Substation to Duluth, Minnesota, affords great efficiencies for the export of the region's wind energy.	4.1
Training and utilization of available labor in this state for the general and specialized skills required	ACE will use local labor to the extent practicable. ACE Project management will meet with local labor well in advance of construction to assure the necessary human resources are available.	7.2.2
Use of a primary energy source or raw material located within the state	The energy generated at the site will utilize the wind resources of the state of North Dakota.	5.2
Nonrelocation of residents	No residents will be relocated as a result of the Project.	7.2, 7.3, 7.10
The dedication of an area adjacent to the facility to land uses such as recreation, agriculture, or wildlife management	The Project will not interfere with adjacent land uses.	7.3, 7.9, 7.10, 7.16, 7.17, Exhibit 6
Economies of construction and operation	ACE will utilize local contractors to the extent practicable.	7.2
Secondary uses of appropriate associated facilities for recreation and enhancement of wildlife	No lands within the Project site will be removed from recreational opportunities that currently exist there.	N/A
Use of citizen coordinating committees	ACE has and will continue to work with landowners on the development of the Project.	8.0
A commitment of a portion of the energy produced for use in this state	The use of the energy will depend on the offtake counter party.	2.1, 6.1
Labor relations	No labor relations will be affected.	7.2
The coordination of facilities	The potential for future facilities and facility corridors were considered in the location of the Project and its associated facilities. The proposed Project would share a proposed substation and existing transmission infrastructure.	3.0, 3.6
Monitoring of impacts	ACE and the construction contractor will employ Best Management Practices (BMPs) during construction to monitor soil impacts and segregate topsoil. ACE will monitor tree and shrub replacement for three years or otherwise in accordance with an approved replanting plan.	7.11, 7.15, 7.16

3.5 Design and Construction Limitations

In general, there are two design and construction limitations when building any wind farm: wind resources and site control. The wind resource is essential to selecting and designing a wind farm. ACE conducts a thorough analysis of sites they select to ensure that each has ample wind energy to generate revenue for the wind farm. For site control, ACE negotiates with landowners to secure wind energy options which are later converted to leases after all necessary permits are acquired.

Specific to the Project, there are several additional items that are limiting factors. Morton and Mercer Counties, and the PSC have established setbacks from property boundaries, road rights-of-way (ROW), and occupied residences. See Section 4.1 for more detailed setback requirements. These setbacks limit the amount of land available for wind development. In addition, as noted in Section 3.6, proximity and access to adequate transmission is critical to wind project siting.

3.6 Economic Considerations

Economic factors were an importation consideration when selecting the proposed Project's size and location. As discussed above, it is important to select a site with a wind resource capable of generating energy at a high capacity factor. Information on the wind resource at the site is discussed in Sections 5.2 and 5.3. The Clean Energy #1 Project will interconnect with the proposed MP substation and 230 kV transmission line, which will connect with MP's existing 230 kV Bison – Square Butte 84 Line and then to interconnect at the Square Butte 230 kV Substation.

4.0 General Description of the Proposed Facility

4.1 Wind Power Technology

ACE has not yet selected a turbine manufacturer but is considering turbines in the 2 to 3 MW size range. The ultimate turbine rating will drive the number of turbines needed. For example, a 2 MW unit would require 50 locations while a 3 MW unit would require 33 locations. So, for example, if ACE uses a 3.0 MW turbine, the project will have between 17 alternate turbine locations in its layout for the project depending on to the selected turbine capacity.

Each turbine will have a maximum nominal hub height of 90 meters (295 feet), and a maximum nominal rotor diameter of 120 meters (393 feet). The turbines begin operation in wind speeds of approximately 3 mps (8.9 mph) and reach their rated capacity at wind speeds of 12 to 13 mps (26.8 to 29.0 mph). The turbines are designed to operate in wind speeds of up to 25 mps (55.9 mph) and can withstand sustained wind speeds of more than 55 mps (123.0 mph).

Each tower will be secured by a concrete foundation that can vary in design depending on the soil conditions. A control panel inside the base of each turbine tower houses communication and electronic circuitry. Each turbine is equipped with a wind speed and direction sensor that communicates to the turbine control system to signal when sufficient winds are present for operation. The turbine features variable-speed control and independent blade pitch to assure aerodynamic efficiency.

The electricity generated by each turbine is brought to a pad-mounted transformer where the voltage is stepped up to collection-line voltage of 34.5 kV. The electricity is collected by a system of collection lines within the Project site. Typically, this infrastructure is run adjacent to the Project access roads or along public rights-of-way (ROWs) or easements. In cases where such infrastructure must be sited on property that is not governed by the existing wind easement and land lease options, ACE will obtain easements for the necessary property.

The 34.5 kV collector system will transmit power to a proposed MP substation in Mercer County. At the Project substation, the power will be transformed to a proposed 230 kV transmission line that will connect with MP's existing 230kV Bison – Square Butte 84 Line to interconnect at the Square Butte 230 kV Substation.

Electrical energy is converted from AC to DC via a DC converter station within the Square Butte Substation. From there, the electric energy from the Clean Energy #1 Wind Project will be transmitted to customers via the existing MP DC Line which extends from the Square Butte Substation to MP's Arrowhead Substation located near Duluth, Minnesota. Electrical energy may also reach ACE customers via the existing AC transmission system, as capacity is available. Each wind turbine will be accessible via all-weather aggregate surfaced roads approximately 16 to 23 feet wide.

ACE will develop a site layout that optimizes wind resources while minimizing the impact on land resources and any potentially environmentally sensitive areas.

Wind-powered electric generation is entirely dependent on the availability of the wind resource at a specific location. The energy available from the wind increases at the third power of the wind speed. In other words, a doubling of the wind speed will increase the available energy by a factor of eight times. Design of the turbine array and collection system will minimize energy loss due to wind turbine wakes and turbulence and electrical line losses.

Morton County has recently established setbacks for wind turbine towers from property boundaries, road ROWs, and occupied residences. Each wind turbine must be no less than 1.25 times its total height, or 1,320 feet (whichever is greater), from the nearest occupied dwelling, commercial building, or publicly used structure or facility, and state and county parks. From public road and aboveground transmission lines, turbines must be located no less than 250 feet from the center line of the existing ROW. And from the wind energy facility perimeter, each turbine must be set back no less than 1.0 to 1.5 times the rotor diameter.

Morton County General Provisions require that ACE place electrical lines, known as collectors, and communication cable underground when located on private property. Collectors and cable shall also be placed within or adjacent to the land necessary or wind turbine access roads unless otherwise negotiated with the affected landowner (does not apply to feed lines). Overhead collection facilities may be permitted where necessary.

Morton County General Provisions also require that ACE shall not place overhead feeder lines on public road or drainage easement ROWs. When placing feeders on private property, ACE shall place the feeder in accordance with the easement negotiated with the affected landowner. If ACE cannot place overhead feeder lines on private property a request may be made to place them on public ROWs with approval from the governmental unit responsible for the affected ROW.

Mercer County has established setbacks for wind turbine towers from property boundaries, road ROWs, and occupied residences. Each wind turbine shall be no less than 1,000 feet from the nearest occupied dwelling, commercial building or publicly used structure or facility, unless otherwise negotiated with the landowner. From public roads and aboveground communication or electrical lines, wind turbines shall be set back a distance of not less than one hundred ten (110%) of the height of the wind turbine (measured from the ground surface to the tip of the blade when in a fully vertical position), from the edge of the existing right-of-way. Each wind turbine shall be set back from the wind energy facility perimeter and property lines a distance of not less than one hundred ten percent (110%) the height of the wind turbine. Mercer County requires that the blade tip of any wind turbine shall, at its lowest point, have ground clearance of no less than seventy five (75) feet.

Mercer County requires that ACE shall place electrical lines and communication cables underground on private property. Collectors and cables shall also be placed within or adjacent to the land necessary for wind turbine access roads. When placing feeders on private property, ACE shall place the feeder in accordance with the easement negotiated with the affected landowner. If ACE cannot place overhead feeder lines on private property a request may be made to place them on public ROWs with approval from the governmental unit responsible for the affected ROW.

The PSC staff has asked ACE for a voluntary setback of 1,400 feet from occupied residences. ACE will voluntarily comply with this setback in both Morton and Mercer Counties, which is greater than the required minimum setback in both counties. ACE will request a Conditional Use Permit from Mercer County and a Special Use Permit from Morton County. Table 4–1 identifies the most conservative setbacks applicable to the Project.

Table 4-1 Performance Standards, including Setbacks, for Wind Turbines

Standard	ND Public Service Commission (unofficial but required)	Mercer County	Morton County
Occupied Residence	1400 ft	1000 ft	1.25 X the total height of the turbine or 1,320 feet, whichever is greater
Wind Energy Facility Perimeter	110% of max turbine height	110% the height of the wind turbine	1 to 1.5 times the rotor diameter of the wind turbine
Road ROW	110% of max turbine height (publicly maintained roads only)	110% the height of the wind turbine from the edge of the existing ROW	250 feet from the center line of the existing road ROW
Above Ground Transmission Line	110% of max turbine height	110% the height of the wind turbine from the edge of the existing ROW	250 feet from the center line of the existing road ROW
Minimum Ground Clearance	N/A	75 feet from a blade tip, at its lowest point, to the ground	75 feet from a blade tip, at its lowest point, to the ground
Property Line	N/A (overhang easements required)	At least 110% the height of the wind turbine, unless wind easement has been obtained from adjoining property owner.	N/A
Waterfowl Production Area	1320 ft	N/A	N/A
Railroad Right-of-Way	110% of max turbine height	N/A	N/A

4.2 Associated Facilities

In addition to the wind turbines and the step-up transformers, the Project will include a maximum of approximately 19 miles of permanent access roads to the wind turbines year-round (required for a 50 turbine project). These roads will typically be 16 to 23 feet wide and low profile to allow cross-travel by farm equipment and turbine maintenance equipment. ACE will work closely with the landowners in locating access roads to minimize land use disruptions. Consideration will be given in locating access roads to minimize effects on current or future row crop agriculture, grazing, and environmentally sensitive areas. The site will also include one permanent meteorological tower.

MP has proposed a new substation in Mercer County to accommodate the Clean Energy #1 Project, and future wind energy projects. An Operations and Maintenance (O&M) building will be constructed near the new substation.

The electricity generated by each turbine is stepped up by a pad-mounted transformer at the base of each turbine to collection-line voltage of 34.5 kV. The electricity generated at each turbine is collected by a system of power collection lines within the Project site and brought to the Project collector substation.

The 34.5/230 kV collector substation will increase the voltage in order to facilitate the efficient transmission of the wind-generated energy to the existing Square Butte Substation along an existing 230 kV transmission line.

4.3 Land Rights

ACE has obtained wind options for the 100 MW project. Land rights will encompass the proposed wind farm and all associated facilities, including but not limited to wind easements, wind turbines, and access roads.

5.0 Proposed Site

5.1 Identification of Project Site

In addition to wind resource considerations, the Project site was selected based on its proximity to existing transmission infrastructure, proximity to an existing substation, and landowners' interest in participating in the Project. Land use patterns and environmentally sensitive features were also considered, as well as the siting criteria previously discussed in accordance with Section 69-06-08-01 of the NDAC. The site boundary encompasses an area of approximately 12,000 acres. However, the land that would be permanently occupied by wind farm infrastructure (turbines, access roads, and collector lines) would be less than one percent of this area, assuming up to 50 turbines, 19 miles of access roads, 3 acres for an O&M Facility, and the predominant use of underground collector lines. It is anticipated that the total area of direct land use for the turbines and associated facilities would be approximately 64 acres. See Section 7.0 for a detailed description of the Project and site impacts. Proposed final locations of wind turbine generators will be provided a minimum of one week in advance of public hearings.

5.2 Wind Resource Areas – General

The National Renewable Energy Laboratory (NREL) wind map for the state of North Dakota indicates that the average annual wind speeds at an 80 meter hub height within the Project area are 8 to 9 mps (17.9 to 20.1 mph) (Figure 2). ACE has reviewed and analyzed meteorological information for the Morton and Mercer County areas and the Project site. This information is described next in Section 5.3.

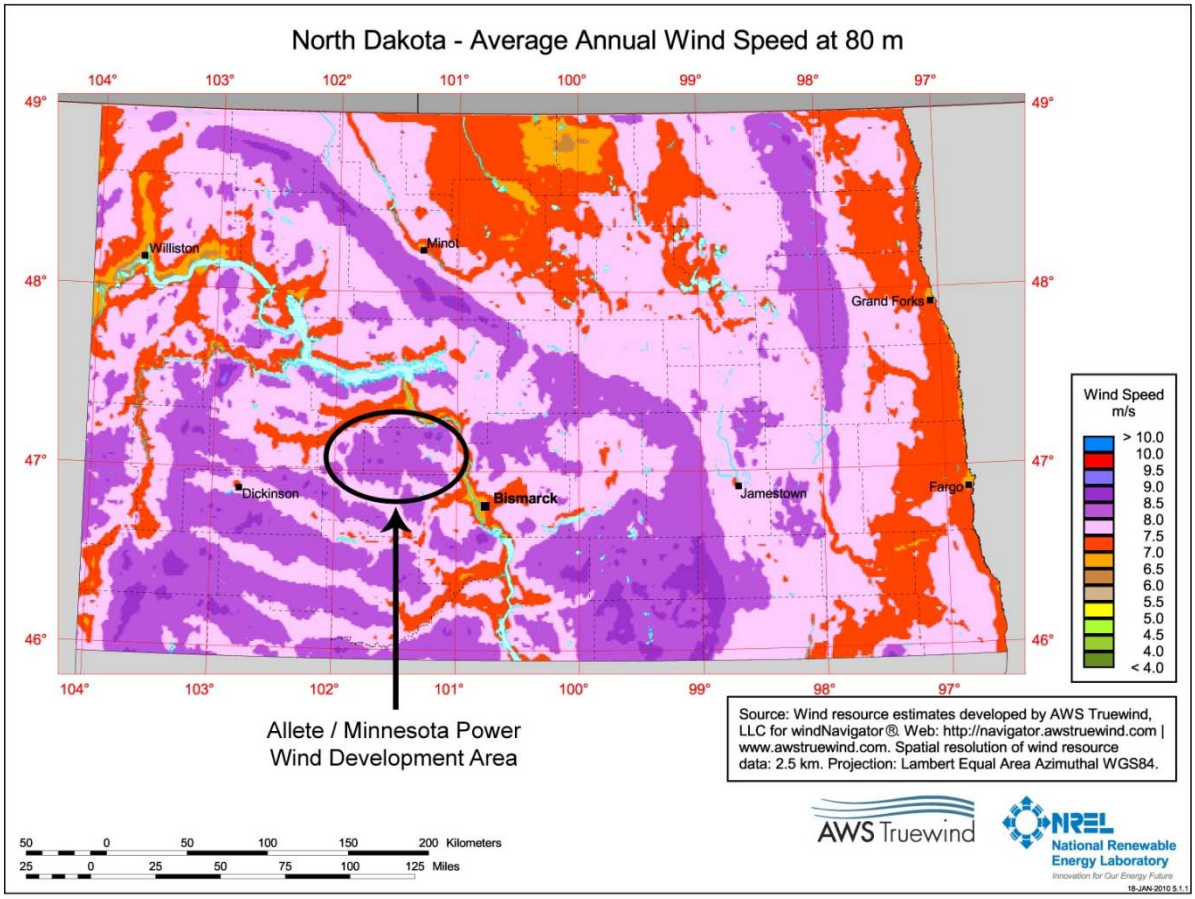


Figure 2. Wind Map for the state of North Dakota

5.3 Wind Characteristics at Project Site

In evaluating these wind resources in Morton and Mercer counties, ACE embarked upon a wind assessment process to evaluate the wind energy potential in areas in which ACE has obtained site control near the western terminus of MP's DC Line and confirmed annual average wind speeds in the range of 9 meters per second. The location of the ACE Wind Project combines the strength of a strong wind resource with the good proximity to the DC Line to provide lower cost, renewable energy generation to meet customer power needs.

6.0 Engineering and Operational Design Analysis

This section provides a description of the Project, which includes the Project layout, turbines, electrical system, and associated facilities. A summary of this information is included in the Design Data Report, which will be provided under separate cover. Additional information addressed in this section includes project construction, schedule, operation, and decommissioning of the site.

6.1 Clean Energy #1 Project Layout and Associated Facilities

The Project will consist of an array of wind turbines, transformers, underground and/or overhead electrical collector and communication cables, and access roads. The Project collector system and communication cables will connect to the proposed MP substation.

The Clean Energy #1 Project facilities will include the construction of a maintenance and operations facility. The Project will utilize the planned 230 kV transmission line and MP's existing Bison 230 kV line to deliver the electrical energy to the point of grid interconnection at the existing Square Butte Substation.

Drainage systems, access roads, crane pads, foundations, storage areas, and O&M facilities will be installed as necessary to fully accommodate all aspects of Project construction, operation, and maintenance.

The Project includes a computer-controlled communications system that permits automatic, independent operation, and remote supervision of each wind turbine. ACE or its assignee will be responsible for Project operation and maintenance for the life of the Project. ACE will contract with appropriate qualified supplier of operations and maintenance services at start-up, to assure timely and efficient operations. ACE will maintain a database for tracking each wind turbine's operational history.

6.2 Description of Wind Turbines

6.2.1 Turbine

Although ACE has not selected a turbine for the project, turbines of 2.0 MW capacity or larger are under consideration. The selected turbine will be designed to meet the wind and climatic conditions of the site. Turbines typically begin operation in wind speeds of approximately 3 mps (6.7 mph) and reach rated capacity at a wind speed of 12 to 13 mps (26.8 to 29.0 mph). The selected turbine will be designed to operate in wind speeds of up to 25 mps (55.9 mph) and can withstand sustained wind speeds greater than 55 mps (123.0 mph).

Any turbine selected will have active yaw and pitch regulation and asynchronous generators. The turbines use a bedplate drive train design where all nacelle components are joined on common structures to improve durability.

The turbines will also have Supervisory Control and Data Acquisition (SCADA) communication technology to control and monitor the wind farm. SCADA systems permit automatic, independent operation and remote supervision, allowing the simultaneous control of many wind turbines. Operations, maintenance, and service arrangements between the turbine manufacturer and ACE will be structured to provide for timely and efficient operations. The computerized data network will provide detailed operating and performance information for each wind turbine. ACE will maintain a database for tracking each wind turbine's operational history.

Other specifications of the turbines include:

- Rotor-blade pitch regulation
- A full-span pitching aerodynamic braking system
- Electromechanically driven yaw systems

6.2.2 Rotor

The maximum nominal rotor diameter under consideration is 110 meter (361 feet). The rotor consists of three blades mounted to a rotor hub. The hub is attached to the nacelle, which houses the generator, brake, cooling system, and other electrical and mechanical systems. The rotor speed would range from 6 to 16 rpm.

6.2.3 Tower

The maximum nominal tower height (hub height) under consideration is for this project is 95 meters (312 feet). The turbine towers, on which the nacelles are mounted, consist of three to four sections of conical tubular steel manufactured from certified steel plates. All welds are made in automatically controlled power-welding machines and are ultrasonically inspected during manufacturing per American National Standards Institute (ANSI) specifications. All surfaces are sandblasted and multi-layer coated for protection against corrosion. The towers are uniformly painted with a non-reflective white paint. Access to the turbine is through a lockable steel door at the base of the tower. Four platforms are connected with a ladder and a fall arresting safety system for access to the nacelle. A controller cabinet will be located inside each tower base.

6.2.4 Lightning Protection

Each entire turbine is equipped with a lightning protection system. The turbine is grounded and shielded to protect against lightning. The grounding system will be installed during foundation work, and must be designed for local soil conditions. The resistance to neutral earth must be in accordance with local utility or code requirements. Lightning receptors are placed in each rotor blade and in the tower. The electrical components are also protected.

6.2.5 Lighting

Turbines will be lit per Federal Aviation Administration (FAA) requirements. Per these requirements, turbines would be lit with white or red flashing lights that will be visible from nearby areas at night. The FAA lights will be placed at hub height on the turbine nacelles at the end of and middle of turbine strings, as specified in the FAA determination letters.

6.3 Description of Electrical System

At the base of each turbine a step-up transformer will be installed to raise the voltage to collection-line voltage of 34.5 kV. Power will run through a collection system to the Project's 34.5/230 kV collector substation. Typically, the collector system is run underground and adjacent to the Project access roads or along ROWs or easements. An new 230 kV transmission line will transmit power through the existing Bison substation to the Square Butte Substation, where it will interconnect with the transmission grid.

Electrical energy is converted from AC to DC via a DC converter station within the Square Butte Substation. Electrical energy from the Clean Energy #1 Project will be transmitted to customers via the existing MP DC Line which extends from the Square Butte Substation to MP's Arrowhead Substation located near Duluth, Minnesota or via the existing AC transmission system as available. All utility protection and metering equipment will meet MP and National Electric Safety Code (NESC) standards for parallel operations. The design team will ensure that proper interconnection protection is established.

6.4 Clean Energy #1 Wind Project Construction

Many activities must be completed prior to the proposed commercial production dates. Assuming a 2012 in service date, the preconstruction, construction, and post-construction schedule of activities for the Project include the following:

- Order all necessary wind turbine components including towers, nacelles, hubs and blades (proposed for first quarter 2012).
- Complete most environmental and archaeological surveys by November 2011, with follow up studies in Spring, 2012 if needed.
- Complete preliminary survey and design to establish locations of wind turbine generators, access roads, and collector system (proposed for spring and summer 2012)
- Complete soil borings, testing, and analysis for proper foundation design and materials (proposed for spring and summer 2012)
- Finalize turbine micrositing (completed in September 2011)
- Obtain all required regulatory approvals (proposed for April 2012)
- Complete construction of laydown yards, access roads, and crane hardstandings to be used for construction and maintenance (proposed for summer 2012)

- Complete construction of wind turbine generator foundations (proposed for summer 2012)
- Complete construction of electrical collector system and communication system (proposed for summer 2012)
- Delivery of wind turbine components to the site (proposed for summer/fall 2012)
- Complete tower placement and wind turbine erection (proposed for fall 2012)
- Complete commissioning and acceptance testing of facility (proposed for fall 2012)
- Begin commercial production (proposed for December 2012)

Access roads will be built adjacent to the towers, allowing access both during and after construction. The permanent roads will be approximately 16- to 23-feet wide and have aggregate surfacing, adequate to support the size and weight of maintenance vehicles under all weather conditions. The access roads will be designed with curves and vertical grades to accommodate long and heavy loads required for transport of wind turbine components. These roads will meet state and local requirements. The specific turbine placement will determine the amount of roadway that will be constructed for the Project.

ACE will develop an improved crane-traveling surface that will be integral with the access roads where applicable. The temporary improved surface will be up to 40 feet wide, and consist of compacted earth or aggregate depending on soil conditions, in order to accommodate cranes with approximately 33-foot track width. The driving surface (aggregate surfacing) will likely be 16 to 23 feet in width (roads will have to be wider at turns). The access road impacts calculated in this application assumes a 23-foot permanent width.

The grading design and construction will also include preparation of working surfaces for assembly and erection of the wind turbine generators.

Foundations for the wind turbine generators will likely be cast-in-place reinforced-concrete spread foundations. Construction will include excavation; formwork; placement of anchor bolts, reinforcing steel, and other embedded items; and placement and finishing of the ready-mix concrete. ACE anticipates that ready-mix concrete will be available from existing suppliers in the area.

The 34.5 kV electrical collector system and fiber optic communication system will likely be installed in a common trench.

The Tri-County 34.5/230 kV collector substation will require construction of additional cast-in-place reinforced-concrete foundations, erection of structural steel supports for electrical bus work and equipment, and installation of one transformer, circuit breakers, switches, instrument transformers, and other electrical equipment.

During the construction phase, several types of light, medium, and heavy-duty construction vehicles will travel to and from the site, along with private vehicles used by construction

personnel. ACE estimates that there will be up to 100 trips per day in the area during peak construction periods, when the majority of the foundation and tower assembly is taking place. At the completion of each construction phase, heavy duty equipment will be removed from the site or reduced in number.

6.4.1 Construction Management

ACE anticipates designating an on-site construction manager with responsibility for scheduling and coordination of Project construction activities. The construction manager will use the services of local contractors, where possible, to assist in Project construction.

The on-site construction manager will schedule and coordinate the following activities:

- Site development, including roads
- Foundation excavation
- Concrete foundations
- Electrical collector system and communications installation
- Tower assembly and machine erection
- Bison collector substation additions
- System commissioning and testing

Throughout the construction phase, ongoing coordination occurs between the Project development, design, and construction teams. The on-site construction manager helps to coordinate all aspects of the Project, including quality control, site security, and ongoing communication with local officials, citizen groups, and landowners.

The construction manager will work with ACE's operations and maintenance staff and the turbine supplier's erection, commissioning, and maintenance personnel to ensure a smooth transition from construction to testing and commissioning and on through to commercial operation of the Project.

6.4.2 Foundation Design

The wind turbines' freestanding tubular towers will be connected by anchor bolts or an equivalent system to a cast-in-place reinforced-concrete foundation. Geotechnical investigations will be conducted to determine the engineering properties of the soils at the Project site. The design of the turbine foundations will accommodate turbine tower load specifications provided by the turbine supplier. The final dimensions of the foundations are dependent on soil conditions encountered at the site; however, foundations for similar sized turbines are typically 45 to 65 feet across and 7 to 10 feet deep.

6.4.3 Civil Works

Completion of the Project will require various types of civil works and physical improvements to the land. These civil works may include the following:

- Improvement of existing access roads to the Project site
- Construction of roads adjacent to the wind turbine strings to allow construction and continued servicing of the wind turbines
- Clearing and grading for wind turbine tower foundation installations
- Installation of 34.5 kV electrical collector cables and fiber optic cables for connecting the individual wind turbines to the collector substation
- Clearing and grading for pad-mount transformers and other installations

Improvements to existing public roads may include increasing width, modifying/improving subgrade, adding aggregate surfacing, and installation of approaches and culverts to transition to new Project access roads. Improvements to existing public roads will be performed in coordination with and with the consent of county highway department officials. No asphalt or other paving is anticipated. Access roads will be designed and constructed along turbine strings or arrays to provide all-weather access for delivery of turbine components and erection equipment. These roads will be sited in consultation with local landowners and completed in accordance with local building requirements. They will be located to facilitate both construction (cranes) and continued operation and maintenance. Siting roads in areas with unstable soil will be avoided wherever possible. All roads will include appropriate drainage and culverts while allowing for the crossing of farm equipment wherever practical. The roads will be approximately 16 to 23 feet wide and will be covered with aggregate surfacing designed to provide a stable driving surface under all weather conditions. The roads will likely consist of compacted subgrade covered with geotextile and compacted aggregate surfacing. Once construction is completed, the roads will be regraded, resurfaced, or dressed as needed.

6.4.4 Commissioning

The Project will be commissioned in one phase and is anticipated to occur in 2012, assuming an off-take agreement is secured. This will include up to 50 turbines. Clean Energy #1 turbines will undergo detailed inspection and testing procedures. Inspection and testing occurs for each component of the wind turbines, as well as the communication system, meteorological system, electric collection system, and the System Control and Data Acquisition (SCADA) system.

6.5 Project Operation and Maintenance

Each wind turbine in the Project will communicate directly with the SCADA system for the purposes of performance monitoring, energy reporting, and trouble-shooting. Under normal conditions each wind turbine operates autonomously, making its own control decisions.

ACE will enter into a contractual agreement with the turbine supplier to provide several years of on-site service and maintenance for the Project.

6.5.1 Project Control, Management, and Service

ACE and the turbine supplier will control, monitor, operate, and maintain the Project by means of a SCADA system. In addition to regularly scheduled site visits, the Project will be continuously monitored via the SCADA system.

The SCADA system offers access to wind turbine generation or production data, availability, meteorological and communications data, as well as alarms and communication error information. Performance data and parameters for each machine (generator speed, wind speed, power output, etc.) can also be viewed, and machine status can be changed. There is also a "snapshot" facility that collects frames of operating data to aid in diagnostics and troubleshooting of problems.

The primary functions of the SCADA system is to:

- Monitor wind farm status
- Allow autonomous turbine operation
- Alert operations personnel to wind farm conditions requiring resolution
- Provide a user/operator interface for controlling and monitoring wind turbines
- Collect meteorological performance data from turbines
- Monitor field communications
- Provide diagnostic capabilities of wind turbine performance for operations and maintenance personnel
- Collect wind turbine and wind farm material and labor resource information
- Provide information archive capabilities
- Provide inventory control capabilities
- Provide information reporting on a regular basis

6.5.2 Maintenance Schedule

ACE and the turbine supplier will remotely monitor the Project on a daily basis. This will be accompanied by periodic visual inspections by qualified technicians. More frequent inspections will be made in the first three months of commercial operation to verify that the Project is operating within expected parameters.

Actual maintenance intervals and tasks are subject to the requirements of the specific turbine selected. However, in general, turbine service and maintenance can be generally divided into the following intervals:

A. **First Service Inspection.** The first service inspection will take place one to three months after the turbines have been commissioned. At this inspection, particular

attention is paid to tightening 100 percent of all bolts in conjunction with a general inspection.

B. Semi-Annual Service Inspection. Regular service inspections begin six months after the first inspection. The semi-annual inspection consists of lubrication and a safety test of the turbine.

C. Annual Service Inspection. The yearly service inspection consists of semi-annual inspection tasks, plus a full component check. Bolts are checked with a torque wrench. The check covers 10 percent of every bolt assembly. If any bolts are found to be loose, all bolts in that assembly are tightened 100 percent and the event is logged.

D. Two Year Service Inspection. The two year service inspection consists of the annual inspection tasks, plus checking and tightening of terminal connectors.

E. Five Year Service Inspection. The five year inspection consists of the annual inspection tasks, an extensive inspection of the wind braking system, checking and testing of hydraulic oil and grease, balance check, and testing the tightness of terminal connectors.

6.5.3 General Maintenance Duties

The O&M field duties include performing all scheduled and unscheduled maintenance, including periodic operational checks and tests, and regular preventive maintenance on all turbines, related plant facilities and equipment, safety systems, controls, instruments, and machinery. Preventive maintenance includes such tasks as:

- Maintenance on the wind turbines and on the mechanical, electrical power, and communications system
- Performance of all routine inspections
- Maintenance of all hydraulic oil levels
- Maintenance of the control systems, all Project structures, access roads, drainage systems, and other facilities necessary for operation
- Maintaining all O&M field maintenance manuals, service bulletins, revisions, and documentation for the Project
- Maintenance of all parts, price lists, and computer software.
- Providing all labor, services, consumables, and parts required to perform scheduled and unscheduled maintenance on the wind farm, including repair and replacement of parts and removal of failed parts
- Cooperating with avian and other wildlife studies as may be required, to include reporting and monitoring
- Managing lubricants, solvents, and other hazardous materials as required by local and/or state regulations

- Maintaining appropriate levels of spare parts in order to maintain equipment; ordering and maintaining spare parts inventory
- Providing all necessary equipment including industrial cranes for removal and reinstallation of turbines
- Hiring, training, and supervising a work force necessary to meet the general maintenance requirements
- Implementing appropriate security methods

ACE will enter into a contractual agreement with the turbine supplier to provide several years' operations and maintenance services for the Project. The service and maintenance activities will be performed by qualified technicians.

6.5.4 Operations and Maintenance Facility

The O&M facility is located near the proposed substation. This building will house all the necessary equipment to operate and maintain the Project.

6.6 Decommissioning and Restoration

At the end of its useful life, ACE will remove the wind facilities in accordance with North Dakota Wind Turbine Decommissioning guidelines (ND Chapter 69-09-09). This includes:

- Dismantling and removal of all towers, turbine generators, transformers, and overhead cables
- Removal of underground electrical cables to a depth of twenty-four inches(60.96 centimeters)
- Removal of foundations, buildings, and ancillary equipment to a depth of 3 feet below existing ground surface
- Removal of surface road material and restoration of the roads and turbine sites to substantially the same physical condition that existed immediately before construction
- Grading, adding topsoil, and reseeding according to natural resource conservation service technical guide recommendations and other agency recommendations, areas disturbed by the construction of the facility or decommissioning activities, unless the landowner requests in writing that the access roads or other land surface areas be retained.

ACE also reserves the right to explore alternatives regarding Project decommissioning at the end of the Project Certificate term. Retrofitting the turbines and power system with upgrades based on new technology may allow the wind facility to produce efficiently and successfully for many more years. Based on estimated costs of decommissioning and the salvage value of decommissioned equipment, the salvage value of the wind facility will exceed the cost of decommissioning.

ACE will file a decommissioning plan with the PSC in accordance with ND Decommissioning Guidelines (69-09-09-06).

7.0 Environmental Analysis

This section provides a description of the environmental conditions that exist within the Project area. Consistent with the North Dakota Energy Conversion and Transmission Facility Siting Act, the exclusion and avoidance criteria were considered as well as selection and policy criteria in the selection and design of the Project. To support this siting process, maps of the site were generated that indicate the presence or absence of many of the criteria highlighted in NDAC 69-06-08. See Exhibit 4.

7.1 Description of Environmental Setting (Introduction)

The Project is located in an area that is entirely rural with an agricultural and service-based economy. The economy is driven primarily by crop-based agricultural products. Wheat is the predominant crop in Morton and Oliver counties (NASS 2009). The landscape in the Project area is primarily rolling hills with multiple isolated wetlands throughout the site. Elevations within the Project area range from 641 to 744 meters (2105 to 2440 feet) above sea level.

7.2 Demographics

7.2.1 Description of Resources

The Project is located within a lightly populated rural area in west-central North Dakota. There is no indication of any new residential construction on the site. Information on population and economics for this section was taken from the 2010 U.S. Census and 2009 census estimates.

The population of Morton County is 27,471. The population of Mercer County is 8,424 Table 7.2–1 summarizes the population and economic characteristics within the Project area.

According to the 2010 U.S. Census, the largest industry employing residents of Mercer County is Agriculture, with the second largest industry being transportation and warehousing, and utilities. The largest industry employing residents of Morton County is Educational, Health, and Social Services, while the second largest industry is Retail Trade.

Table 7.2-1 Population and Economic Characteristics

Location	Population	Per Capita Income (dollars)	Percentage of Persons Below Poverty Level
Morton County	27,471	24,122	10.1
Mercer County	8,424	29,900	7.2
North Dakota	672,591	24,978	11.7

U.S. Census Bureau, 2010 Population; 2009 Demographic Estimates

7.2.2 Impacts

Short-term impacts to socioeconomic resources will be relatively minor. Up to 64 acres of agricultural land will be removed from production due to conversion to turbine sites and associated access roads. This amounts to <1% of the Project area. Landowner compensation will be established by individual lease agreements. In general, areas surrounding each turbine can still be farmed or used for grazing. In addition, in an environment of uncertain agricultural prices and yields, the supplemental income provided to farmers from wind energy leases will provide stability to farm incomes and thus support the continued viability of farming on the Project site. Project construction will not cause additional impacts to leading industries. There is no indication that any minority or low-income population is concentrated in any one area of the Project, or that the wind turbines will be placed in an area occupied primarily by any minority group.

To the extent that local contractors are used for portions of the construction, total wages and salaries paid to contractors and workers in Morton and Mercer counties will contribute to the total personal income of the region. Additional personal income will be generated for residents in both counties and the state by circulation and recirculation of dollars paid out by ACE as business expenditures and by state and local taxes. Expenditures made for equipment, energy, fuel, operating supplies, and other products and services benefit businesses in the counties and the state.

It is likely that general skilled labor is available either in the county or the state to serve the basic infrastructure and site development needs of the Project. Specialized labor will be required for certain components of the wind farm development; it is likely that this labor will be imported from other areas of the state or from other states as the relatively short duration of construction does not warrant special training of local or regional labor. Balancing the use of local contractors and imported specialized contractors would likely alleviate any labor relation issues.

No effects on permanent housing are anticipated. During construction, out-of-town laborers will likely use lodging facilities in and around the cities of Glen Ullin or Hebron. Operation and maintenance of the facility will require few laborers; sufficient permanent housing is available within the counties to accommodate these laborers.

Long-term beneficial impacts to the counties' tax base as a result of the construction and operation of the wind farm will contribute to improving the local economy in this area of North Dakota. The development of wind energy in this region will be important in diversifying and strengthening the economic base of central North Dakota.

Continuing to establish the west-central region of North Dakota as an important producer of alternative energy sources, such as wind, may spur the development of wind-related businesses in the area, in turn contributing to the economic growth in the region.

7.2.3 Mitigative Measures

Socioeconomic impacts associated with the Project will be primarily positive, with an influx of wages and expenditures made at local businesses during Project construction and an increase in the counties' tax base from the construction and operation of the wind turbines and associated infrastructure. In addition, lease payments paid to landowners will offset potential financial losses associated with removing the land from agricultural production.

7.3 Land Use

7.3.1 Description of Resources

Land use within the project site is rural/agricultural, primarily used for cultivating crops and grazing cattle. None of the area is within the Hebron or Glen Ullin city limits or within an area of military installation. The development of the Clean Energy #1 Wind Project will not displace any residences or existing or planned industrial facilities. Wind turbines will be sited a minimum of 1,400 feet from occupied residences.

Based on a review of aerial photographs, land use database information, database information, and visits, approximately 57 percent of the Project site is grassland/herbaceous. The majority of the grasslands appear to be native prairie (WEST 2011). Twenty-seven percent of the site is used for cultivation and grazing purposes. Approximately nine percent of the site is cropland and hay land. Approximately 0.08 percent of the site is wetland or open water. Table 7.3–1 identifies current land use based on the National Land Cover Dataset.

Table 7.3-1 Major Habitats and Their Relative Abundance in the Project Site

Habitat	Acreage	Percent of Project Site
Mixed Forest	2	0.01%
Evergreen Forest	4	0.03%
Open Water	10.4	0.09%
Developed, Low Intensity	9.6	0.08%
Emergent Herbaceous Wetlands	29	0.2%
Shrubland	28	0.2%
Woody Wetlands	54	0.5%
Deciduous Forest	93	0.8%
Developed, Open Space	392	3.3%
Pasture/Hay	1119	9.5%
Cultivated Crops	3343	28%
Grassland/Herbaceous	6749	57%

7.3.2 Impacts

The development of the Project will not result in a significant change in land use. The area would retain its rural character. Wind turbines would be sited a minimum of 1,400 feet from occupied residences. At other wind developments in the upper Midwest, landowners frequently plant crops and/or graze livestock to the edge of the access roads and turbine pads. Wind farm access roads will be 16 to 23 feet wide and low profile, so they can be easily crossed by farming equipment. ACE will work closely with the landowners in locating access roads to minimize land use disruptions to the extent possible. Considerations will be taken to locate access roads to minimize impact on current or future row crop agriculture and environmentally sensitive areas. During the construction of the wind power facilities, additional areas may be temporarily disturbed for contractor staging and power lines. These areas will be graded to original contour and if necessary reseeded with appropriate vegetation.

The permanent site layout has not been determined, but a facility generating up to 100 MW of energy would result in a conversion of approximately 13 acres of land for the turbines, 3 acres for an O&M Facility, and up to 51 acres for access roads. Approximately two temporary lay down areas will be required during Project construction. The exact size and location of the areas affected will be determined prior to construction. There is limited literature available on the effect of wind farms on property values. A 2002 study of a proposed wind farm in Kittitas County, Washington, indicated that the proposed wind farm will not negatively impact property values in the vicinity, as did a 2005 study that reviewed property transactions in the vicinity of wind farms in the State of Wisconsin (Poletti and Associates, 2005; EcoNorthwest, 2002). A 2003 study that reviewed sales data for properties in the vicinity of wind farms (Sterzinger et al., 2003) showed a small positive correlation in the value of properties sold within 5 miles of wind

developments when compared to properties sold in comparable communities. A 2006 study done on the potential impacts of the visibility of wind turbines on property values in Madison and Oneida Counties, New York, and Wayne and Somerset Counties, Pennsylvania, found no measurable effects of the presence of turbines in the viewshed on property values (Hoen, 2006). No significant effects (either positive or negative) on property values are anticipated as a result of the proposed Project.

7.3.3 Mitigative Measures

ACE is working to minimize land use disruptions and impacts to environmentally sensitive areas to the extent possible. Operation of the wind farm will not change the land use in the Project site. The proposed land use would not involve any ongoing industrial use of non-renewable resources or emissions into the environment.

7.4 Public Services

7.4.1 Description of Resources

Local Services

The Project is located in a sparsely populated, rural area in west-central North Dakota. There is an established transportation and utility network that provides access and necessary services to light industry, small cities, homesteads, and farms existing near the Project site. The closest town to the Project site is the City of Hebron. The city has recreational facilities such as a movie theater, , public library, pool, parks, an elementary and high school, and museums (Hebron, 2011). There are also several local civic organizations and retail service facilities and institutions (Hebron 2011).

The city of Glen Ullin is approximately 8 miles south of the Project site. The city has recreational facilities such as parks, baseball and softball fields, skate parks, and a golf course (Glen Ullin 2011). The Glen Ullin Municipal Airport is located just west of Glen Ullin and has one runway (Glen Ullin 2011). Several retail, food, and lodging amenities are available (Glen Ullin 2011).

Electrical Service

One electric utility corridor is located within the Project site (see Exhibit 1). ACE will adhere to county and state setbacks to avoid impacts to the transmission line.

Roads

County and section line (two-track) roads characterize the existing roadway infrastructure in and around the Project site. Highway 49 runs east through the Project site and interstate 94 runs approximately 5 miles south of the Project's southern boundary.

Traffic

In general, the state highways near the Project site carry higher levels of traffic for rural North Dakota, but represent only a fraction of the capacity of the roadways. Additional county and township roads run through the Project site.

Water Supply

Townships typically have limited public infrastructure services, with homes using septic systems and water wells for their household needs.

Telephone, Fiber Optic, and Microwave Communications

In 2011, Comsearch completed a microwave telecommunication study to assess the presence of microwave beam paths in Clean Energy #1 Project areas. There are currently six microwave beam paths that cross the project area, shown in Exhibit 4. Turbines will be sited to avoid impacts to microwave communication in the area.

A number of telephone lines serve residences in the Project area.

7.4.2 Impacts

The Project is expected to have a minimal effect on the existing services and infrastructure. The following is a brief description of the impacts that may occur during construction and operation of the Project.

Local Services

No impact is expected to local services.

Electrical Service

The Project will require electrical station service from the proposed MP substation when the Project is not generating electricity.

Roads

Constructing the Project will require approximately 19 miles of access roads. In addition, during operation of the Project, the access roads will be used by operation and maintenance crews while inspecting and servicing the wind turbines. One road will be required for each turbine string. The permanent access roads will be approximately 16 to 23 feet wide to accommodate construction and maintenance equipment, and will have a low profile to allow cross-travel by farm equipment.

Traffic

The maximum construction workforce is expected to generate approximately 20 to 30 additional vehicle trips per day. Using any combination of state and county highways and other township roads throughout the Project site, the traffic impacts are considered negligible. Since many of the area roadways have minimal average daily traffic (ADT) currently, the addition of 20 to 30 vehicle trips represent a large percentage increase (and likely would be perceptible), but would still be less than seasonal variations such as autumn harvest. The capacity of any route and service level to the traveling public would not be impacted.

Truck access to the Project site is served by Interstate 94. From I-94, Highway 49 will serve as the primary truck access into the Project site. Specific additional truck routes will be dictated by the location required for delivery. Additional operating permits will be issued by the state, county, and/or township for oversized truck movements.

Water Supply

Construction and operation of the Project will not significantly impact the water supply. No wells are required to be abandoned for the Project. The Project will not require appropriation of surface water or permanent dewatering; temporary dewatering of groundwater may be required during construction of turbine foundations.

Telephone, Fiber Optic and Microwave Communications

Construction and operation of the Project will not impact telephone and/or fiber optic service to the Project site. There are currently six microwave beam paths that cross the project area, shown in Exhibit 4. Turbines will be sited to avoid impacts to microwave communication in the area.

7.4.3 Mitigative Measures

Construction and operation of the wind farm Project will be in accordance with all associated federal and state permits and laws, as well as industry construction and operation standards. Due to the minor impacts expected on the existing infrastructure during Project construction and operation, extensive mitigation measures are not anticipated.

Local Services

No impact to local services is anticipated, and no mitigation is required.

Electrical Service

No additional electric service is required for the Project. No additional mitigation is necessary.

Roads

ACE is working closely with the landowners to locate access roads to minimize land-use disruptions to the extent possible.

Traffic

No impacts are anticipated; as such no mitigation is necessary.

Water Supply

In the event wells are abandoned, they will be sealed as required by North Dakota law. If temporary dewatering of groundwater is required during construction activities, discharge of dewatering fluid will be conducted under the requirements of the National Pollutant Discharge Elimination System (NPDES) permit and Storm Water Pollution Prevention Plan (SWPPP).

Telephone, Fiber Optic and Microwave Communications

Utilities Underground Location Center will be contacted prior to construction to locate and avoid underground facilities. To the extent Project facilities cross or otherwise affect existing telephone or fiber optic lines or equipment, ACE will enter into agreements with service providers so as to avoid interference with their facilities.

Since no impacts to microwave or land based telecom systems are anticipated, no mitigation should be required.

7.5 Human Health and Safety

7.5.1 Description of Resources

Air Traffic

There are nine airports within 25 miles of the Project site. See Table 7.5–1 for a description of their locations, elevations, and runway information (FAA 5010 2009).

Table 7.5-1 Airports within 25 Miles of the Project Site

Airport Name	ND City	ND County	Distance[a]	Runway Information[b]	Runway Elevation (feet) [c]
Beulah	Beulah	Mercer	16.5	Asphalt	1791
Minnkota	Center	Mercer	24.3	Paved	2110
Glen Ullin Regional	Glen Ullin	Morton	16.3	Asphalt	2089
Fitterer's Strip	Glen Ullin	Morton	14.5		2180
Brecht Strip	Golden Valley	Mercer	24.8	Grass/Sod	1990
Sakakawea Medical Center (Heliport)	Hazen	Mercer	22.1		1756
Mercer County Regional	Hazen	Mercer	22.3	Asphalt	1813
Chase Airstrip	Hebron	Morton	6		2140
Richardton	Richardton	Stark	22.3	Grass/Sod	2492

[a] Distance in miles from the nearest portion of the Clean Energy #1 Wind Project boundary.

[b] Runway surface type and condition.

[c] Elevation in feet at the highest point on the centerline of the useable landing surface. Measured to the nearest foot with respect to mean sea level (MSL).

Electromagnetic Fields

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 (wire). EMF can occur indoors and outdoors. However, there are no discernible health impacts from power lines. Turbines will be no closer than 1,400 feet from occupied residences.

Hazardous Materials/Hazardous Waste

The site is located in a relatively rural area of west-central North Dakota. Hazardous wastes from large industrial or commercial activities are not likely. Potential hazards may exist in rural areas from old gasoline facilities, landfill sites, and private activities.

A Phase I Environmental Site Assessment (ESA) of the Project site is being conducted to identify any Recognized Environmental Conditions (RECs) that may exist.

Security

The Project site is located in an area that has a low population density. Construction and operation of the Project will have minimal impacts on the security and safety of the local populace.

7.5.2 Impacts

Air Traffic

The installation of wind turbines creates a potential for air traffic collision. If site conditions require, aboveground electrical collection lines are expected to be similar to distribution lines that are already present (located along the edges of fields and roadways), and the wind turbines and meteorological towers would be visible from a distance, and will have lighting and markings that comply with FAA requirements. In addition, the FAA's review will include evaluation of any potential interference with air traffic.

The FAA's DoD Preliminary Screening Tool was reviewed for a preliminary evaluation of the potential impacts of obstructions on Air Defense and Homeland Security radars (Long Range Radars), Weather Surveillance Radar-1998 Doppler radars (NEXRAD), and military operations. According to the DoD Preliminary Screening Tool, there are no anticipated impacts related to Long Range or NEXRAD radars associated with the Project. A preliminary review of the Project via the DoD Preliminary Screening Tool for military operations indicates the Project does not have any likely impacts to military airspace (FAA 2011).

Electromagnetic Fields

The Project will have no impact to public health and safety due to EMF.

Hazardous Materials/Hazardous Waste

The Phase I ESA will be used to minimize risk associated with potential RECs, as defined by the American Society for Testing and Materials E 1527 – 05 (ASTM) standard that may pose a threat to human health and safety. Significant findings are not anticipated due to the known historic uses of the property.

Security

Project construction and operation will have minimal impacts to security and safety of the local community.

7.5.3 Mitigative Measures

Air Traffic

ACE will seek approval from FAA for the final turbine layout. Wind turbines and meteorological towers will have lighting and markings according to FAA requirements that minimize potential for air traffic impacts.

Electromagnetic Fields

ACE will follow "prudent avoidance" methods to EMF exposure, such as encouraging conservation, encouraging distributed generation, continuing to monitor EMF research, encouraging utilities to work with customers on household EMF issues, and providing public education (White Paper 36).

Hazardous Materials/Hazardous Waste

Since no significant findings are anticipated, no mitigation is proposed at this time.

Security

The following security measures will be taken to reduce the chance of physical and property damage, as well as personal injury, at the site:

- The towers will be placed 250 feet from road ROW in Morton County, and 1,400 feet from occupied dwellings. These distances are considered to be safe based on developer experience and are consistent with the required local setbacks. They also serve to reduce noise.
- Security measures will be taken during the construction and operation of the Project, including temporary and permanent (safety) fencing, warning signs, and locks on equipment and wind power facilities.
- Turbines will sit on solid steel enclosed tubular towers in which all electrical equipment will be located, except for the pad-mounted transformers and switches. Access to towers is only through a solid steel door that will be locked when not in use.
- Where necessary or requested by landowners, ACE will construct gates or fences such as those around the existing Bison substation.

7.6 Noise

7.6.1 Description of Resources

There are approximately 22 residences located either within the Project boundary or within a 1 mile of the boundary. One church and one cemetery are located within the Project boundary. There are no other noise sensitive land uses such as schools within the study area.

7.6.2 Impacts

Sound is generated by wind turbines due to turbulence at the blade tips, from mechanical systems in the hub or nacelle (which radiates throughout the structure), and from transformers at the base of the turbine mast. Blade noise increases with wind speed until maximum blade rotational speed is reached, which usually occurs when wind speeds reach 8-10 meters per second at the turbine hub.

Cadna-A, an acoustical analysis software package designed for evaluating environmental noise from stationary and mobile sources, was used to evaluate Project-related noise. Cadna-A is a three-dimensional noise model based on ISO 9613, "Attenuation of Sound during Propagation Outdoors," adopted by the International Standards Organization (ISO) in 1996. This standard provides a widely-accepted engineering method for the calculation of outdoor environmental noise levels from sources of known sound emission.

Wind turbine noise emissions data were provided from a number of turbine manufacturers. Modeled noise levels were based on the anticipated maximum sound power level of 108.5 dBA. Noise emissions for maximum operating conditions were evaluated based on the spectral noise emissions at 8 mps.

There is no single controlling environmental noise regulation or guideline body pertaining to the Project. For informational purposes ACE has chosen a benchmark noise level of 50 dBA as the criteria for the noise evaluation.

The minimum single turbine setback distance calculated where an exceedance of the 50 dBA benchmark would no longer occur is 230 meters (755 feet) for the worst case turbine. Turbines will be sited according to the siting plan in Section 4.1.

7.6.3 Mitigative Measures

Impacts to nearby residents and other potentially affected parties in terms of noise will be taken into consideration as part of the actual siting of the turbines.

7.7 Visual Impacts

7.7.1 Description of Resources

The topography of the Project characterized by rolling plains and drainages (WEST 2011). Sandstone buttes or outcrops re also common in this region (WEST 2011). Elevations range between 641 and 744meters above sea level. A topographic map of the Project site is shown in Exhibit 3.

Within the Project site the dominant land type is grassland (WEST 2011). The most widely grown crops in the Project area are wheat, corn, and sunflowers. Wetland areas are dominated by cattails and sedges; however, there are wetland areas that are in agricultural production as well. A mix of deciduous and coniferous trees planted for windbreaks typically surrounds

farmsteads. Generally, these forested areas are isolated groves or windrows established by the landowner/farmers to prevent wind erosion and shelter dwellings. Typical tree species include cottonwood, aspen, green ash, box elder, and American elm. The site is located in the Middle Knife River, Lower Knife River, and Haymarsh Creek watersheds which empty into the Upper Elm Creek, Beaver Creek, Haymarsh Creek, and Wilson Creek. Isolated wetlands are scattered across the Project area. Exhibit 10 illustrates the typical landscape in the site.

7.7.2 Impacts

The placement of turbines will have an effect on the visual quality of the site and in nearby areas. However, discussion of the aesthetic effect of the proposed wind farm is based on subjective human response. The Project would have a combination of effects on the visual quality/rural character of the area. For some viewers, the Project could be perceived as a visual intrusion, characterized as metal structures intruding on the natural aesthetic value of the landscape. Given that rural nature of the Project area, the , turbines associated with the Clean Energy #1 Project will be visible, but not overly intrusive on the horizon.

For other viewers, wind projects have their own positive aesthetic qualities, distinguishing them from other non-agricultural land uses. First, the Project will not generate much traffic or significantly increase day-to-day human activity in the area. Therefore, the Project site will retain the rural aesthetic and remote characteristic of the vicinity. Second, although "industrial" in form and purpose, turbines are essentially "farming" the wind for energy. The proposed land use will not involve any ongoing industrial use of non-renewable resources or emissions into the environment. Although the turbines are high-tech in appearance, they are compatible with the rural and agricultural heritage of the area.

Visual impacts will be most evident to people traveling north and south along Highway 49, and east and west along County Road 140. These impacts will affect the rural visual quality of the landscape and the experience of the persons utilizing those areas. While the turbines in background views of highway travelers will affect the visual characteristics of the landscape, the same could be said of any human habitation or activity in the vicinity, and the presence of turbines may be less intrusive than many such activities. Nonetheless, this may be an impact that some viewers perceive to be negative.

7.7.3 Mitigative Measures

The following are proposed mitigative measures:

- Turbines will be illuminated to meet the minimum requirements of FAA regulations.
- Existing roads will be used for construction and maintenance where possible. Road construction will be minimized.
- Access roads created for the wind farm facility will be located on gentle grades to minimize visible cuts and fills.

7.9 Recreational Resources

7.9.1 Description of Resources

Recreational opportunities in Morton and Mercer counties include camping, hiking, biking, swimming, hunting, fishing, and nature observation. Review of state and federal databases indicates that no registered national wildlife refuges, state wildlife management areas (WMA), state game refuges, game management areas, nature preserves, county parks, or formal recreational areas are present within the Project site. No lakes with public boat access are located within the Project site. WMAs within 20 miles of the Project include the Storm Creek WMA and North Beulah Mine WMA.

The North Dakota Game and Fish sponsors Private Land Open to Sportsman (PLOTS) to protect, conserve, and enhance fish and wildlife populations for public use. An area of PLOTS land is located in Mercer County, west of Hwy 49 and north of 30th Street SW, but will not be permanently impacted.

7.9.2 Impacts

In general, recreational impacts will be visual in nature and limited to individuals using public or private property in the Project site for hiking, hunting, fishing, or nature observation. See Section 7.7 for detailed discussion of anticipated visual impacts and proposed mitigative measures. Depending on the turbine layout, it is anticipated that supporting infrastructure (e.g., access roads, collector lines, etc.) will not impact public lands. No other significant impacts to recreational resources are anticipated.

7.9.3 Mitigative Measures

To the extent practicable, supporting infrastructure will be placed in a manner to avoid impacts to public land and recreation areas. Where it is not possible to avoid impacts to these lands, alternative construction methods, such as directional boring, will be considered to minimize impacts. Since it is not anticipated that any significant recreational resources will be removed from service by implementation of the Project, no adjacent land will be converted or dedicated to recreational use or wildlife management. No other mitigation is anticipated.

7.10 Effects on Land-Based Economies

7.10.1 Description of Resources

Agriculture/Farming

The majority of the site is native grassland, cultivated farmland, and pasture, as shown in Exhibit 7. Cultivated crops and pasture land comprise approximately 27 percent of the Project site. Native grasslands comprise approximately 58 percent of the land. Approximately 36 percent of the land in the Project site is used for agricultural purposes.

According to the 2007 Census of Agriculture, Mercer County is ranked 51st overall in agricultural products sold in North Dakota, and Morton County is ranked 22nd. Combined, Morton and Mercer counties contain 1,291 farms (455 in Mercer County and 836 in Morton County), of which the primary commodity is crops, primarily wheat. Cattle are the primary livestock in the counties. According to the 2007 Census of Agriculture, the amount of land in farms decreased nine percent in Morton County and decreased five percent in Mercer County. The market value of production in Mercer County in 2007 was approximately $40,068,000. Crop sales account for approximately 61 percent of the total value. The market value of production in Morton County in 2007 was approximately $117,251,000. Crop sales account for approximately 52 percent of the total value.

Crops are a large percentage of the counties' market value so prime farmland is important in production. Prime farmland is the land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. The NRCS has two classifications for prime farmland. The first is where all areas of the soil series are classified prime farmland. The second is where only the drained areas of the soil series are prime farmland. The NRCS also identifies farmland of statewide and local importance, which is land that is important for the production of food, feed, fiber, forage, and oilseed crops. Generally, additional farmlands of statewide or local importance include those that are nearly prime and that produce high yields of crops in an economic manner when treated and managed according to acceptable farming methods. Some may produce as high a yield as prime farmland soils if conditions are favorable. Table 7.10-1 lists the soils considered Prime Farmland and soils of statewide or local importance within the Project site. Exhibit 8 illustrates the prime farmland soil distribution in the Project site.

Table 7.10-1 Prime Farmlands Mercer and Morton Counties

Soil Unit	All Areas are Prime Farmland	Soil of Statewide/ Local Importance	Prime Farmland Only When Drained
Arnegard loam, 0 to 6 percent slopes	X		
Grail silty clay loam, 0 to 6 percent slopes	X		
Amor-Arnegard loams, 0 to 3 percent slopes		X	
Amor-Shambo loams, 3 to 6 percent slopes		X	
Amor loam, 3 to 9 percent slopes		X	
Belfield-Grail silty clay loams, 0 to 2 percent slopes		X	
Belfield silt loam, 0 to 6 percent slopes		X	
Farland silt loam, 0 to 9 percent slopes		X	
Flaxton-Williams complex, 3 to 6 percent slopes		X	

Soil Unit	All Areas are Prime Farmland	Soil of Statewide/ Local Importance	Prime Farmland Only When Drained
Grail-Belfield silty clay loams, 2 to 6 percent slopes		X	
Moreau silty clay, 0 to 6 percent slopes		X	
Morton-Cabba silt loams, 3 to 9 percent slopes		X	
Morton-Farland silt loams, 3 to 6 percent slopes		X	
Parshall fine sandy loam, 0 to 2 percent slopes		X	
Reeder-Farnuf loams, 3 to 6 percent slopes		X	
Regent-Savage silty clay loams, 3 to 9 percent slopes		X	
Regent silty clay loam, 0 to 9 percent slopes		X	
Sen-Chama silt loams, 3 to 6 percent slopes		X	
Sen silt loam, 3 to 6 percent slopes		X	
Shambo loam, 0 to 6 percent slopes		X	
Tally-Parshall fine sandy loams, 0 to 6 percent slopes		X	
Vebar-Parshall fine sandy loams, 0 to 6 percent slopes		X	
Vebar fine sandy loam, 3 to 6 percent slopes		X	
Williams loam, 3 to 9 percent slopes		X	
Colvin silt loam, 0 to 1 percent slopes			X

There are 11 occupied residences, within the preliminary Project boundary. These homes are identified on Exhibit 4.

According to the North Dakota State Water Commission Water Permit Retrieval System, there are no properties with an irrigation permit in the townships affected by the Project.

Woodlands

Economically important forestry resources are not found in the Project site. Woodlands are primarily associated near homes in the form of woodlots and windbreaks within the Project site. Woodlands within the Project site are depicted in Exhibit 7.

7.10.2 Impacts

Agriculture/Farming

No impacts are anticipated to animal health and safety due to the construction or operation of the wind farm and associated facilities. Except for the physical locations of the turbines and access roads, all the land surrounding the facility will be available for grazing.

Actual impacts to agriculture production will be determined once turbine and road locations are finalized. Each turbine will impact approximately 0.25 acre of land. Approximately 13 acres of land will be permanently impacted due to turbine placement. Roads will be 16 to 23 feet wide and will vary in length. Currently, road impacts are estimated at 52 acres, which is based on the worst case scenario that all access roads are 23-feet-wide. An O&M Facility will permanently impact approximately 3 acres. Approximately 10 acres of land will be temporarily impacted for contractor staging and lay-down areas. It is possible that some of this land is not currently used for agricultural purposes, thus the actual impacts to agriculture production cannot be determined until turbine and road locations are finalized.

Approximately 1.4 percent of the site includes prime farmland soils. The prime farmland soils are scattered throughout the Project area(Exhibit 8). The final layout will site only a limited number of turbines and facilities in prime farmlands, and the prime farmlands affected will be a fraction of a percent of all prime farmland in Morton and Mercer Counties.

Using a scenario with all turbines and access roads located in prime farmland, the overall impact to prime farmlands in the counties would have a negligible impact on agricultural production. When considering the impact on production for the top five crops in Morton and Mercer Counties, if all the turbines and access roads impacted prime farmland, the total area would affect less than 0.1 percent of the yearly production for those commodities (based on yields reported in 2007). As noted earlier, wind lease payments will provide farmers with a supplemental source of income, thus helping to support the continuation of farming in Morton and Mercer counties.

No turbines will be placed within 1,400 feet of occupied residences. Family farms will be affected in two ways: from the loss of land associated with the construction of the turbines and access roads, and by the lease payments that will supplement the farms' income. The extent of the impact will not be known until final turbine locations are determined in conjunction with the landowners.

No impacts to irrigation are anticipated.

Woodlands

Since a majority of the woodlands on the Project site are associated with homesteads and windbreaks, no impacts are anticipated. Woody draws will be avoided to the extent practicable.

7.10.3 Mitigative Measures

Agriculture/Farming

The wind turbines and access roads will be located to avoid the most productive farmland (prime farmland) as much as possible. Only land for the turbine and access roads will be unavailable for crop production. ACE will work with landowners to minimize impacts to their land. Once the wind turbines are constructed, all land surrounding the turbines can still be farmed or grazed.

Woodlands

No impacts are anticipated to woodlands. If unavoidable impacts to woodlands arise, then individual trees will be replaced at a ratio of 2:1 and plantings will be monitored for three years, per ND PSC requirements.

7.11 Soils

7.11.1 Description of Resources

The soils in the Mercer County Project area are largely composed of two main soil associations: Williams-Belfield-Amor and Cabba-Rhoades. The Williams-Belfield-Amor association was formed in glacial till, loess over glacial till, old alluvium, and material weathered from bedrock on uplands. The Cabba-Rhoades association was formed in material weathered from bedrock and alluvium on uplands. In addition, there is a small lobe of Rhoades-Belfield-Moreau association found along the western edge of the site in Mercer County. The surface soil types that comprise these associations are mapped in Exhibit 9.

The soils in the Morton County Project area are largely comprised of four main soil associations: Daglum-Belfield-Rhoades-Harriet Association, Vebar-Parshall Association, Telfer-Lihen-Parshall Association, and Chama-Golva-Cabba Association. The surface soil types that comprise these associations are mapped in Exhibit 9.

7.11.2 Impacts

The impact to soils in the Project site will be limited to areas removed from agricultural production, either for turbines and associated structures, or for road construction. Both of these impacts will be relatively minor. Turbine foundations are comparatively small, and access roads will be single lane roadways. In isolated cases, grading may be required for roadway construction. Exact impact acreages will not be known until turbine siting is finalized, but expected impacts will be approximately 1.25 acres per turbine for access roads and turbine foundations. The total impact for a maximum of 50 turbines and the associated access roads is expected to be approximately 64 acres. Areas to be temporarily impacted for contractor staging and lay-down areas will be determined prior to construction. Since land immediately adjacent to

the turbines and access roads can be used for pasture or row crops, the Project will only impact those lands used directly for turbine foundation or roadway construction. A discussion of impacts to prime farmland soils is in Section 7.10.

The potential for wind and water erosion exists in the soil types found on the site. Construction practices will minimize soil erosion during and after turbine construction, and impacts are not expected to be measurable.

7.11.3 Mitigative Measures

Wind and water erosion are potential hazards for the soils found on the site. To minimize erosion during and after construction, BMPs for erosion and sediment control (SN 19389 9/99) will be utilized. Since turbines will not be located on significant slopes, only non-structural practices should be required. These practices include: temporary seeding, permanent seeding, mulching, filter strips, erosion blankets, grassed waterways, and sod stabilization. Topsoil will be segregated if cuts are made during construction and reapplied after final contours have been graded.

7.12 Geologic and Groundwater Resources

7.12.1 Description of Resources

Morton County sits atop sedimentary rocks from the Cambrian period through the Quaternary Period. The surficial deposits of the county are from the Fox Hills, Golden Valley, Hell Creek, Cannonball, Sentinel Butte, and Ludlow Formations (Morton 2000). Most soils in Morton County formed on these upper Cretaceous and Tertiary formations, consisting of consolidated sand, silt, and clay. Other soils formed atop glacial till and alluvium deposited after the region was glaciated (Morton 2000). Gravel for road building is also a mineral resource present in the County.

One lignite coal bed is present within the Clean Energy #1 Project boundary, but is not considered economically viable for mining (Exhibit 11). North Dakota Geological Society estimates that the deposit contains approximately2.8 million tons of minable lignite. In contrast, the four operating North Dakota coal mines recognize a minimum volume of approximately 500 million tons of lignite as necessary for an economically viable mining operation with adjacent direct-feed power plant. If lignite deposits of this volume become economically viable at some future time, ACE estimates that the disposal in place of wind turbine foundations is not a significant cost and could be accomplished at the end of a turbine's useful life in order to promote lignite production.

Mercer County is part of the Rolling Soft Shale Plains Land Resource Area of the Northern Great Plains. The part of the count north of the Knife River is mostly a glaciated upland plain interspersed with residual uplands. Immediately south of the Knife River are wind and water-

deposited sand and silt. The southwestern part of the county is a residual upland plan that has remnants of glacial till deposits (Wilhelm 1978).

Groundwater resources in the vicinity of the Project site are generally derived from the Fox Hills and Elm Creek Aquifer (Croft 1973). The State Water Commission database identifies various types of wells within the Project boundary. Domestic groundwater supply appears to be fairly accessible in the Project site and is dependent on the relative occurrences of sand and gravel aquifers at any given area.

Groundwater likely occurs at shallow depths locally, as evidenced by the presence of multiple isolated wetlands in the Project site. Flow direction of the water table aquifer varies greatly and is controlled primarily by topography.

7.12.2 Impacts

Impacts to groundwater resources are not anticipated as water supply needs will be quite limited. It is probable that operations and maintenance water requirements will be satisfied with a single domestic-sized water well. Depending on the location of wind turbines and supporting infrastructure, it is possible that sand and gravel resources could be made unavailable for development.

7.12.3 Mitigative Measures

Wind turbine locations will not impact the use of existing water wells because the turbines will not be sited within 1,400 feet of occupied structures. Wind turbines will be sited to avoid sand and gravel resources identified in the Project site. Where sand and gravel resources cannot be avoided, ACE will coordinate with landowners regarding impacts and any necessary mitigation. No other mitigation is anticipated to be necessary.

7.13 Surface Water and Floodplain Resources

7.13.1 Description of Resources

Surface water and floodplain resources for the site were identified by reviewing U.S. Geological Survey topographic maps, Flood Insurance Rate Maps (FIRM) produced by the Federal Emergency Management Agency (FEMA), and USFWS National Wetlands Inventory (NWI) data. The major surface waters located within the site include wetlands (discussed in detail in Section 7.14), and several intermittent streams. These water resources are shown in Exhibit 10.

The Project site lies within both the Knife River sub-basin and the Lower Heart River sub-basin of the Cannonball River basin, Heart River basin, and Knife River basin, which is part of the Missouri River watershed. Streams in the area flow primarily to the west and south. The topography of the area ranges from gently to steeply sloped and includes swales and drainageways, with wetlands primarily associated with streams in the area.

Review of FEMA floodplain maps indicates that the site and its surroundings are in an area with possible, but undetermined flood hazards; no flood hazard analysis has been conducted.

7.13.2 Impacts

Construction of the wind turbines, transformer pads, and access roads will disturb land within the Project site. The wind turbines will be built on uplands; this will avoid intermittent streams and wetlands located in the lower positions in the landscape. Access roads to the turbines will be built to avoid impacts to surface waters.

The Project will not impact known floodplain areas.

7.13.3 Mitigative Measures

A wetland delineation using USACE standard methodology will be completed prior to construction. The Project may temporarily impact jurisdictional waters of the United States and may require USACE permits. A Section 401 Water Quality certification may be required from the State of North Dakota.

Access roads constructed adjacent to wetlands or intermittent streams and drainageways will be designed in a manner so runoff from the upper portions of the watershed can flow unrestricted to the lower portion of the watershed. An NPDES permit application will be prepared by ACE and submitted to the North Dakota Department of Health prior to the construction of the wind turbines and access roads.

7.14 Wetlands

7.14.1 Description of Resources

The potential for wetlands within the Project site were identified by reviewing NWI maps. No formal wetland delineations have yet been completed. The vast majority of wetlands on the site are freshwater ponds (see Table 7.14-1). No riverine or floodplain wetlands were found on the site. Wetlands will be field-verified during final siting and permanent impacts to wetlands will be avoided to the extent practicable.

Some wetlands in farmed areas may have been drained for agriculture, but this practice appears uncommon in this area. The wetlands within the site are palustrine and lacustrine systems. See the NWI Map in Exhibit 10 for locations of wetlands.

Table 7.14-1 NWI Wetland Types and Acreages

Wetland Acreages (by type)		
Cowardin Classification	Count	Acres[1]
Palustrine Aquatic Bed Semipermanently Flooded – Impounded (PABFh)	34	22.6
Palustrine Emergent Temporarily Flooded (PEMA)	2	1.5

Wetland Acreages (by type)		
Cowardin Classification	Count	Acres[1]
Palustrine Emergent Temporarily Flooded – Impounded (PEMAh)	2	0.3
Palustrine Emergent Seasonally Flooded (PEMC)	4	2.3
Palustrine Emergent Seasonally Flooded – Impounded (PEMCh)	11	1.7
Palustrine Emergent Semipermanently Flooded – Impounded (PEMFh)	1	0.7
Palustrine Unconsolidated Bottom Semipermanently Flooded – Excavated (PUBFx)	7	0.9

[1] Wetland acreage is calculated using USFWS NWI data.

7.14.2 Impacts

Wind turbines will be built on upland areas, and thus avoiding wetlands on the lower areas of the landscape. Access roads and supporting facility features will be designed to minimize impacts on wetlands to the extent practicable. A wetland determination was completed in June, 2011.

7.14.3 Mitigative Measures

Wetlands will be avoided to the extent practicable during the construction phase of the Project. If impacts to USACE jurisdictional wetland are unavoidable, then a Section 404 permit application will be submitted to USACE. Permanent impacts to jurisdictional wetlands and waters will be mitigated according to USACE requirements. However, it is anticipated that any impacts to USACE jurisdictional waters will be temporary and as a result, will not require compensatory mitigation.

ACE will use BMPs during construction and operation of the Project to protect topsoil and adjacent wetland resources and to minimize soil erosion. Practices may include containing excavated material, protecting exposed soil, stabilizing restored material, and revegetating disturbed areas with native species.

7.15 Vegetation

7.15.1 Description of Resources

The Project is located in the Northwestern Great Plains Ecoregion (EPA, 2009), which encompasses the Missouri Plateau portion of the Great Plains. This ecoregion is semiarid with rolling plains and occasional buttes. Native grasslands are largely replaced by spring wheat, alfalfa, and rangeland areas.

The native vegetation is transitional between tall and shortgrass prairie. The common plants in the tallgrass/midgrass prairie include western wheatgrass, green needlegrass, big and little bluestem, blue grama grass, and forbs such as purple cornflower, lead plant, and pasque flower. There are numerous temporary and seasonal wetlands with vegetation that includes cattails, cordgrass, rushes, and sedges. Native tree cover in the Project site primarily would have been

limited to lake and river margins and would have been dominated by aspen, cottonwoods, and bur oaks.

As a result of settlement in the 1800s, the area was converted into farmland and rangeland. Settlement and farming activities were dependent on slope, presence of rocks in the soil, and wetlands. During this process, the wetland areas were frequently ditched and drained. Trees were planted by landowners for wind breaks (windrows and homestead groves) or were established by natural means, such as being transported to the area by animals, birds, or wind.

Based on a review of aerial photographs, land use database information, USFWS database information, and a visit to the Project site, it was determined that the majority of the land area at the site is grassland. Table 7.3-1 in Section 7.3 identifies current land use in the Project site based on the USGS database. Fifty-seven percent of the land use at this site is grassland/herbaceous, some of which appear to be native, and primarily resulting from the presence of steep side slopes, hills, and buttes. The native grasslands include remnant native prairie of wide-ranging quality, dependent on grazing pressure and herbicide applications to control weed species. No lands within the Project site are known to be enrolled in the Conservation Reserve Program (CRP). CRP encourages farmers to convert environmentally sensitive acreage to vegetative cover. Farmers receive an annual rental payment for the term of the multi-year contract.

Approximately 28 percent of the Project site is used for cultivated crops and pasture/hay. Approximately 0.09 percent of the site is wetland or open water.

The principal crop in Morton and Mercer counties is wheat. Other crops include corn, oats, barley, sunflowers, and hay (USDA 2007). Grasslands are used for range and pasture of cattle. Heavily grazed range typically contains Kentucky bluegrass, quack grass, and brome grasses. Lightly grazed or undisturbed range contains native prairie species. CRP land is typically covered by brome grasses, orchard grass, and alfalfa. CRP may also be planted in native grasses such as big bluestem, little bluestem, and Indian grass. Land is typically put into CRP for 10-year cycles. Additional information on agriculture and farming can be found in Section 7.10.

The National Land Cover Dataset indicates 99 acres of forested or woody vegetation, amounting to 0.8% of the Project site. Generally, these woodland areas are adjacent to lake margins, isolated groves, or windrows established by landowners to prevent wind erosion and shelter dwellings. Typical tree species include cottonwood, aspen, green ash, box elder, and American elm.

There are no federal grasslands within the Project site. One tract of North Dakota School Trust Land is located within the Project site. No turbines or associated facilities are located on this property.

7.15.2 Impacts

The amount of vegetation that will be removed as a result of the Project will be determined once a site layout is finalized. It is anticipated that for a maximum 50-turbine project, there would be approximately a total of 64 acres of permanent impacts: 13 acres for the turbines, up to 51 acres for access roads and an additional 3 acres of land for an O&M Facility. Native prairies have been avoided to the extent practicable. Impacts to native prairie will affect less than 0.4 percent of the native prairie within the Project boundary. The vegetation will be permanently removed and replaced by wind turbines, access roads, transformers, and transmission lines. During the construction of the wind power facilities, additional area may be temporarily disturbed for contractor staging areas and power lines. Acres of land that will be temporarily impacted for contractor staging and lay down areas will be determined prior to construction. Temporarily disturbed areas will be reseeded per NRCS recommendations to blend with existing vegetation. Minimal impacts are anticipated to woodlands, shrubs, or wetland areas.

7.15.3 Mitigative Measures

ACE will work closely with the USFWS during micrositing to minimize impacts to vegetation within the Project site. ACE will conduct a pre-construction inventory of existing wetlands, native prairie, and woodlands. The preconstruction inventories will have varying levels of detail with the most specific detail in the vicinity of construction. These preconstruction inventory reports will be filed with the PSC prior to construction. ACE will work to avoid and minimize impacts to existing trees and shrubs. If impacts to individual trees and shrubs cannot be avoided, these resources will be mitigated at a ratio of 2:1 and new plantings will be monitored for three years.

If impacts to jurisdictional wetland are proposed, then a Section 404 permit application will be submitted to USACE. Permanent impacts to jurisdictional wetlands and waters will be mitigated according to USACE requirements.

ACE will use BMPs during construction and operation of the Project to protect topsoil and adjacent resources and to minimize soil erosion. Practices may include containing excavated material, protecting exposed soil, stabilizing restored material, and revegetating rangelands with native species.

7.16 Wildlife

7.16.1 Description of Resources

Information on the existing wildlife in the wind farm Project site was obtained from a variety of sources including observations during field visits and information from the North Dakota Game and Fish Department (GFD), North Dakota Parks and Recreation Department (NDPRD), and USFWS. Western EcoSystems Technology, Inc (WEST) conducted an evaluation of biological and avian resources in the Project wind resource area (Appendix A).

In addition, WEST conducted stick nest surveys for raptors within the Clean Energy #1 Project boundary. ACE may engage the services of a qualified biological resources consultant to perform a field survey for grouse leks prior to Clean Energy #1 construction for the purposes of documenting any potential impacts to grouse leks after construction and operation of wind turbines.

Wildlife in the Project site consists of birds, mammals, fish, reptiles, amphibians, and insects, both resident and migratory, which utilize the Project site habitat for forage, migratory stopover, breeding, and/or shelter. Species present in the Project area are associated with agricultural fields, pasture grasslands, and wetland areas. Common mammals in the Project area include raccoon, mink, skunk, weasel, white-tailed deer, coyote, red fox, badger, porcupine, and rabbit.

7.16.2 Impacts

Development of the wind farm, including the construction and operation of the Project, is expected to produce a minimal impact on wildlife. ACE has conducted, and will conduct, environmental studies of this potential site to aid in detailed placement of turbines, roads, and associated facilities to avoid or minimize impacts to wildlife and habitat. In the course of doing good business, ACE will implement many of the policies proposed by the American Bird Conservancy and other organizations for siting wind facilities.

WEST identified that the land cover within the Project site is not unique to the region and that it is unlikely that the characteristics of the Project would attract concentrations of bird or bat species. Numerous birds and bats will utilize the area. Raptors are likely to frequent the area. The presence of larger trees in woodlots provides habitat for the tree-nesting species and the grasslands provide nesting opportunities for ground-nesting birds.

The impact of the proposed Project on wildlife is expected to be minimal. There is potential for avian and bat collisions with facility turbines or meteorological towers. Additional impacts may include a small reduction in the available habitat that some of the wildlife uses for forage or cover. Operation of the wind farm will not change the existing land use.

7.16.3 Mitigative Measures

The following measures will be used, to the extent practicable, to help avoid potential impacts to wildlife in the Project site during selection of the turbine locations and subsequent development and operation:

- ACE has characterized the biological resources found in the Project area, including an assessment of threatened and endangered species, birds, and bats. This report (WEST, 2011) is attached in Appendix A.
- ACE is coordinating with USFWS regarding avian monitoring. ACE is also coordinating with the NDGFD to minimize impacts.
- ACE may perform field surveys for grouse leks in spring, 2012.

- ACE surveyed for raptor nests in September 2011, and identified one potential nest within the Project area. Ace will monitor all identified nests in order to prevent disturbance during construction activities to breeding and nesting species.
- ACE has conducted preconstruction inventories of wetlands, native prairies, and woodlands in the vicinity of proposed turbines, access roads, and associated facilities to minimize impacts at the site. Detailed follow up field surveys may be completed if necessary once final turbine siting is completed to assess the construction zone. These inventory reports will be filed with the PSC prior to Project construction.
- ACE is preparing an Avian and Bat Protection Plan and will implement the plan once complete.
- ACE will construct wind turbines using tubular monopole towers and turbines will be lit according to FAA requirements.
- ACE will avoid or minimize disturbance of individual wetlands or drainage systems during construction and operation of the Project. If impacts to wetlands occur, they are expected to be both temporary and minimal.
- ACE will protect existing trees and shrubs where practicable. If impacts are unavoidable, ACE will replace existing trees 2 inches or larger diameter at breast height (dbh) and shrubs taller than 6 feet at a 2:1 ratio at the site and will monitor plantings for three years.
- ACE will maintain appropriate water and soil conservation practices during construction and operation of the Project to protect topsoil and adjacent resources and to minimize soil erosion. To minimize erosion during and after construction, BMPs for erosion and sediment control will be utilized. These practices include: temporary seeding, permanent seeding, mulching, filter strips, erosion blankets, grassed waterways, and sod stabilization.
- ACE will revegetate non-cropland and pasture areas with seeding mix as recommended by the NRCS.
- ACE will inspect and control noxious weeds in the vicinity of the turbines, access roads, and associated facilities immediately after construction and periodically for the life of the Project.

ACE is committed to minimizing wildlife impacts within the Project site. ACE will design their facility to minimize avian impacts by avoiding high use wildlife habitat, using tubular towers to minimize perching, and minimizing infrastructure. ACE continues to consult with the USFWS and GFD regarding appropriate mitigation measures for wildlife impacts.

7.17 Rare and Unique Natural Resources

7.17.1 Description of Resources

The USFWS, NDGFD, and NDPRD were contacted to review the Project site for threatened and endangered species and unique habitats. ACE will meet with USFWS and NDGFD if necessary, to discuss the Clean Energy #1 Project and gather agency comments.

No federally-listed endangered, threatened, or candidate plant species are known to occur in the Project site. The USFWS identifies seven federally-listed threatened, endangered, or candidate wildlife species for Morton and Mercer counties (USFWS 2011, USFWS NDFO 2011) (see Table 7.17-1). Of these seven, the interior least tern, the piping plover, Sprague's pipit, and the whooping crane have the highest potential, however remote, of migrating or occurring in the Project site. Habitat for the other species is either completely lacking or is extremely limited in the Project site, with the exception of Sprague's pipit. Potential use of the Project site by these federally listed or candidate species is more completely reviewed in the attached biological resources Site Characterization Study (Appendix A).

Table 7.17-1 Federally-Listed Threatened and Endangered Species

Species	County	Status
Black-footed Ferret (*Mustela nigripes*)	Morton, Mercer	Endangered
Gray Wolf (*Canis lupus*)	Morton, Mercer	Endangered
Interior Least Tern (*Sternula antillarum*)	Morton, Mercer	Endangered
Pallid Sturgeon (*Scaphirhynchus albus*)	Morton, Mercer	Endangered
Piping Plover (*Charadrius melodus*)	Morton, Mercer	Threatened
Sprague's Pipit *(Anthus spragueii)*	Morton, Mercer	Candidate
Whooping Crane (*Grus americana*)	Morton, Mercer	Endangered

The Sprague's pipit is a small passerine bird of open grasslands (USFWS 2010, 2011b). According to the current range for Sprague's pipit, the Project area falls within the known breeding range. Larger blocks of grassland (greater than 320 acres) may be considered potential nesting habitat for the pipit. Minimizing impacts to grassland areas, especially native grasslands may limit potential impacts to this species.

Since habitat in the project includes native grassland and wetland areas, the project area could be used whooping cranes, least terns, and piping plovers. However, the project area habitat does not appear to be any more likely than other areas of North Dakota to attract these species. Therefore, risk to these species and other avian species does not appear to be higher here than in other parts of North Dakota. Mortality to these protected species is not likely. The Site Characterization Study provided in Appendix A provides the detailed risk analysis for the site.

The State of North Dakota maintains a list of 100 species of conservation concern. Several of these species have been documented near the Project area during Breeding Bird Surveys

conducted by the USGS as well as another wind facility study adjacent to the BIWRA. Impacts to many of these species can be avoided or minimized by focusing construction activities on cultivated landscapes.

The NDPRD maintains a Natural Heritage Inventory Database (NHID), which is the most complete source of data on North Dakota's rare, endangered, or otherwise significant plant and animal species, plant communities, and other natural features. In a response dated, March 24, 2011, the NDPRD stated that one rare species, *Ameiurus nautilus* (Yellow bullhead), had been documented in the Project area.

7.17.2 Impacts

No impacts to rare and unique resources are anticipated.

7.17.3 Mitigative Measures

No impacts are anticipated to rare and unique resources. A preconstruction inventory of existing native prairie, woodlands, and wetlands will be conducted in the Project site. ACE will avoid the resources identified to the extent practicable.

7.18 Summary of Impacts

Table 7.18–1 summarizes the resources that will be impacted as a result of the Project and the appropriate mitigation.

Table 7.18-1 Summary of Impacts and Mitigation

Resource	Impact	Mitigation
Demographics	Primarily positive due to increased expenditures during construction and the long term benefits of an increased tax base for the counties due to property taxes.	No adverse impacts are anticipated.
Land Use	For a maximum 50 turbine project, permanent impacts would total approximately 64 acres, of which 13 acres would be needed for the turbines, 51 acres for permanent access roads, and an additional 3 acres for an O&M Facility. The total of approximately 64 acres out of production is insignificant impact to agricultural production.	ACE will work with landowners and regulatory agencies to minimize impacts of the Project.
Public Services	No impacts are anticipated.	ACE will use station service from the local electrical utility
Human Health and Safety	No impacts are anticipated.	Turbines will be lighted to comply with FAA requirements. ACE will follow "prudent avoidance" methods to minimize EMF exposure. A variety of security measures will be implemented to reduce the chance of physical and property damage.
Noise	No impacts are anticipated to noise-sensitive resources.	ACE will locate turbines at least 1,400 feet from occupied residences.
Visual	Visual impacts will occur. The impacts are based on a subjective human response.	ACE will work with landowners and agencies to site turbines. They will not be located in environmentally sensitive areas. Existing infrastructure will be used where possible. Cut and fill areas will be minimized and mitigated as appropriate.
Cultural and Archaeological	No impacts to previously identified cultural resources are anticipated.	ACE has completed a Class I Cultural Resources Inventory for the Project. ACE will conduct a Class III inventory of construction areas as needed. ACE will avoid any resources identified to best of their ability throughout the life of the Project. If avoidance is not possible, ACE will work with the North Dakota SHPO to mitigate potential impacts.
Recreational Resources	Visual impacts to recreational resources are likely and are limited to individuals using the resources.	To the extent practicable, supporting infrastructure will be placed in a manner to avoid impacts to public land and recreation areas.
Land Based Economies	Approximately 64 acres of land will be impacted for the access roads, O&M Facility, and turbines. Temporary impacts for contractor staging and lay down areas will be determined prior to construction.	ACE will work with landowners to minimize impacts to their land.

Resource	Impact	Mitigation
Soils	Approximately 64 acres of land will be impacted for the turbines, access roads, and O&M building. Temporary impacts for contractor staging and lay down areas will be determined prior to construction. Impacts will be limited to land needed for the turbine foundations, access roads, and associated facilities.	BMPs for erosion and sediment control will be utilized to minimize wind and water erosion at the site. Only land needed for the facility will be impacted. Temporarily disturbed areas will be restored.
Geologic and Groundwater Resources	No impacts to groundwater resources are anticipated.	Wind turbines will be sited to avoid known sand and gravel resources to the extent practicable.
Surface Water and Floodplain Resources	Access roads and turbines will be located and constructed in such a manner that no impacts are anticipated.	Impacts to surface waters will be avoided. ACE will implement BMPs to minimize erosion and sedimentation at the site.
Wetlands	No impacts are anticipated.	If impacts cannot be avoided once the final turbine layout is complete, ACE will work with the USFWS, USACE, and the State of North Dakota to obtain permits and create required mitigation.
Vegetation	Approximately 64 acres of land will be impacted for the turbines, access roads, and O&M building. Temporary impacts for contractor staging and lay down areas will be determined prior to construction.	ACE will work with the USFWS to minimize impacts. ACE will avoid existing trees and shrubs as practicable. ACE will use BMPs during construction and operation to minimize impacts. If impacts to trees or shrubs cannot be avoided, the individual trees (2" dbh or >) or shrubs (6' tall or higher) will be replaced at a ratio of 2:1 and plantings will be monitored for three years. Temporarily disturbed areas will be reseeded per USFWS and NRCS recommendations.
Wildlife	Impacts to wildlife populations are expected to be minimal. Potential avian and bat collisions may occur, but are anticipated to be relatively small.	A variety of mitigative measures will be implemented, as discussed in Section 7.17.3. These include designing the facility to specifically minimize avian impacts. Pre-construction monitoring will be completed for avian species. Post-construction monitoring of avian and bat species will occur.
Rare and Unique Natural Resources	Impacts to rare and unique natural resources are not anticipated.	No additional mitigative measures are necessary.

8.0 Public Coordination

Keeping the public informed on the status of the Project is key component to its success. Principal stakeholders in the Project are landowners that have entered into agreements with ACE to provide wind rights for the Project. ACE will provide Project updates to the landowners and will continue to do so as the Project moves forward.

ACE plans to meet with Morton and Mercer Counties' commissioners representing the Project site and staff to inform them of the Project, discuss local permits, and answer questions. ACE representatives will discuss this Project with county planning officials in anticipation of submitting special use permit applications for the Project.

ACE is working with key state and federal agencies including the NDPSC, NDGFD and the USFWS to inform them of the Project and to address areas of interest particular to each department.

Additionally, letters introducing the Project and requesting feedback were sent on November 15, 2011 to the following agencies and Project stakeholders:

- Natural Resources Conservation Service
- North Dakota Attorney General
- Governor of North Dakota
- North Dakota Aeronautics Commission
- North Dakota Department of Transportation
- North Dakota Department of Agriculture
- North Dakota Department of Health
- North Dakota Department of Human Services
- North Dakota Department of Labor
- North Dakota Department of Career and Technical Education
- North Dakota Department of Commerce, Division of Community Services
- North Dakota Department of Commerce, Division of Economic Development and Finance
- North Dakota Energy Development Impact Office
- North Dakota Farm Service Agency
- North Dakota Game and Fish Department
- North Dakota Geological Survey
- North Dakota Indian Affairs Commission
- North Dakota Job Service
- North Dakota Parks and Recreation Department
- North Dakota Public Service Commission

- North Dakota State Land Department
- North Dakota State Soil Conservation Committee
- North Dakota State Water Commission
- State Historical Society of North Dakota
- U.S. Fish and Wildlife Service
- U.S. Army Corps of Engineers
- U.S. Bureau of Reclamation
- U.S. Bureau of Land Management
- Morton County Auditor
- Morton County Emergency Services
- Morton County Highway Department
- Morton County Park Board
- Morton County Planning and Zoning Administrator
- Morton County Water Resource District Board of Managers
- Mercer County Auditor
- Mercer County Emergency Services
- Mercer County Highway Department
- Mercer County Planning and Zoning Administrator
- Mercer County Water Resource Board

ACE is committed to keeping key stakeholders engaged in the Project as it moves forward. ACE will participate in landowner, agency, or other stakeholder meetings as needed before the PSC's public hearing.

9.0 Identification of Potential Permits/Approvals

The federal and state permits or approvals that have been identified as potentially being required for the construction and operation of the Project are shown in Table 9-1. Permits dependent on the final site layout will be applied for after receiving PSC approval, but prior to construction.

Table 9-1 Potential Permits and Approvals Required for Construction and Operation of the Proposed Facility

Agency	Type of Approval	Status	Need
Federal Approvals			
U.S. Army Corps of Engineers	Section 404 Permit	Final layout will determine whether permit/approval is needed; permit not anticipated	Permit required for dredge or fill in jurisdictional waters of the US. Project will avoid or minimize impacts on waters of the US to the extent practicable. Coverage under an existing Nationwide Permit may be necessary for minor unavoidable impacts.
Federal Aviation Administration	Form 7460-1, Notice of Proposed Construction	Will apply once Certificate is received	Notice and approval are required for structures over 200 feet high. FAA approval of lighting and marking of turbines is required.
	Form 7460-2, Part 1, Notice of Actual Construction or Alteration	Will apply once construction is complete	Required to provide FAA with final construction as-built information for their records.
Environmental Protection Agency	Spill Prevention Control and Countermeasure (SPCC) Plan	Will apply once Certificate is received	Required if the substation facility has greater than 1,320 gallons of oil. A copy of the plan will be maintained on file with the substation's owner/operator and will be reviewed by the certifying engineer every five years.
State of North Dakota			
Public Services Commission	Certificate of Site Compatibility	Subject of this Application	Required for construction of generation facility over 0.5 MW in size.
North Dakota Department of Health	401 Water Quality Certification	Final layout will determine whether permit/approval is needed	Required for filling in jurisdictional waters of US. No permit anticipated for Project.
	NPDES Permit: General Construction Storm Water	Will apply once Certificate is received	Required for disturbance of over 1 acre of land. Must prepare a Storm Water Pollution Prevention Plan (SWPPP).
North Dakota Division of Emergency Management	Emergency Planning and Community Right-to-Know Act (EPCRA) Tier II report	Will apply once Certificate is received	Required for owner/operators of facilities containing hazardous materials. A copy of the report must be filed annually by March 1.

Agency	Type of Approval	Status	Need
State Historic Preservation Office	Section 106 Compliance Approval	Final layout will determine whether permit/approval is needed	Section 106 Compliance Approval is required if there is federal involvement in the Project (i.e. federal funding or wetland fill). Need for approval is not anticipated at this time.
North Dakota Highway Patrol	Overheight/Overweight Permit	Will apply once Certificate is received	Permit required for hauling construction equipment and materials on state highways.
North Dakota Department of Transportation	Road Approach/Access Permit	Will apply once Certificate is received	Permit required for construction of access roads from state highways.
	Utility Permit/Risk Management Documents	Will apply once Certificate is received	Permit required for utility crossings on state highway ROW.
Local Permits			
Mercer County	Conditional Use Permit	Spring, 2012 application date planned depending on off-taker agreement.	Permit required for Project construction.
Morton County	Special Use Permit and Unified Development Application	Spring, 2012 application date planned depending on off-taker agreement.	Permit required for Project construction.
	Building Permit	Will apply once Certificate is received	Permit required for Project construction.
	Transportation Permit	Will apply once Certificate is received	Permit required for Project construction.
	Utility Occupancy Form	Will apply once Certificate is received	Permit required for Project construction in highway ROW.

10.0 Factors Considered

The North Dakota Energy Conversion and Transmission Facility Siting Act lists 11 factors to guide the PSC in the evaluation and designation of the site of the facility.

10.1 Public Health and Welfare, Natural Resources, and the Environment

The preceding sections of this application discuss the research and investigations relating the effects of the proposed facility on public health and welfare, natural resources, and the environment. These effects and the proposed mitigation to minimize these effects are summarized in Section 7.18.

10.2 Technologies to Minimize Adverse Environmental Effects

ACE will utilize the most recent technologies that minimize impacts to the environment. Current wind turbine technologies, including the equipment and siting tools, optimize the wind and land resources.

10.3 Potential for Beneficial Uses of Waste Energy

This factor is not applicable to this Project. No waste energy is created using wind energy.

10.4 Unavoidable Adverse Environmental Effects

Unavoidable adverse environmental effects include the visual impacts associated with the Project as well as those impacts related to the placement and use of the land within the site. The visual character of the site will be changed due to the construction of the Project. In order to construct, operate, and maintain the facility, access roads and turbine pads are necessary. Based on the maximum number of turbine locations, an O&M Facility, and access road layout, the Project is expected to permanently impact approximately 64 acres of land. An additional 10 acres will be temporarily impacted during construction.

10.5 Alternatives to the Proposed Site

ACE believes that the proposed site is the most viable alternative. ACE is committed to being flexible on the preliminary site layout and will work closely with landowners and regulatory agencies to examine all reasonable alternatives to the preliminary site layout.

10.6 Irreversible and Irretrievable Commitment of Natural Resources

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the use of these resources have on future generations. Irreversible effects primarily result from use or destruction of a specific resource that cannot be replaced within a reasonable time. Irretrievable resource commitments involve the loss in value of an

affected resource that cannot be restored as a result of the action. There are few commitments of resources associated with this Project that are irreversible and irretrievable, but those resources are primarily related to construction.

Construction resources that will be used include aggregate resources, concrete, steel, and hydrocarbon fuel. Each steel turbine requires the construction of a concrete base 45 to 65 feet across and 7 to 10 feet thick. Access roads will require aggregate resources for their construction and maintenance. During construction, vehicles will be traveling to and from the site, using hydrocarbon fuels.

10.7 Direct and Indirect Economic Impacts

Direct economic impacts include the short-term impacts associated with up to 64 acres of agricultural land being removed from production due to conversion to turbine sites, associated access roads, and associated facilities. In general, agricultural areas surrounding each turbine can still be farmed, and landowners will be compensated for the land occupied by the wind turbines and associated facilities.

The remaining direct and indirect economic impacts are primarily positive. To the extent that local contractors are used for portions of the construction, total wages and salaries paid to contractors and workers in Morton and Mercer counties will contribute to the total personal income of the region. Additional personal income will be generated for residents in the county and the state by circulation and recirculation of dollars paid out by ACE as business expenditures and state and local taxes. Expenditures made for equipment, energy, fuel, operating supplies, and other products and services benefit businesses in the county and the state.

Long-term beneficial impacts to the counties' tax bases as a result of the construction and operation of the wind farm will contribute to improving the local economy in this area of North Dakota. The development of wind energy in this region will be important in diversifying and strengthening the economic base of north central North Dakota. Additional revenues are expected from property and income taxes.

Continuing to establish North Dakota as an important producer of alternative energy sources may spur the development of wind-related businesses in the area, in turn contributing to the economic growth in the region.

10.8 Existing Development Plans of the State or Local Government, and Private Entities on or in the Vicinity of the Site

No conflicts are anticipated with existing state and local government and private entities' development plans.

10.9 Effect of Site on Cultural Resources

ACE has reviewed cultural resources information on file at the SHPO for the study area and will prepare a Class I Cultural Resources Inventory. A total of 8 known archaeological resources were found within the Project study area (Table 7.8).

Currently, no impacts are anticipated to known cultural resources on the site. ACE is committed to minimizing impacts to these resources and will avoid to the best of their ability these resources and any additional resources identified throughout the life of the Project. If avoidance is not possible, ACE will work with the North Dakota SHPO to appropriately mitigate potential impacts.

10.10 Effect of Site on Biological Resources

ACE has implemented measures to avoid and minimize effects to biological resources at the proposed site. The impact of the Project on wildlife is expected to be minimal. There is potential for avian and bat collisions with facility turbines or meteorological towers. The site will be designed to minimize impacts to those species.

10.11 Problems Raised by Agencies

Agencies were contacted to comment on the Project. The summary of comments received is below.

10.11.1 North Dakota Game and Fish Department

ACE sent a letter to the NDGFD on November 15, 2011 (Appendix B). No response has been received.

10.11.2 U.S. Fish and Wildlife Service

ACE sent a letter to the U.S. Fish and Wildlife Service on November 15, 2011 (**Appendix B**). No response has been received.

10.11.3 North Dakota SHPO

In a letter dated November 21, 2011, the SHPO recommended a Class I cultural resources inventory be completed for areas that may be impacted by the Project. They also recommended a Class II reconnaissance survey for standing structures in the visual Area of Potential Effect. They stated that a Class III cultural resources inventory is warranted for any area directly impacted by the project, such as crane paths, access roads, transmission lines, and turbine pads. ACE has completed the Class I cultural resources inventory. Eight known cultural resources were identified within the Project boundary (Table 7.8-1).

SHPO also recommended consultation with tribal nations, North Dakota Indian Affairs, ND DOT, and property owners maintaining land for recreational or scenic value.

ACE continues to consult with the SHPO in preparation for the need for a Class III inventory. The Class I inventory has also addressed the probability for archaeological sites within the Project study area and recommends survey strategies to identify additional cultural resources.

10.11.4 Natural Resources Conservation Service

In a letter dated December 8, 2011, the Natural Resources Conservation Service (NRCS) commented that they have a major responsibility under the Farmland Protection Policy Act (FPPA) to document the conversion of certain classification of farmland to non-agricultural use for projects using federal funds. The NRCS provided a form to aid in evaluating the classifications and conversions of farmland in the Project area.

10.11.5 North Dakota Office of Attorney General

ACE sent a letter to the Attorney General on November 15, 2011 (Appendix B). No response has been received.

10.11.6 North Dakota Governor

ACE sent a letter to the North Dakota Governor Jack Dalrymple on November 15, 2011 (Appendix B). No response has been received.

10.11.7 Aeronautics Commission

ACE sent a letter to the Aeronautics Commission, November 15, 2011 (Appendix B). No response has been received.

10.11.8 North Dakota Department of Transportation

In a letter dated November 30, 2011 (Appendix B), NDDOT stated that the proposed Project would have no adverse effects on ND highways. They also noted that if any work needs to occur in highway rights-of-way, the District Engineer should be notified.

10.11.9 North Dakota Department of Agriculture

ACE sent a letter to the North Dakota Department of Agriculture, November 15, 2011 (Appendix B). No response has been received.

10.11.10 North Dakota Department of Health

In a response dated, November 28, 2011 (Appendix B), the agency made several construction-related comments. They stated that all attempts must be made to minimize dust emissions from the Project construction. They also noted that impacts to waters of the state should be minimized by promptly replacing vegetation in disturbed areas and avoiding disturbances to streambeds and banks. Construction guidelines for minimizing impacts to waterways were provided. It was noted that projects disturbing more than one acre are required to have a permit to discharge stormwater runoff until the site is stabilized by reestablishment of vegetation or

permanent cover. Call the Division of Water Quality for further permitting assistance at (701) 328-5210. Check local municipalities for further stormwater management considerations. Another issue raised by the agency was noise. The agency suggests that construction noise be minimized by assuring the usage of proper equipment mufflers and by timing construction activities to prevent early morning and late evening disturbances to local residents. Lastly, the agency stated that they own no land in the proposed Project area and also that they believe the Project is consistent with the State Implementation Plan for the Control of Air Pollution for the State of North Dakota.

10.11.11 North Dakota Department of Human Services

ACE sent a letter to the North Dakota Department of Human Services, November 15, 2011 (Appendix B). No response has been received.

10.11.12 North Dakota Department of Labor

ACE sent a letter to the North Dakota Department of Labor, November 15, 2011 (Appendix B). No response has been received.

10.11.13 North Dakota Department of Career and Technical Education

ACE sent a letter to the North Dakota Department of Career and Technical Education, November 15, 2011 (Appendix B). No response has been received.

10.11.14 North Dakota Department of Commerce, Division of Community Services

ACE sent a letter to the North Dakota Department of Commerce, November 15, 2011 (Appendix B). No response has been received.

10.11.15 North Dakota Department of Commerce, Division of Economic Development and Finance

ACE sent a letter to the North Dakota Department of Commerce, November 15, 2011 (Appendix B). No response has been received.

10.11.16 North Dakota Energy Development Impact Office

ACE sent a letter to the North Dakota Energy Development Impact Office, November 15, 2011 (Appendix B). No response has been received.

10.11.17 North Dakota Farm Service Agency

ACE sent a letter to the North Dakota Farm Service Agency, November 15, 2011 (Appendix B). No response has been received.

10.11.18 North Dakota Game and Fish Department

In a response dated December 12, 2011, the North Dakota Game and Fish Department requested that native prairie be avoided to the extent possible, that any unavoidable wetland impacts be replaced in-kind, aboveground appurtenances not be placed in wetland areas, and no alterations be made to existing drainage patters. The Department also recommended pre-construction sharp-tailed grouse surveys, and routine monitoring for avian and bat mortality as part of the facility maintenance plan for the Project.

10.11.19 North Dakota Geological Survey

A response was received dated November 21, 2011 (Appendix B). The agency indicated the presence of one minable coal deposit within the Project site. The Wilson Creek North Coal deposit covers approximately 160 acres and contains 2.8 million tons of mineable coal.

10.11.20 North Dakota Indian Affairs Commission

ACE sent a letter to North Dakota Indian Affairs Commission, November 15, 2011 (Appendix B). No response has been received.

10.11.21 North Dakota Job Service

A response was received dated November 18, 2011 (Appendix B). The agency had no comments and noted that they had no applicable permits for the Project.

10.11.22 North Dakota Parks and Recreation Department

ACE sent a letter to the North Dakota Parks and Recreation Department on November 15, 2011 (Appendix B). No response has been received.

10.11.23 North Dakota Public Service Commission

ACE sent a letter to the NDPSC on November 15, 2011 (Appendix B).

10.11.24 North Dakota State Land Department

ACE sent a letter to the North Dakota State Land Department on November 15, 2011 (Appendix B). The NDSLD indicated the presence of one School Trust tract in the Project area. The tract is SW4 36-141-88 in Mercer County. If a right of way is proposed across either tract, submit an online application at http://www.land.nd.gov/surface/row/.

ACE has determined that no turbines or associated structures are proposed on the School Trust Lands.

10.11.25 North Dakota Soil Conservation Committee

ACE sent a letter to the North Dakota Soil Conservation Committee, November 15, 2011 (Appendix B). No response has been received.

10.11.26 North Dakota State Water Commission

In a response dated November 29, 2011, the North Dakota State Water Commission stated that the Project is not located in an identified floodplain, and it is believed the Project will not affect an identified floodplain. They also stated that it is the responsibility of the Project sponsor to ensure that all local, state, and federal agencies are contacted for required approvals, permits, and easements. All waste materials associated with the Project must be disposed of properly. There are no sole-source aquifers designated in the state of North Dakota.

10.11.27 U.S. Bureau of Reclamation

ACE sent a letter to the U.S. Bureau of Reclamation, November 15, 2011 (Appendix B). No response has been received.

10.11.28 U.S. Bureau of Land Management

ACE sent a letter to the U.S. Bureau of Land Management on November 15, 2011 (Appendix B). No response has been received.

10.11.29 U.S. Army Corps of Engineers

In a response dated November 29, 2011, the USACE stated that work over, in, or under navigable waters may be subject to a permit under Section 10 of the Rivers and Harbors Act, and the discharge of dredge or fill material in waters of the U.S. may be subject to a permit under Section 404 of the Clean Water Act. An application was provided for completion and submittal should a permit be required for any of these conditions.

10.11.30 Morton County Auditor

ACE sent a letter to the Morton County Auditor, November 15, 2011 (Appendix B). No response has been received.

10.11.31 Morton County Emergency Services

ACE sent a letter to the Morton County Emergency Services, November 15, 2011 (Appendix B). No response has been received.

10.11.32 Morton County Highway Department

ACE sent a letter to the Morton County Highway Department, November 15, 2011 (Appendix B). No response has been received.

10.11.33 Morton County Park Board

ACE sent a letter to the Morton County Park Board, November 15, 2011 (Appendix B). No response has been received.

10.11.34 Morton County Planning and Zoning Administrator

ACE sent a letter to the Morton County Planning and Zoning Administrator, November 15, 2011 (Appendix B). No response has been received.

10.11.35 Morton County Water Resources District Board of Managers

ACE sent a letter to the Morton County Water Resources District Board Managers, November 15, 2011 (Appendix B). No response has been received.

10.11.36 Mercer County Auditor

ACE sent a letter to the Mercer County Auditor, November 15, 2011 (Appendix B). No response has been received.

10.11.37 Mercer County Emergency Services

ACE sent a letter to the Mercer County Emergency Services, November 15, 2011 (Appendix B). No response has been received.

10.11.38 Mercer County Highway Department

ACE sent a letter to the Mercer County Highway Department, November 15, 2011 (Appendix B). No response has been received.

10.11.39 Mercer County Planning and Zoning Administrator

ACE sent a letter to the Mercer County Planning and Zoning Administrator, November 15, 2011 (Appendix B). No response has been received.

10.11.40 Mercer County Water Resources Board

ACE sent a letter to the Mercer County Water Resources Board, November 15, 2011 (Appendix B). No response has been received.

11.0 List of Preparers

Table 11-1 Contributor Qualifications

Name and Affiliation	Education And Professional Experience
ALLETE CLEAN ENERGY PROJECT MANAGEMENT TEAM ALLETE	Jim Atkinson, Supervisor, Environmental Siting and Permitting, ALLETE Daniel McCourtney, Environmental Compliance Specialist, ALLETE Dwight Anderson, Supervisor, ALLETE Clean Energy Address: 30 West Superior Street, Duluth, MN 55802
JOHN WACHTLER Barr Engineering	John has worked in environmental review for governmental agencies, law firms, and consulting firms for nearly 20 years. He has overseen and written numerous environmental assessments and impact statements for linear-corridor projects. Since joining Barr in 2006, John has managed environmental review and permitting for high-voltage transmission lines and several wind projects. Address: 4700 W. 77th Street, Minneapolis, Minnesota 55435
DANIEL FLO Barr Engineering	Dan Flo has nine years of experience as an environmental and regulatory compliance manager in the areas of electric, oil, and gas transmission, mining, and environmental review and compliance. His experience includes leading large-scale projects involving environmental review, permitting, and environmental and cultural resources field surveys and agency consultations. Address: 4700 W. 77th Street, Minneapolis, Minnesota 55435
MICHAEL STRONG Barr Engineering	GIS Specialist Michael Strong has six years of experience performing analysis, cartography, data management, and field data collection for a wide range of environmental projects. Michael has worked extensively on hydrologic modeling projects, electrical transmission line permit applications, oil pipeline maintenance and wind farm desktop and geotechnical studies. Address: 4700 W. 77th Street, Minneapolis, Minnesota 55435

Name and Affiliation	Education And Professional Experience
Amanda Bohnenblust Barr Engineering	Amanda has more than five years of experience providing environmental consulting services. Her experience includes project management, biological-resources and protected-species studies, shoreline remediation, stormwater pollution pretention plans (SWPPPs), National Pollutant Discharge Elimination System (NPDES) permitting, construction compliance, and habitat assessments. Address: 4700 W. 77th Street, Minneapolis, Minnesota 55435
WADE BURNS Beaver Creek Archaeology	Senior Archaeologist Wade Burns has several years' experience managing archaeological projects that range in size from one-acre surveys to multi-year mitigations. He also has several years of experience in GIS analysis, receiving GISc certification from the University of North Dakota. In addition, Burns has achieved certification in subsurface geophysical survey from the National Park Service, using a range of sensing technologies, such as Ground Penetrating Radar (GPR). Address: 301 1st St NE, Suite 201, Mandan, North Dakota 58554
CHRISTINA BURNS Beaver Creek Archaeology	Senior Archaeologist Christina Burns brings several years of experience in Great Plains archaeology, managing large and small projects. She received GISc certification from the University of North Dakota. Address: 301 1st St NE, Suite 201, Mandan, North Dakota 58554
Clayton Derby Western EcoSystems Technology, Inc.	Senior Manager/Wildlife Biologist brings several years of experience in North Dakota biological resources, managing large and small scale projects. He received a Bachelor of Arts degree in Biology from Moorhead State University and a Master's of Science degree in Zoology and Physiology from the University of Wyoming. Address: 4007 State Street, Suite 109

12.0 References

American Wind Energy Association (AWEA). 2008. State-Level Renewable Energy Portfolio Standards (RPS). http://www.awea.org/pubs/factsheets/State_RPS_Fact_Sheet.pdf

American Wind Energy Association (AWEA). U.S. Wind Energy Projects. Accessed November 23, 2011. http://www.awea.org/

Best Management Practices for Erosion and Sediment Control. North Dakota Department of Health. Division of Water Quality SFN 19389 (09/99)

Board of Mercer County Commissioners. Mercer County Zoning Ordinance – Updated 2009. http://www.mercercountynd.com/?id=38. Accessed November 22, 2011.

City of Glen Ullin, ND. Accessed December 1, 2011. http://cityofglenullin.yolasite.com/

City of Hebron, ND. Accessed November 18, 2011. http://www.hebronnd.org/Information.html

Croft, M.G. 1973. Ground-Water Resources Mercer and Oliver Counties, North Dakota.

Energy Information Administration: Official Energy Statistics from the U.S. Government. November 2009. Accessed November 23,2 011.. http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=ND

Federal Aviation Administration (FAA). DoD Preliminary Screening Tool. Accessed November 18, 2011. https://oeaaa.faa.gov/oeaaa/external/gisTools/gisAction.jsp.

Federal Emergency Management Agency (FEMA). Floodplains (Q3 Flood Data) 1995.

Grover, S. 2002. Economic Impacts of Wind Power in Kittitas County, Final Report. Funded by State of Washington Office of Trade and Economic Development and the Energy Foundation. ECONorthwest. Portland, OR. 20 pp.

Hoen, Ben. 2006. *Impacts of Windmill Visibility on Property Values in Madison County, New York*. Bard Center for Environmental Policy.

Minnesota Electric Transmission Planning. Transmission Projects Report 2011. http://minnelectrans.com/documents/2011_Biennial_Report/html/Ch_8_Renewable_Energy_Standards.htm. Last accessed December 1, 2011.

The Minnesota State Interagency Working Group on EMF Issues. *A White Paper on Electric and Magnetic Field (EMF) Policy and Mitigation Options*. http://www.capx2020.com/Images/EMFWhitePaper2002.pdf

Morton County Planning and Zoning Commission. Morton County Comprehensive Land Use Plan – Draft. February 2000. http://www.co.morton.nd.us/vertical/Sites/{90CBB59C-38EA-4D41-861A-81C9DEBD6022}/uploads/{95B837B0-4C81-498A-B597-B843A8E065AC}.PDF

Murphy, Edward C. and Lynn D. Helms. North Dakota Geological Survey. Lignite Reserves – Hazen and Glen Ullin Quadrangles. 2009

National Wind Coordinating Committee (NWCC). 2004. Wind Turbine Interactions with Birds and Bats: A Summary of Research Results and Remaining Questions. Resolve, Inc., Washington D.C., 7 pp.

North Dakota Department of Transportation. County and City Roads. November 2011. http://www.nd.gov/gis/

North Dakota Game and Fish Department. Wildlife Management Area Guide. http://gf.nd.gov/hunting/wildlife.html. Retrieved November 23, 2011.

North Dakota Game and Fish Department. Game and Fish Lands. November 2011. http://www.nd.gov/gis/.

North Dakota Game and Fish Department. PLOTS Lands Layer. November 2011. http://gf.nd.gov/maps/plots.html

North Dakota Geological Survey and U.S. Geological Survey. US PLSS Linework. September 2011.

North Dakota State Land Department. Land Department Surface Tracts. November 2011. http://www.nd.gov/gis/

North Dakota State Water Commission Ground and Surface water Data Query. Retrieved November 18, 2011. http://www.swc.state.nd.us/4dlink2/4dcgi/WellSearchForm/Map%20and%20Data%20Resources

North Dakota State Water Commission. Query Water Permits. Accessed November 18, 2011. http://www.swc.state.nd.us/4dlink7/4dcgi/permitsearchform/Map%20and%20Data%20Resources

North Dakota State Water Commission. County Ground Water Studies http://www.swc.state.nd.us/4dlink9/4dcgi/GetSubCategoryRecord/Reports%20and%20Publications/County%20Ground%20Water%20Studies.

North Dakota State Water Commission and US Geological Survey. Water100k_poly (Lakes and Ponds) Layer. February 2008.

North Dakota State Water Commission and US Geological Survey. Water100k_line (Streams) Layer. February 2008.

Poletti and Associates, Inc. 2005. *A Real Estate Study of the Proposed Forward Wind Energy Center*: Dodge and Fond du Lac Counties, Wisconsin; EcoNorthwest. 2002. *Economic Impacts of Wind Power in Kittitas County*.

Sterzinger, George; Beck, Fredric; Kostiuk, Damian. 2003. *The Effect of Wind Development on Local Property Values*. Renewable Energy Policy Project. http://www.crest.org/articles/static/1/binaries/wind_online_final.pdf.

Tetra Tech EC, Inc. Draft Environmental Critical Issues Analysis for BNI Coal Wind Resource Area. July 2008.

U.S. Census Bureau. American Factfinder. http://factfinder.census.gov/servlet/BasicFactsServlet. Retrieved November 2011.

U.S. Department of Agriculture/The Census of Agriculture. 2007 Census Publications. Accessed November 18, 2011. http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/County_Profiles/North_Dakota/index.asp

U.S. Department of Agriculture/The Census of Agriculture. 2007 Census Publications. County Level Data. Accessed November 18, 2011. http://www.agcensus.usda.gov/Publications/2007/Full_Report/Volume_1,_Chapter_2_County_Level/North_Dakota/index.asp

U.S. Department of Agriculture. The Census of Agriculture. 2007 Census Publications. State and County Profiles. Accessed November 18, 2011. http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/County_Profiles/North_Dakota/index.asp

U.S. Department of Agriculture/Farm Service Agency/Aerial Photography Field Office. National Agriculture Imagery Program 2010 Aerial Imagery for Morton and Mercer Counties. 2010. http://datagateway.nrcs.usda.gov/. Accessed November 2011.

U.S. Department of Agriculture/National Agricultural Statistics Service. Retrieved November 22, 2011. http://www.nass.usda.gov/Statistics_by_State/North_Dakota/index.asp

U.S. Department of Agriculture/National Resources Conservation Service – National Cartography & Geospatial Center. National Land Cover Dataset (NLCD) Layer. 2001.

U.S. Department of Agriculture. Natural Resources Conservation Service (NRCS) SSURGO Soils Data Layer. Morton and Mercer Counties. September 2011. http://soildatamart.nrcs.usda.gov/

U.S. Department of Agriculture. Natural Resources Conservation Service (NRCS). Conservation Reserve Program. Accessed November 22, 2011. http://www.nrcs.usda.gov/programs/CRP/

U.S. Department of Energy, Energy Efficiency and Renewable Energy. 2008. States with Renewable Portfolio Standards. http://apps1.eere.energy.gov/states/maps/renewable_portfolio_states.cfm. Accessed November 23, 2011.

US Department of Energy: Wind Powering America. ND Wind Resource Map. Accessed November 23, 2011. http://www.windpoweringamerica.gov /maps_template.asp?stateab=nd

U.S. Department of Transportation. Public-Use Airports – National Transportation Atlas Database 2011. November 2011. http://www.bts.gov/publications/national_transportation_atlas_database/2011/U.S. Environmental Protection Agency. Western Ecology Division. Level III Ecoregions. Accessed November 18, 2011. http://www.epa.gov/wed/pages/ecoregions/level_iii.htm

US Fish and Wildlife Service (USFWS). 2011b. USFWS Website. Last updated October 2011. USFWS Endangered Species Program homepage: http://www.fws.gov/endangered/; Environmental Conservation Online System (ECOS): http://ecos.fws.gov/ecos/indexPublic.do; Threatened and Endangered Species System (TESS) listings by state: http://ecos.fws.gov /tess_public /pub/ stateListingAndOccurrence.jsp; Individual species profiles and status information available from the ECOS webpage. U.S. Fish and Wildlife Service. 2003. Interim Guidelines to Avoid and Minimize Wildlife Impacts from Wind Turbines. Washington, D.C. Wind Turbine Siting Working Group. http://www.fws.gov/r9dhcbfa/wind.pdf

U.S. Fish and Wildlife Service. Mountain-Prairie Region – North Dakota. http://mountain-prairie.fws.gov/nd.html. Retrieved November 23, 2011.

U.S. Fish and Wildlife Service. National Wetland Inventory (NWI) Layer. September 9, 2011. http://www.fws.gov/wetlands/index.html

U.S. Fish and Wildlife Service, Ecological Services, North Dakota Field Office (USFWS NDFO). Endangered, Threatened, Proposed and Candidate Species in North Dakota Counties. November 2011. http://www.fws.gov/mountain-prairie/endspp/countylists/northdakota.pdfU.S. Geological Survey. National Hydrography Dataset. Watershed Boundaries. November 2011. http://nhd.usgs.gov/data.html

Western EcoSystems Technology, Inc. (WEST). 2011. Site Characterization Study of the ALLETE Clean Energy Project. Prepared by WEST, Bismarck, North Dakota. November 2011.

Wilhelm, Francis J. 1978. Soil Survey of Mercer County, North Dakota.

13.0 Acronyms, Abbreviations and Definitions

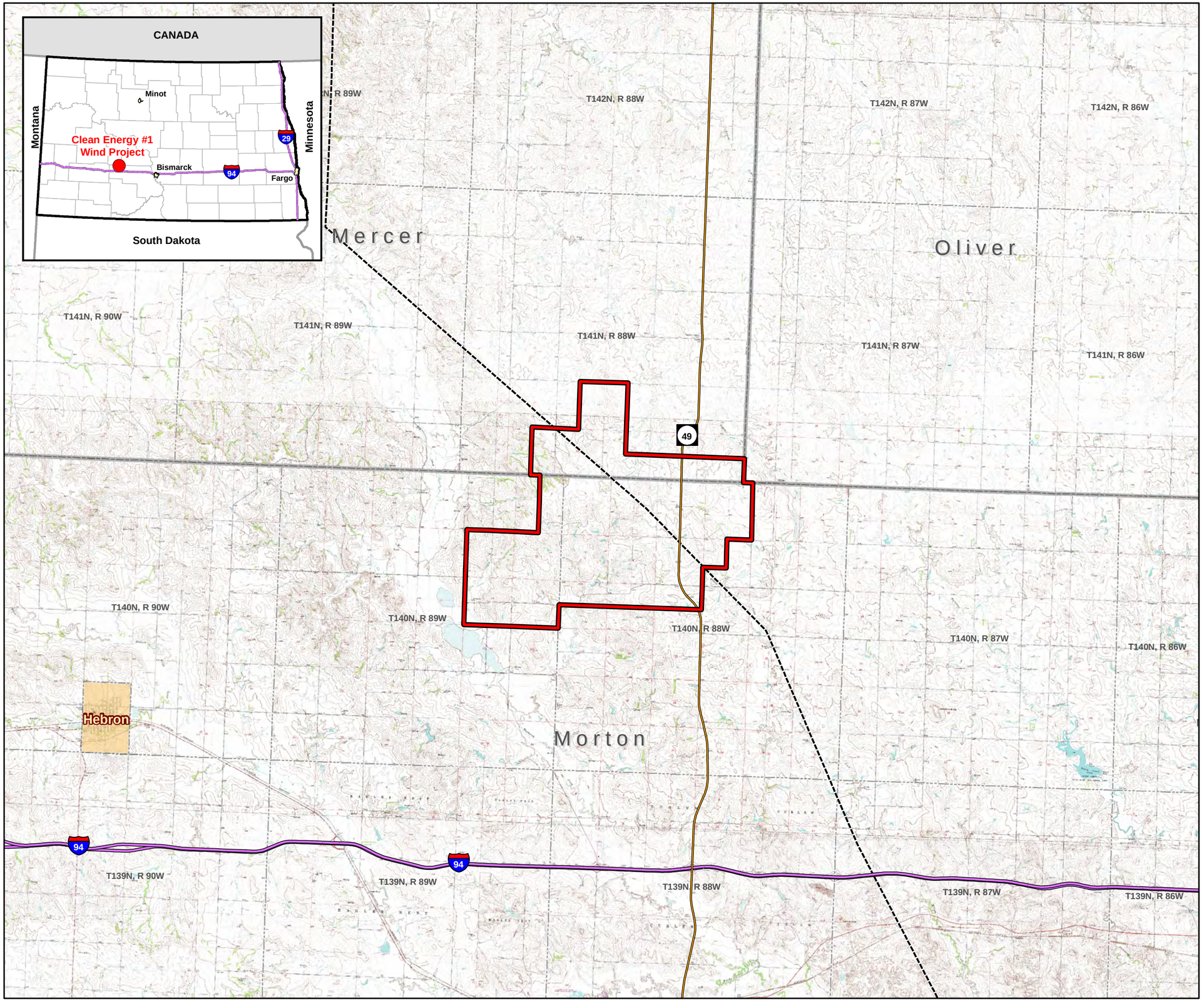
ADT	Average Daily Traffic
ANSI	American National Standards Institute
APE	Area of Potential Effects
APLIC	Avian Power Line Interaction Committee
ASTM	American Society for Testing of material
Asynchronous Generator	A cage-wound generator, also called an induction generator, used to generate alternating current.
AWEA	American Wind Energy Association
BMPs	Best Management Practices; prevents soil erosion and sedimentation
Capacity	The capability of a system, circuit, or device for storing electric charge.
Certificate	Certificate of Site Compatibility
Class I Cultural Resources Inventory	Existing data inventory – a large-scale review and compilation of known cultural resource data.
Class III Cultural Resources Inventory	Intensive field inventory – complete surface inventory of a specific area.
Commission or PSC	North Dakota Public Service Commission
Corridor Certificate	Certificate of Corridor Compatibility
CRP	Conservation Reserve Program
dBA	Decibel
DC	direct current
Distribution	Relatively low-voltage lines that deliver electricity to the retail customer's home or business.
DOE	US Department of Energy
EIA	Energy Information Administration
Electromechanical	Of, relating to, or being a mechanical process or device actuated or controlled electrically; especially being a transducer for converting electrical energy to mechanical energy.
EMF	Electric and Magnetic Field
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Environmental Site Assessment
FAA	Federal Aviation Administration

FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Maps
FPPA	Farmland Protection Policy Act
Ft	Foot/Feet
GE	General Electric
Generator	A machine by which mechanical energy is changed into electrical energy.
Geotechnical	A science that deals with the application of geology to engineering.
Hub	The central part of a circular object (as a wheel or propeller).
Interconnection	To be or become mutually connected.
ISO	International Standards Organization
kV	kilovolt
kW	kilowatt
kWh	Kilowatt-hour
m	meter
Micrositing	The process in which the wind resources, potential environmentally sensitive areas, soil conditions, and other site factors, as identified by local, state and federal agencies, are evaluated to locate wind turbines and associated facilities.
MISO	Midwest Independent System Operator
MLRA	Major Land Resource Area
MP	Minnesota Power
mph	miles per hour
Mps	meters per second
MSL	Mean Sea Level
MW	Megawatt
MWh	Megawatts per hour
Nacelle	A streamlined enclosure (as for an engine), which houses the generator, brake, cooling system and other electrical and mechanical systems.
NASS	National Agricultural Statistics service
NDAC	North Dakota Administrative Code
NDCC	North Dakota Century Code
NDDOT	North Dakota Department of Transportation

NDGFD	North Dakota Game and Fish Department
NDPRD	North Dakota Parks and Recreation Department
NDSWC	North Dakota State Water Commission
NESC	National Electric Safety Code
NHID	Natural Heritage Inventory Database
NPDES	National Pollutant Discharge Elimination System
NRCS	National Resource Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
O&M	Operations and maintenance facility
ONAC	Office of Noise Abatement and Control
Pitch	The action or a manner of pitching; especially an up-and-down movement.
PPA	Power Purchase Agreements
Project, the	Clean Energy #1 Wind Project
PSC	North Dakota Public Service Commission
PTC	Production Tax Credit
RD	Rotor Diameter: Diameter of the rotor from the tip of a single blade to the tip of the opposite blade.
RECs	Recognized Environmental Conditions
RES	Renewable Energy Standard
Resistance	The opposition offered by a body or substance to the passage through it of a steady electric current.
Rotor	The rotor consists of three blades mounted to a rotor hub.
ROW	Right-of-Way
rpm	Revolutions per minute
RPS	Renewable Portfolio Standards
SCADA	Supervisory Control and Data Acquisitions (communications technology)
SHPO	State Historic Preservation Office
SPCC	Spill Prevention Control and Countermeasures
Step-up Transformer	A transformer that increases voltage
Substation	A subsidiary station in which electric current is transformed.
SWL	Sound Power Level, W is for the reference of power, the Watt

SWPPP	Stormwater Pollution Prevention Plan
Torque	A force that produces or tends to produce rotation or torsion; also a measure of the effectiveness of such a force that consists of the product of the force and the perpendicular distance from the line of action of the force to the axis of rotation: a turning or twisting force.
Transformer	An electrical device by which alternating current of one voltage is changed to another voltage.
USACE	US Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
UT	Unincorporated Township
WEST	Western EcoSystems Technology, Inc
WMA	Wildlife Management Area
WMD	Wetland Management District
WPAs	Waterfowl Protection Areas
WTG	Wind Turbine Generator
Yaw	To deviate erratically from a course (as when struck by a heavy sea); especially to move from side to side: to turn by angular motion about the vertical axis.

Exhibits



Transmission Line
Interstate Highway
State Highway
Preliminary Project Boundary
Municipality
County Boundary

Data Sources:
Project Boundary - Allete Clean Energy
Transmission Line - Barr Engineering
Roads, Administrative Boundaries - ND DOT
Topo Map - USGS DRG

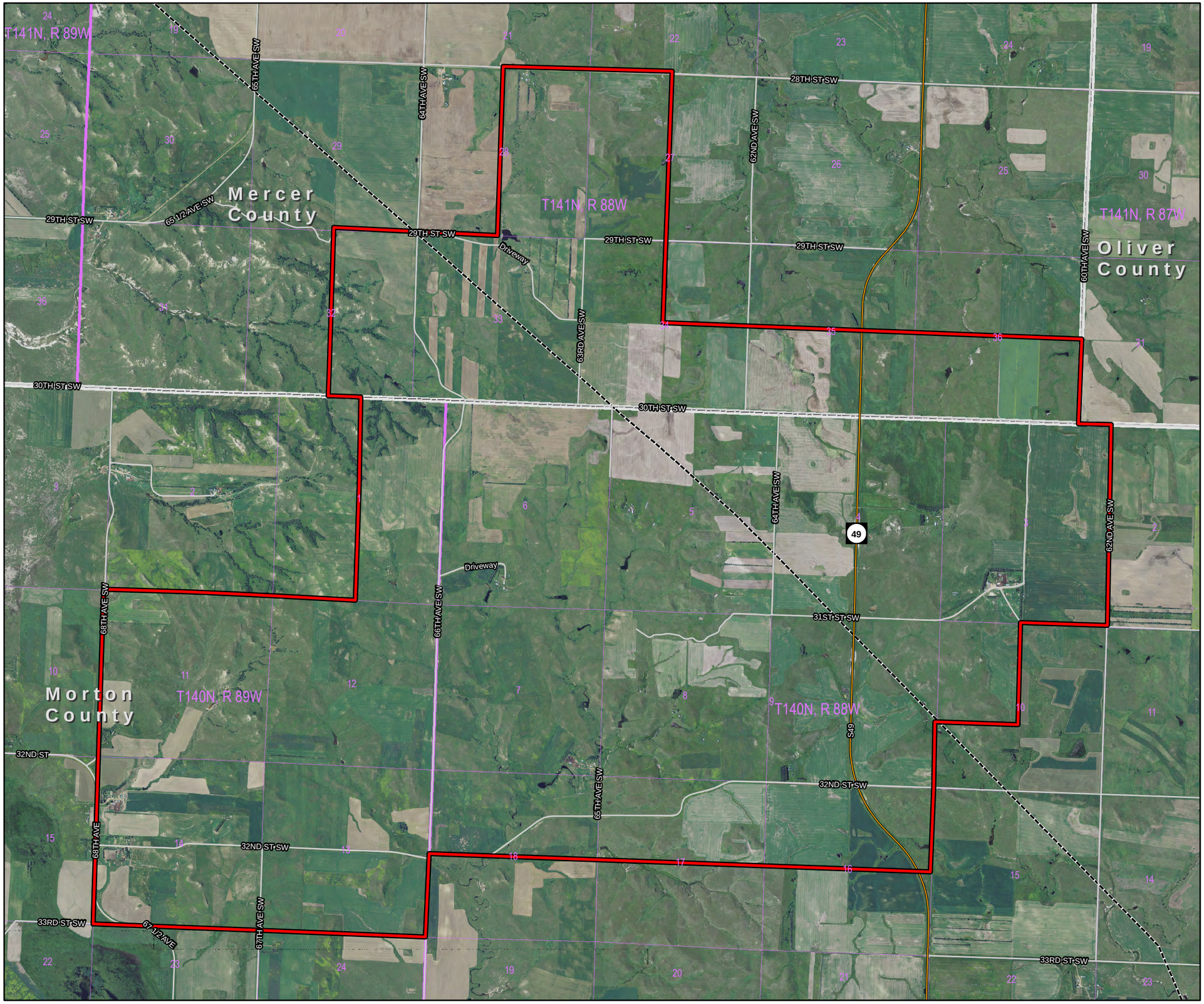
N

Miles
2 0 2

Kilometers
3 0 3

Exhibit 1

PROJECT OVERVIEW MAP
Clean Energy #1 Wind Project
Allete Clean Energy
Morton & Mercer Counties, North Dakota



- Transmission Line
- State Highway
- Local Road
- Public Land Survey Section
- Public Land Survey Township
- Preliminary Project Boundary
- County Boundary

Data Sources:
Project Boundary - Allete Clean Energy
Transmission Line - Barr Engineering
Roads, Administrative Boundaries - ND DOT
Imagery - FSA NAIP, 2010

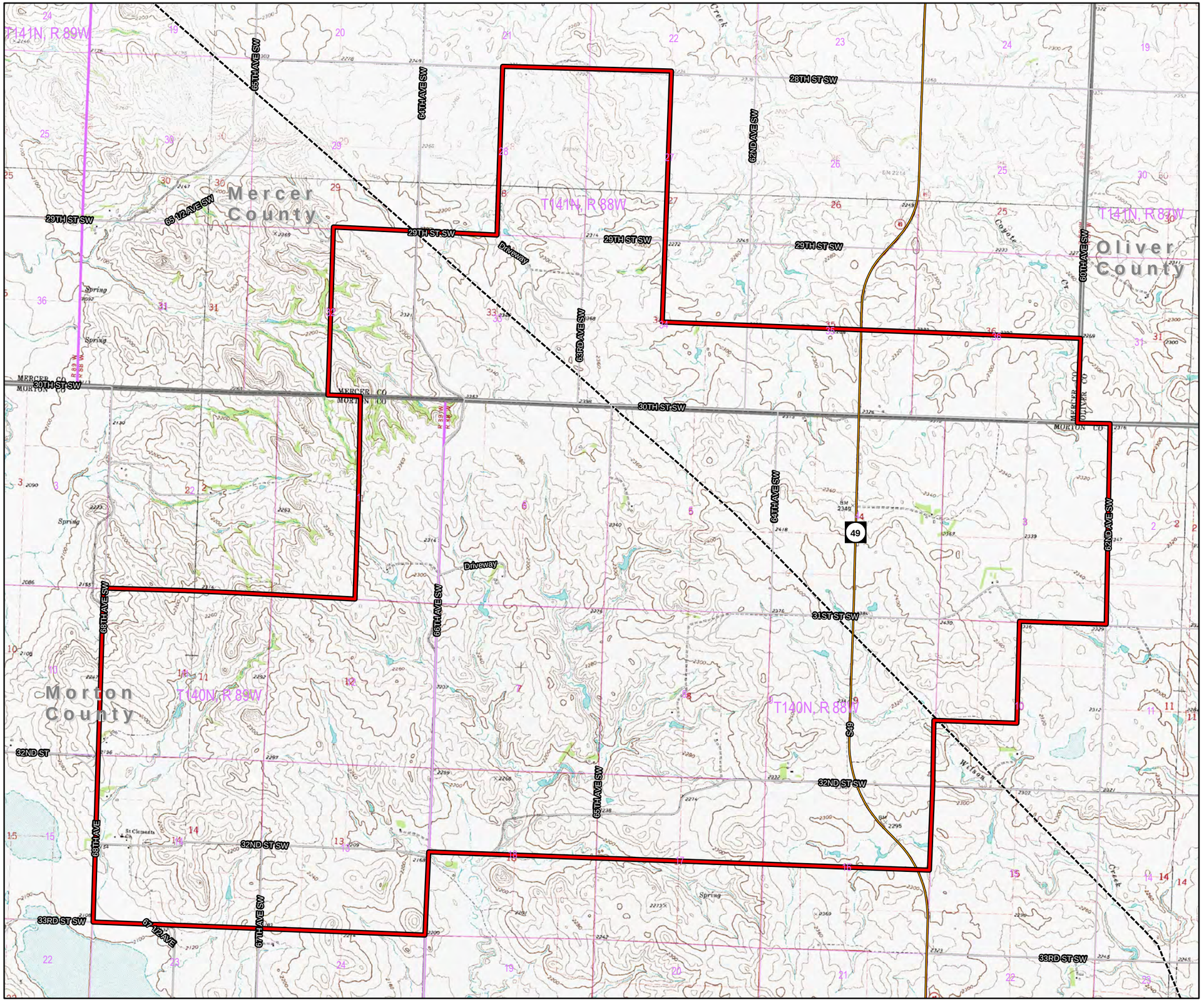
N

Feet
3,000 0 3,000

Meters
1,000 0 1,000

Exhibit 2

PRELIMINARY LAYOUT 2010 IMAGERY
Clean Energy #1 Wind Project
Allete Clean Energy
Morton & Mercer Counties, North Dakota



- Transmission Line
- State Highway
- Local Road
- Public Land Survey Section
- Public Land Survey Township
- Preliminary Project Boundary
- County Boundary

Data Sources:
Project Boundary - Allete Clean Energy
Transmission Line - Barr Engineering
Roads, Administrative Boundaries - ND DOT
Topography - USGS DRG

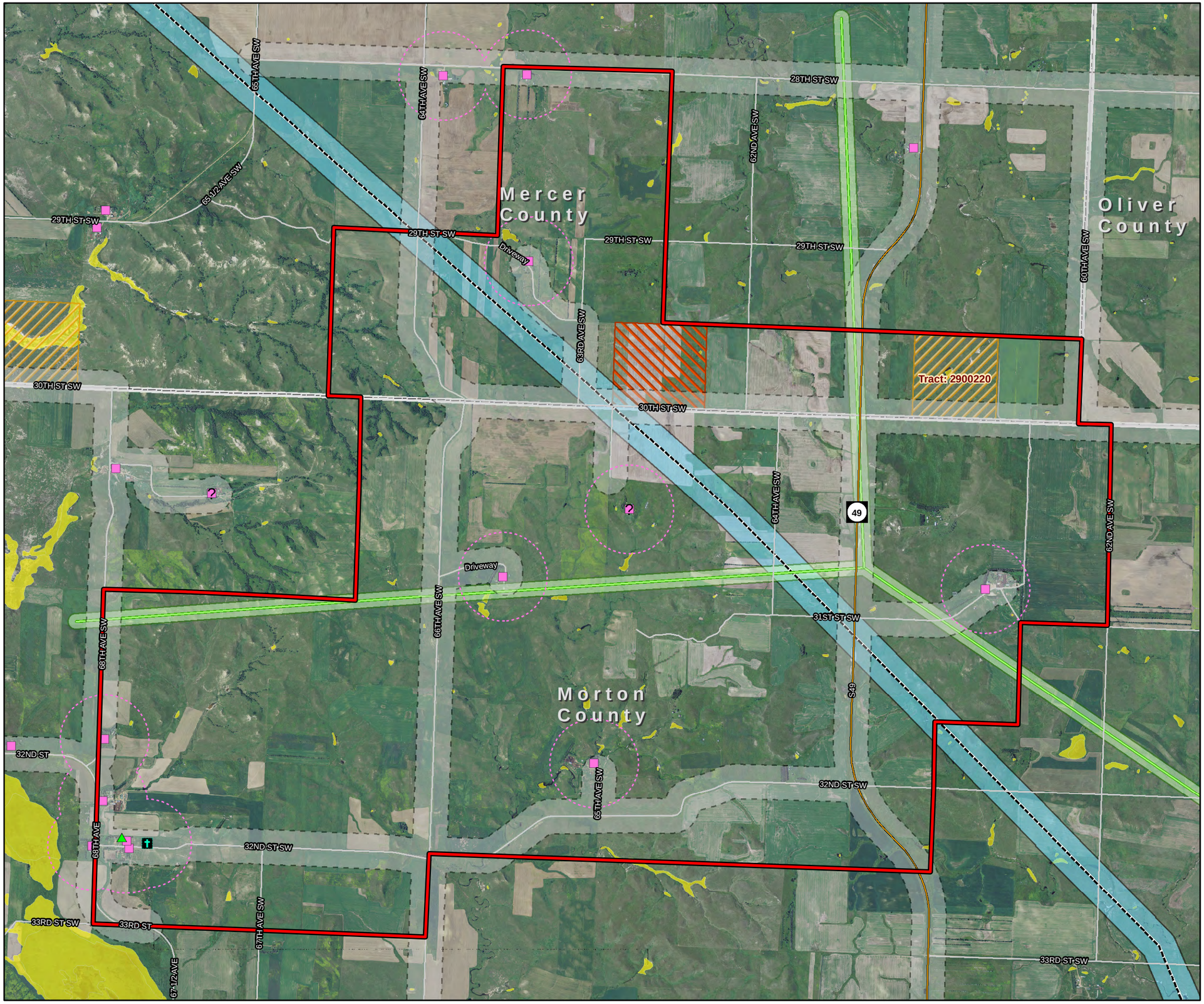
N

Feet
3,000 0 3,000

Meters
1,000 0 1,000

Exhibit 3

PRELIMINARY LAYOUT TOPOGRAPHY
Clean Energy #1 Wind Project
Allete Clean Energy
Morton & Mercer Counties, North Dakota



- Occupied Residence Location
- Uncertain Residence Location
- Cemetery Location
- Church Location
- Transmission Line
- State Highway
- Local Road
- National Wetland Inventory (USFWS)
- 1400ft Occupied Dwelling Setback
- 542ft Maintained Roads Setback
- 542ft Transmission Line Setback
- 250ft Microwave Beam Path Setback
- ND State Land Dept. Administered Property
- Private Land Open to Sportsmen (PLOTS)
- Preliminary Project Boundary
- County Boundary

Data Sources:
Project Boundary, Residences - Allete Clean Energy
Transmission Line - Barr Engineering
Roads, Administrative Boundaries - ND DOT
National Wetland Inventory - USFWS
Imagery - FSA NAIP, 2010

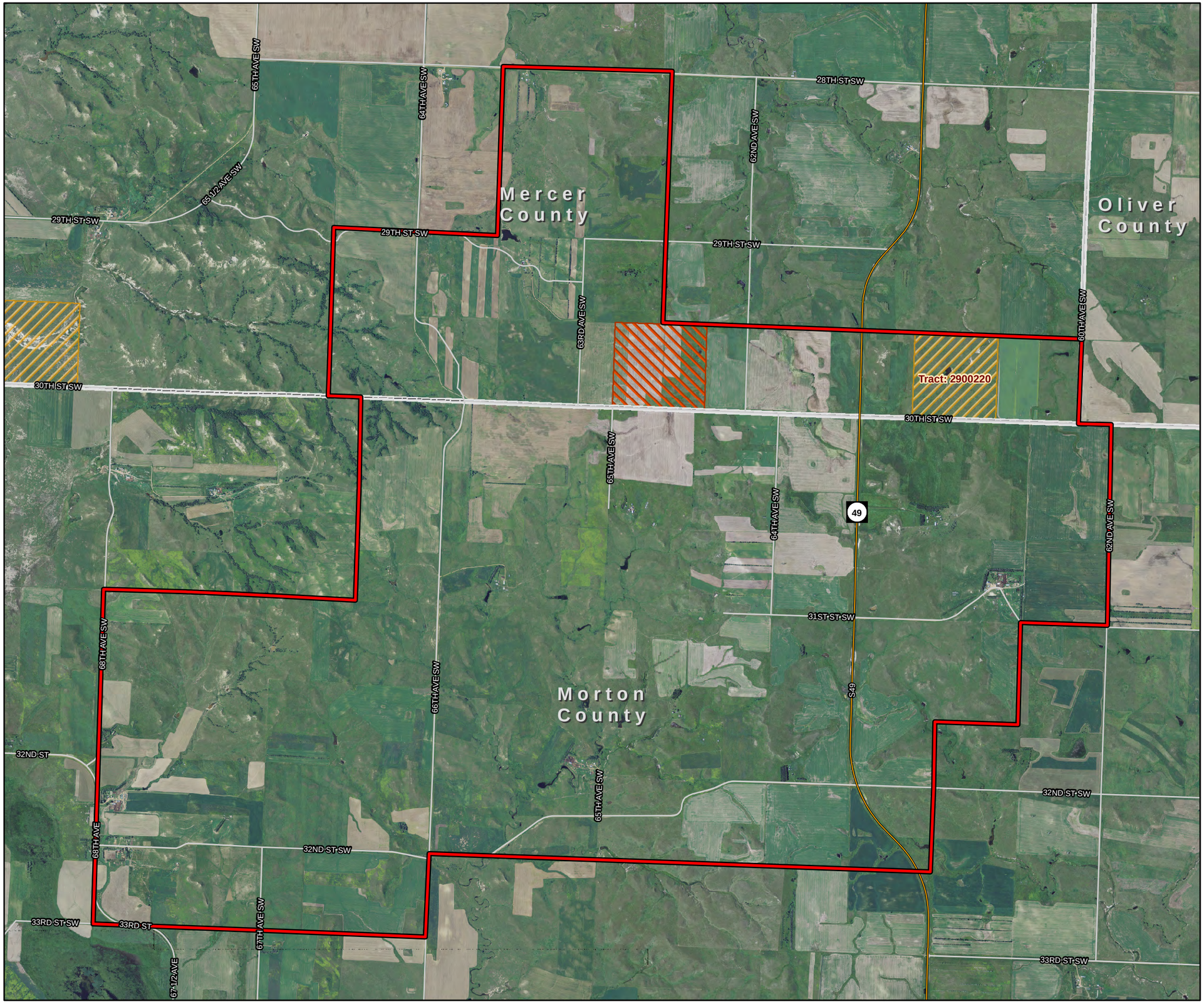
N

Feet
3,000 0 3,000

Meters
1,000 0 1,000

Exhibit 4

EXCLUSION AND AVOIDANCE AREAS MAP
Clean Energy #1 Wind Project
Allete Clean Energy
Morton & Mercer Counties, North Dakota



State Highway

Local Road

ND State Land Dept. Administered Property

Private Land Open to Sportsmen (PLOTS)

Preliminary Project Boundary

County Boundary

Data Sources:
Project Boundary - Allete Clean Energy
Roads, Administrative Boundaries - ND DOT
Imagery - FSA NAIP, 2010

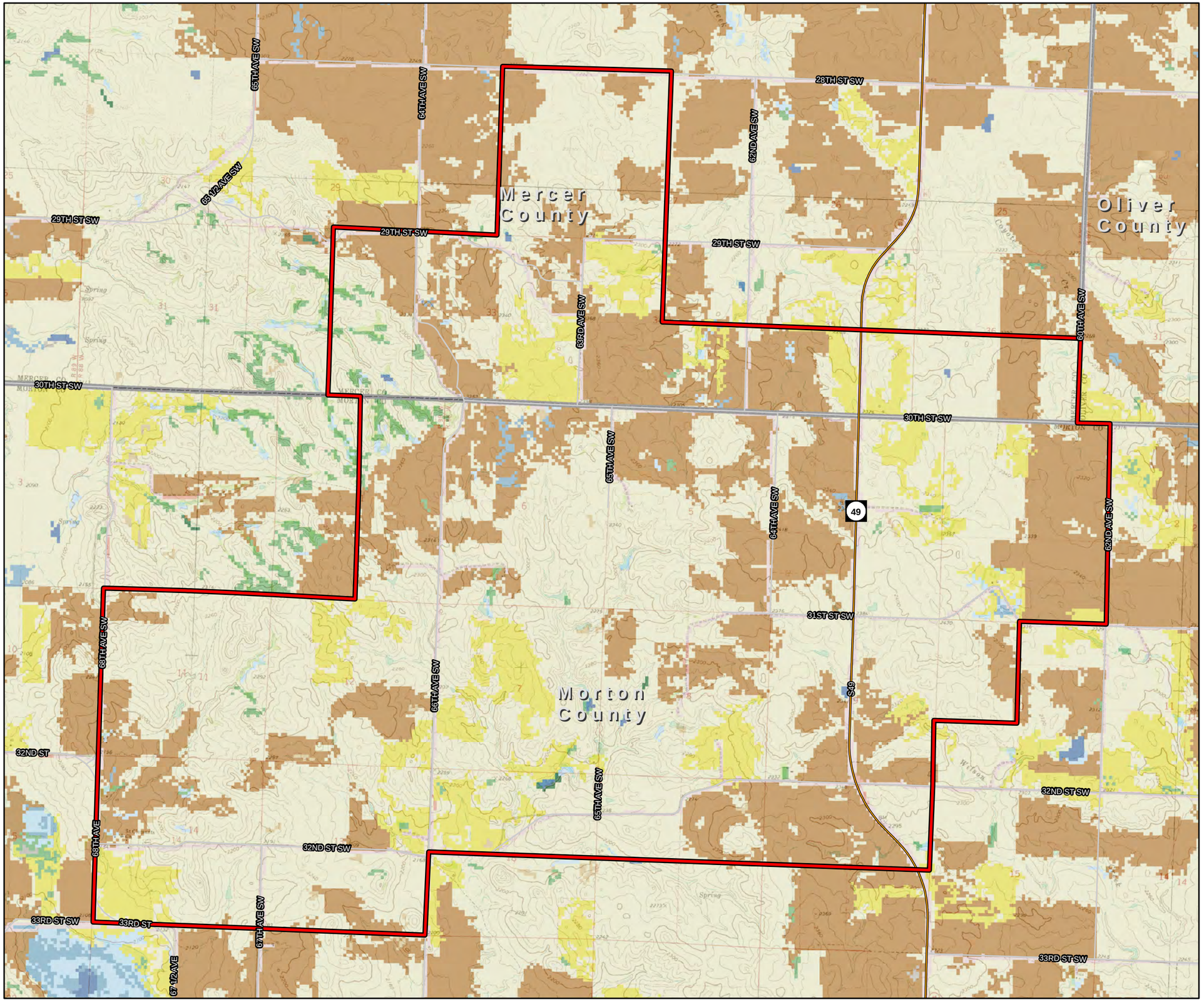
N

Feet
3,000 0 3,000

Meters
1,000 0 1,000

Exhibit 5

PUBLIC LANDS AND EASEMENTS MAP
Clean Energy #1 Wind Project
Allete Clean Energy
Morton & Mercer Counties, North Dakota



- State Highway
- Local Road
- Preliminary Project Boundary
- County Boundary

National Landcover Data

- Open Water
- Developed, Open Space
- Developed, Low Intensity
- Barren Land (Rock/Sand/Clay)
- Deciduous Forest
- Shrub/Scrub
- Grassland/Herbaceous
- Pasture/Hay
- Cultivated Crops
- Woody Wetlands
- Emergent Herbaceous Wetlands

Data Sources:
Project Boundary - Allete Clean Energy
Roads, Administrative Boundaries - ND DOT
Landcover - NLCD2001
Topography - USGS DRG

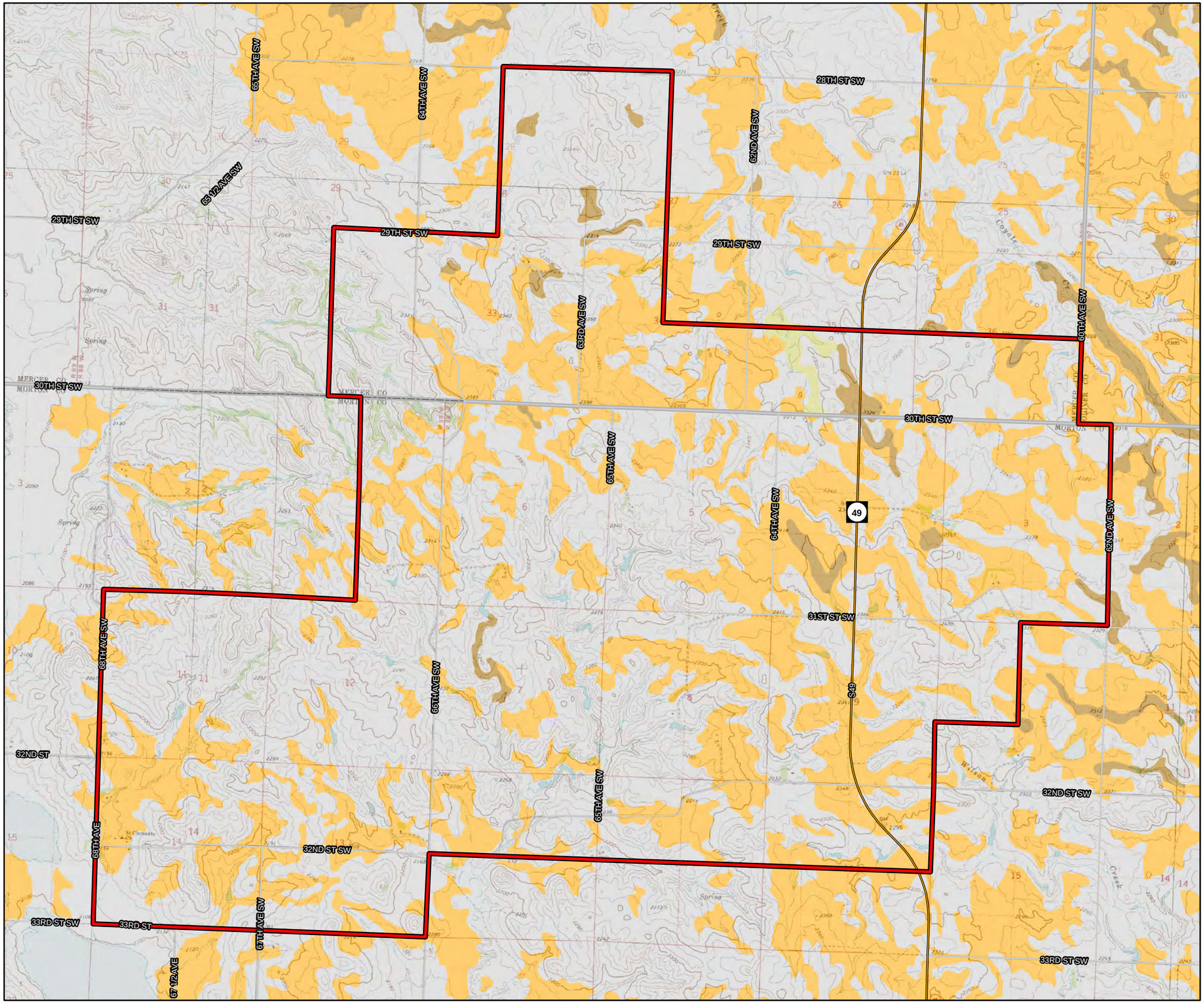
N

Feet
3,000 0 3,000

Meters
1,000 0 1,000

Exhibit 6

LANDCOVER MAP
Clean Energy #1 Wind Project
Allete Clean Energy
Morton & Mercer Counties, North Dakota



Project Boundary

County Boundary

Farmland Classification

All areas are prime farmland

Farmland of statewide importance

Not prime farmland

Prime farmland if drained

Data Sources:
Prime Farmland - USDA NRCS SSURGO Soils Database
Roads, Administrative Boundaries - NDDOT
Topography - USGS DRG

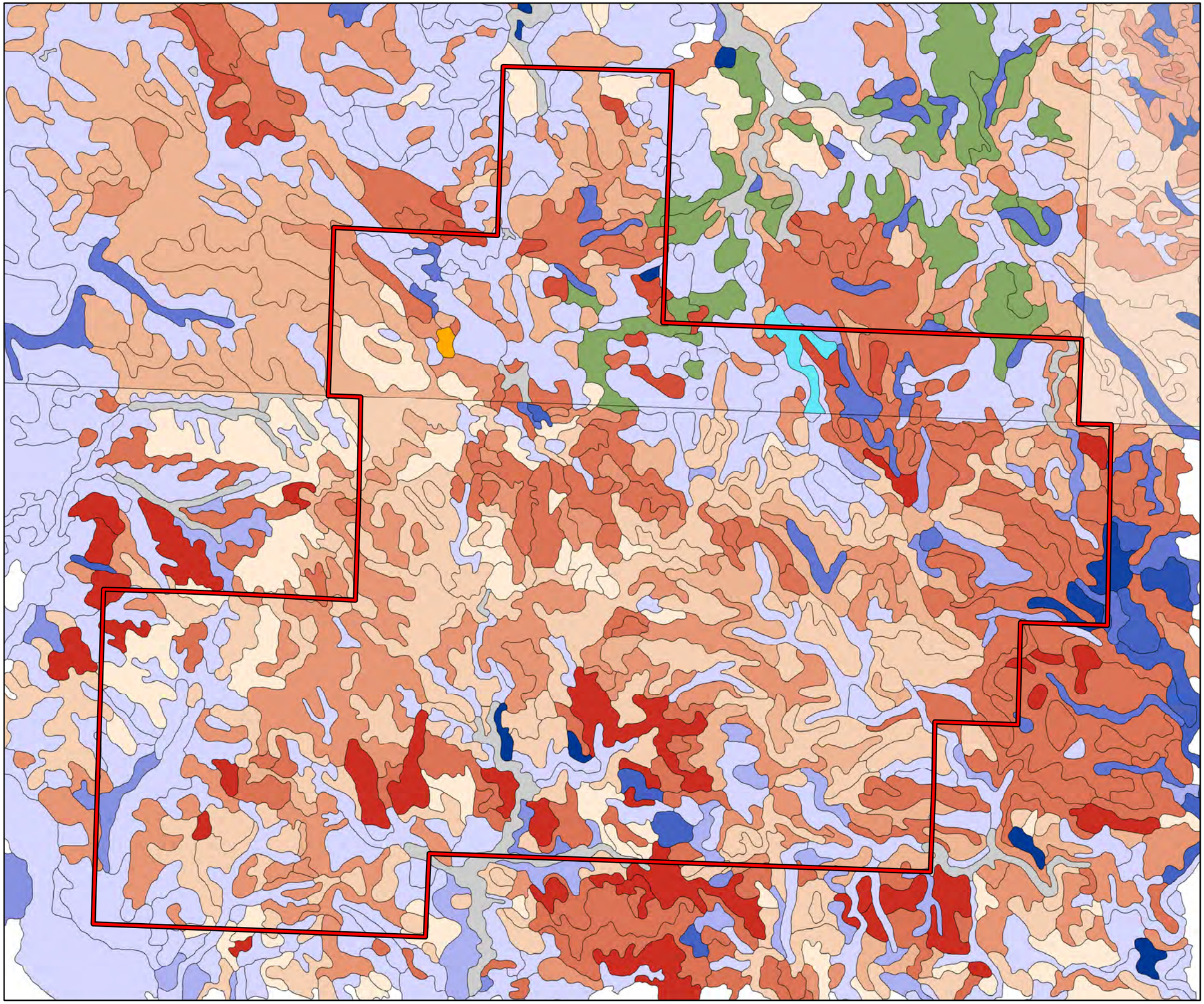
N

Feet
3,000 0 3,000

Meters
1,000 0 1,000

Exhibit 7

PRIME FARMLAND DISTRIBUTION
Clean Energy #1 Wind Project
Allete Clean Energy
Morton & Mercer Counties, North Dakota



Project Boundary

County Boundary

Soil Parent Material Type

- Unknown
- Fine-Silty Glaciolacustrine Deposits
- Fine-Silty Loess over Till
- Fine-Silty Loess over Fine-Loamy Till
- Coarse-Silty Loess
- Eolian Deposits
- Fine-Loamy Till
- Clayey Alluvium
- Fine-Silty Alluvium
- Fine-Loamy Alluvium
- Loamy Alluvium
- Coarse-Loamy Alluvium
- Sandy Alluvium and/or Eolian Sands over Clayey Alluvium
- Sandy Alluvium Derived from Sedimentary Rock
- Sandy and Gravelly Alluvium
- Clayey Residuum
- Fine-Silty Residuum
- Fine-Loamy Residuum Weathered from Sedimentary Rock
- Loamy Residuum
- Coarse-Loamy Residuum
- Coarse-Loamy Residuum Weathered from Sandstone
- Sandy Residuum
- Residuum

Data Sources:
Soil Parent Material - USDA NRCS SSURGO Soils Database
Roads, Administrative Boundaries - NDDOT
Topography - USGS DRG

N

Feet

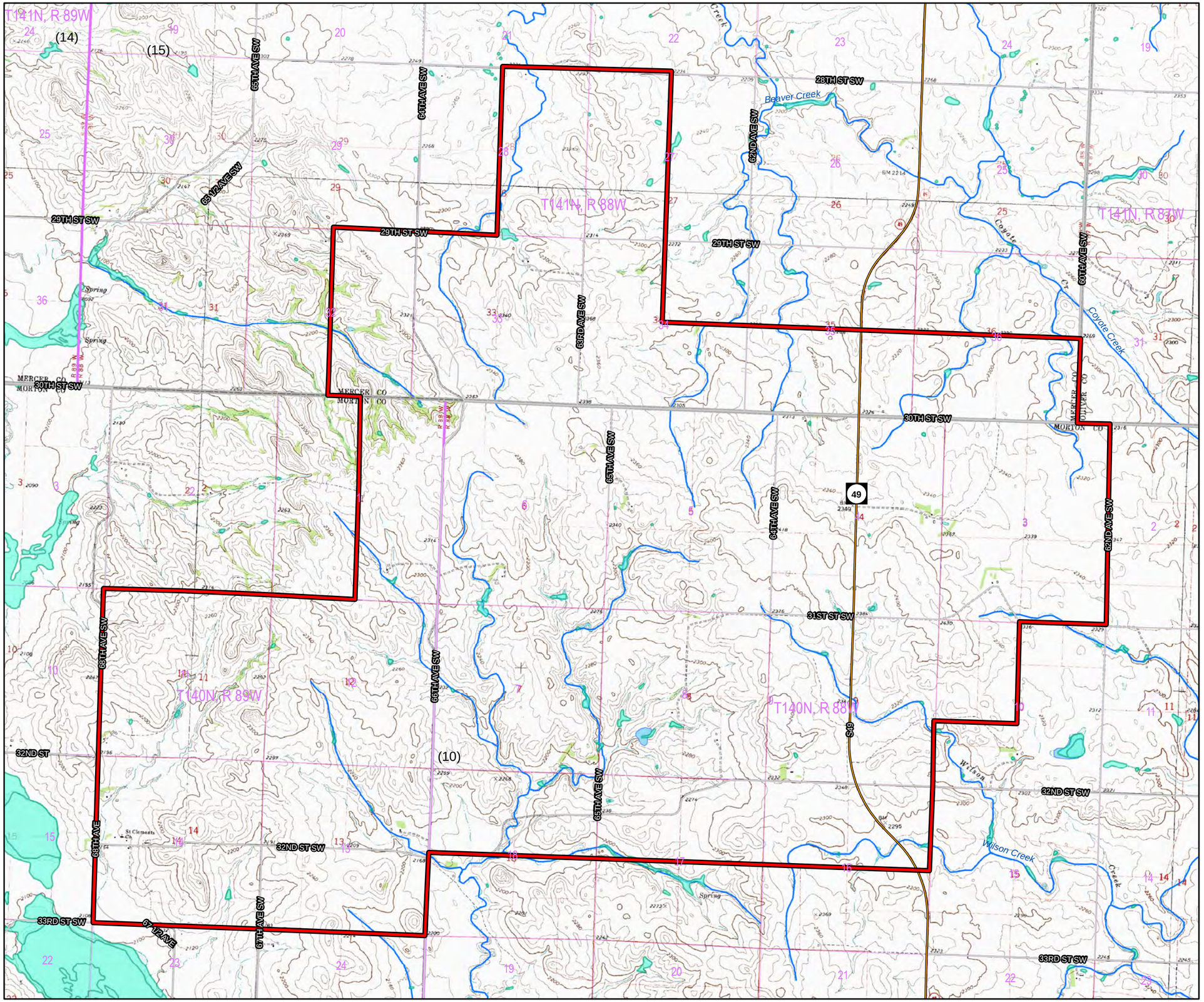
3,000 0 3,000

Meters

1,000 0 1,000

Exhibit 8

SOIL PARENT MATERIAL MAP
Clean Energy #1 Wind Project
Allete Clean Energy
Morton & Mercer Counties, North Dakota



- Watercourse (North Dakota 100k)
- Waterbody (North Dakota 100k)
- National Wetland Inventory (USFWS)
- Project Boundary
- County Boundary

Data Sources:
Preliminary Project Data - Allete Clean Energy
National Wetlands Inventory - USFWS
Roads, Water Features, Administrative Boundaries - NDDOT
Topography - USGS DRG

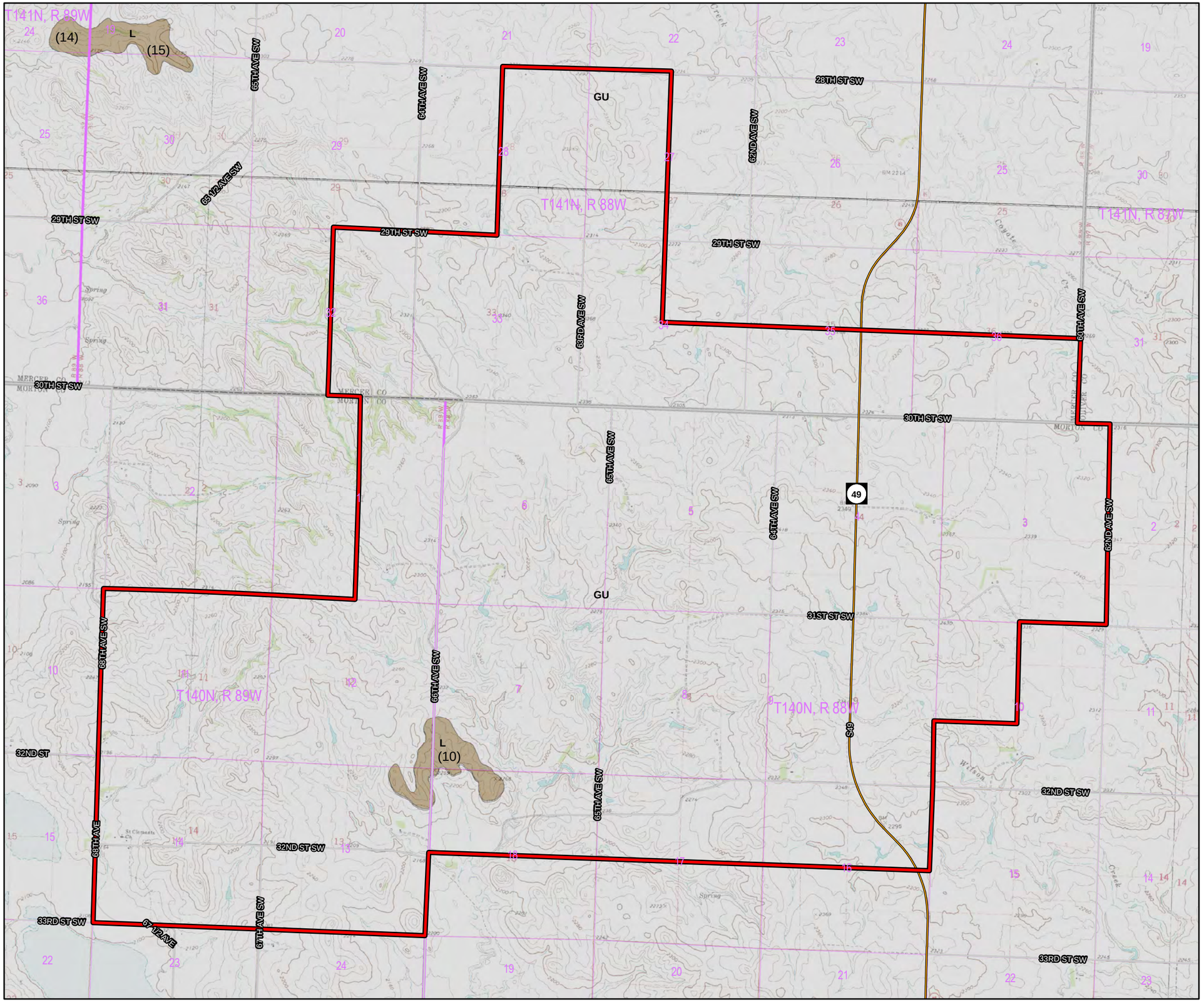
N

Feet
3,000 0 3,000

Meters
1,000 0 1,000

Exhibit 9

NWI MAP
Clean Energy #1 Wind Project
Allete Clean Energy
Morton & Mercer Counties, North Dakota



Project Boundary

County Boundary

Unit Descriptions*

(GU) Geology Undifferentiated

(m) Area of Mined Lignite

(L) Economic Coal Deposit
Economic Coal Deposits are those that meet the minimum criteria** established by the coal companies operating surface mines in North Dakota.

(Lf) Economic Coal Deposit
The boundaries of these economic coal deposits were modified from a map provided by The Falkirk Mining Company.

Data Sources:
Preliminary Project Data - Allete Clean Energy
Lignite Resources - Edward Murphy, ND Geological Survey, 2009
Roads, Water Features, Administrative Boundaries - NDDOT
Topography - USGS DRG

Notes:
* Coal beds within project boundary are labeled with the thickness (in feet) of Mineable Lignite. Coal thicknesses were determined by interpretation of electric logs from individual drill holes. Gamma and density logs were typically available for coal exploration holes but oil wells were often limited to a gamma log run through surface casing.
** These economic criteria include a minimum cumulative coal thickness of ten feet-typically occuring in less than two beds, a minimum individual bed thickness of at least 2.5 feet, a ratio of overburden to coal thickness of not more than 10:1, a minimum of 25 feet of overburden, and a maximum depth to coal of approximately 150 feet.

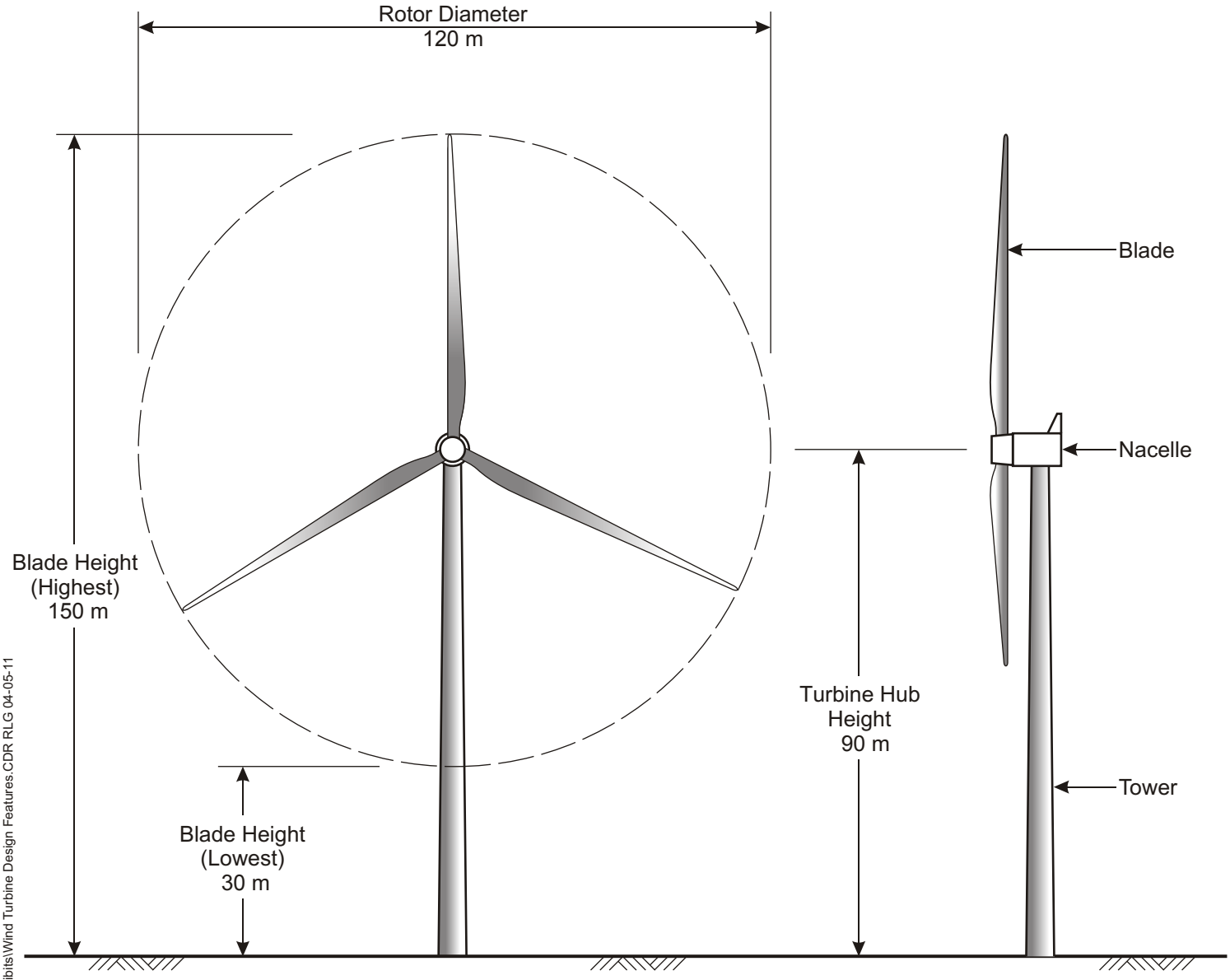
N

Feet
3,000 0 3,000

Meters
1,000 0 1,000

Exhibit 10

LIGNITE RESOURCES MAP
Clean Energy #1 Wind Project
Allete Clean Energy
Morton & Mercer Counties, North Dakota



NOTE: Based on an undefined Wind Turbine (2.0 - 3.0 MW), 108 dBA.
Total Project Rated Capacity = 100 MW

P:\Mpls\34 ND\33\34331007\WorkFiles\Permitting\NDPSC\Final Production Package\Exhibits\Wind Turbine Design Features.CDR RLG 04-05-11

Exhibit 11

WIND TURBINE DESIGN FEATURES
ACE1 Wind Project

Appendices

Appendix A

Studies and Assessments

Site Characterization Study of the Allete Clean Energy Project

Prepared for:

BARR Engineering Company
4700 West 77th Street
Minneapolis, Minnesota 55435

and

Allete Clean Energy
An Allete Company
30 West Superior Street
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Prepared by:

Kristen Chodachek and Clayton Derby
Western EcoSystems Technology, Inc.
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Bismarck, North Dakota 58503

January 20, 2012

WEST Inc.

NATURAL RESOURCES ◆ SCIENTIFIC SOLUTIONS

EXECUTIVE SUMMARY

The proposed Allete Clean Energy Project (ACEP), currently about 13,029 acres (20.4 square miles [mi^2]) is located in Mercer and Morton Counties, North Dakota. Biological resources within the ACEP were evaluated through a search of existing data and site visits on October 18 and 28, 2011. The purpose of this report is to characterize biological resources in the proposed project area and recommend additional biological resource surveys are warranted.

The landscape within the project area has a limited number of wetlands but wetlands are fairly evenly distributed throughout the wind resource area (WRA), with the exception of one larger wetland area near the center of the project. Topography is flat to rolling, with elevations ranging from 2,103-2,441 feet (ft; 641 to 744 meters [m]) above sea level. Ownership within the ACEP is all private. About 53% of the ACEP is native grasslands. The next most common habitats are agriculture lands, which comprises about 38%, and planted grasslands which comprise 6%, of the ACEP. The remaining 4% was comprised of woodland, developed areas, water, barren areas, and shrubland.

One of the major concerns of state and federal wildlife agencies in regards to wind energy facilities is displacement impacts from facilities that are placed in native grasslands and other native habitats. The ACEP is primarily comprised of native grassland, so it is likely that some grassland-dependent species will be displaced. It is unclear if this displacement results in population impacts to grassland nesting species.

Based on National Wetland Inventory (NWI) polygon data, there are approximately 227 acres (0.4 mi^2) of wetlands, not including streams and rivers, found throughout the ACEP. About 1.4% of the total ACEP is wetlands, excluding rivers and streams. Approximately 78% of wetlands are freshwater ponds, with the remaining 22% being comprised of freshwater emergent wetlands.

No federally-listed endangered, threatened, or candidate plant species are known to occur in the ACEP. Seven wildlife species listed as endangered, threatened, or candidate species by the USFWS are known to occur or potentially could occur in Mercer and Morton Counties: pallid sturgeon, gray wolf, black-footed ferret, least tern, piping plover, Sprague's pipit, and whooping crane. Of these the Sprague's pipit has the highest likelihood of occurrence within the ACEP. Whooping crane may also occur during migration. Habitat for the other federally-listed species is either completely lacking or extremely limited in the region.

The State of North Dakota maintains a list of 100 species of conservation concern. Several of these species have been documented near the project area. Impacts to many of these species can be avoided or minimized by focusing construction activities on cultivated landscapes.

Numerous diurnal raptor species, owls, or vultures are likely to occur in the ACEP during some portion of the year, including during the breeding, migration, or winter seasons. Use rates within the ACEP are not expected to be heavily influenced by topography or prey densities compared

to areas outside of the WRA. The project area does not appear to have any factors that would concentrate raptor use in one area compared to another as raptors will hunt in native areas as well as cultivated agricultural areas. Information from another project in Morton and Oliver Counties survey effort documented overall use rates that were low to moderate when compared to other projects across the country. It is likely that the use rates in the ACEP would be similar as the adjacent study. One raptor nest structure was observed during the site visits but potential nest structures for above ground nesting species were present in the form of living and dead trees. Grassland areas could also provide nesting habitats for ground-nesting raptors, such as the northern harrier.

Potential migrants through the proposed ACEP include passerines, raptors, and waterfowl. Wetlands and grasslands scattered throughout the ACEP may provide stopover habitat for migrants or individuals during post-breeding dispersal. Harvested grain crops, such as wheat fields that were observed during the site visits, could serve as a feeding area that could attract migrating waterfowl. These types of habitats are found throughout the region and therefore their presence in the ACEP should not concentrate bird use as compared to adjacent areas.

There are several species of bats that could be found in the ACEP, including the big brown bat, hoary bat, eastern red bat, little brown bat, northern long-eared bat, and the silver-haired bat Potential roosting habitat within the ACEP is found in the form of trees and buildings; no caves were observed during the site visits. Bats generally forage over water and open spaces, such as agricultural fields, grasslands, streams, and wetlands/ponds. Bats may forage over the entire ACEP, although the extent of use is not known. Bats may prey on insects that are likely to concentrate over water in wetlands and streams, and these types of areas found in the ACEP are most likely to attract foraging bats.

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LIST OF FIGURES

LIST OF APPENDICES

Table E-1. Site characterization summary of the Allete Clean Energy Project.

Resource	Project Considerations	Potential Future Studies	Timing of Potential Studies
Vegetation			
Wetlands and Waters of the US	Wetlands and Waters of the US occupy a portion of the project area. Site away from wetland areas to minimize wildlife impacts.	Conduct a wetland delineation once the facility design has been determined, but prior to finalizing the layout. Micro-site facilities when possible to avoid or minimize impacts to wetlands/Waters of the US.	Summer.
Native Grasslands	Native grasslands are present in the project area. Site away from native grassland areas to minimize impacts.	Update vegetation map of selected regions to help micro-site facility to minimize impacts to native grasslands.	Update current mapping if needed.
Wildlife			
Migratory Birds	Migrating birds likely pass over the project area and could utilize the area. Whooping cranes may migrate over project area.	Fixed-point bird use surveys. No specific surveys for whooping cranes	Spring, Summer, and Fall.
Breeding Birds	The grasslands and wetlands in the project area provide potential nesting habitat for many species, including Sprague's pipit.	Breeding bird transect surveys.	Summer.
Bats	Suitable habitats for roosting and foraging bats are present.	Acoustic bat surveys.	Summer and Fall.

INTRODUCTION

Knowledge of biological resource issues early in the development phase of wind energy facilities helps the industry identify, avoid, and minimize future problems. This report describes biological resources present within the Allete Wind Energy Project (ACEP) and evaluates these general characteristics as related to potential or known impacts on the resources from wind energy facilities.

STUDY AREA

The proposed 13,029-acre (20.4-square mile [mi^2]) ACEP is located in Mercer and Morton Counties, North Dakota (Figure 1), approximately 9.0 miles (14.6 kilometers [km]) north of Glen Ullin. The site is located entirely within the Missouri Plateau Level IV Ecoregion (Bryce et al. 1996; Figure 2). The Missouri Plateau is a glaciated region characterized by rolling plains and drainages. Sandstone buttes or outcrops are also common in this region. The area was historically short to mixed grass prairie. Some of the area remains in native grasslands as pastureland for grazing and other areas have been converted to cultivated agriculture.

The landscape within the project area has a limited number of wetlands, but the wetlands are fairly evenly distributed throughout the ACEP (Figure 3). Topography is flat to rolling, with elevations ranging from 2,103-2,441 feet (ft; 641 to 744 meters [m]) above sea level (Figures 3 and 4).

Ownership within the ACEP is all private. Trees are primarily located in the northwest corner of the ACEP and are associated with small woodlots surrounding drainages, homesteads, and shelter belts.

Figure 1. Location of the Allete Clean Energy Project.

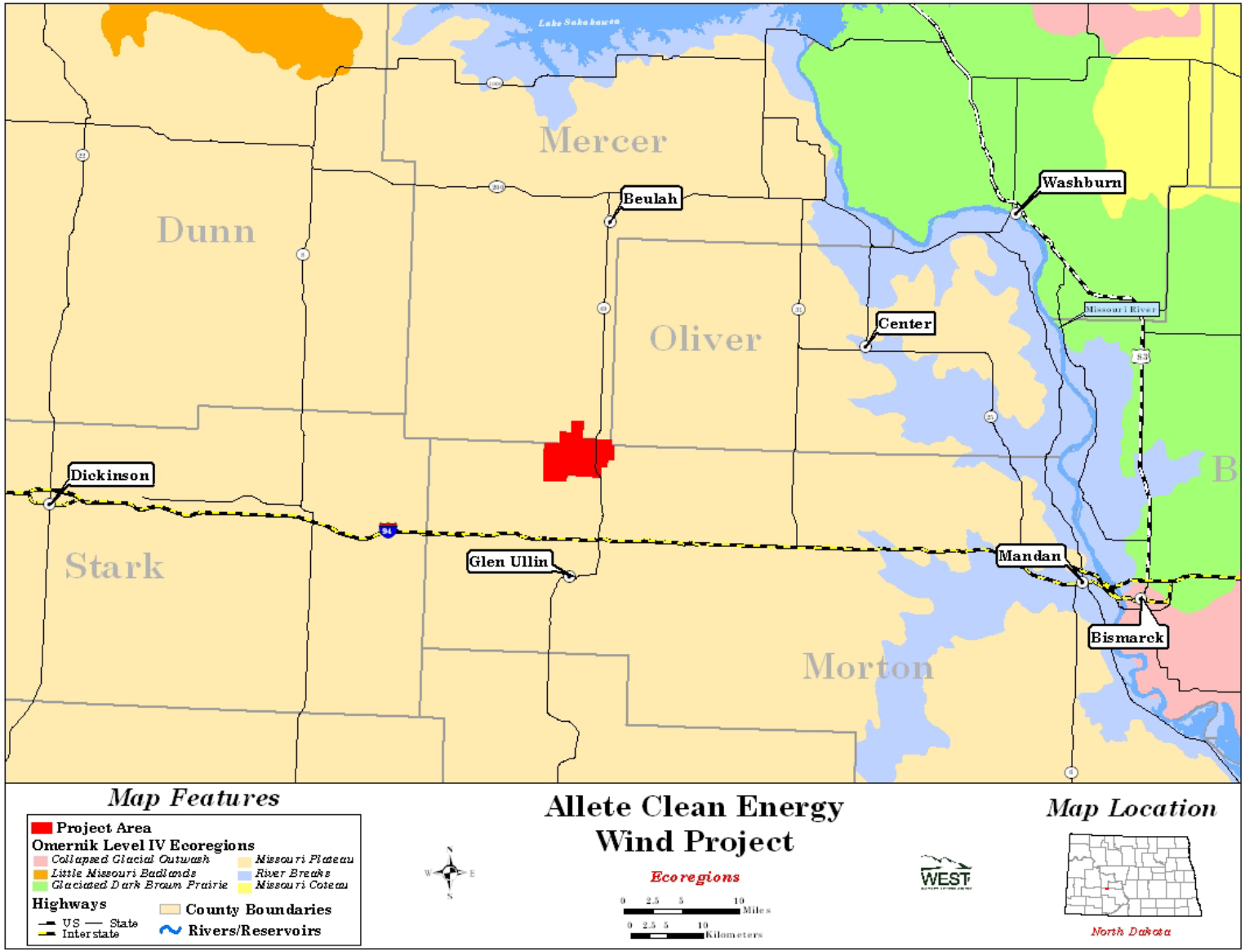

Figure 2. Ecoregion map of the Allete Clean Energy Project.

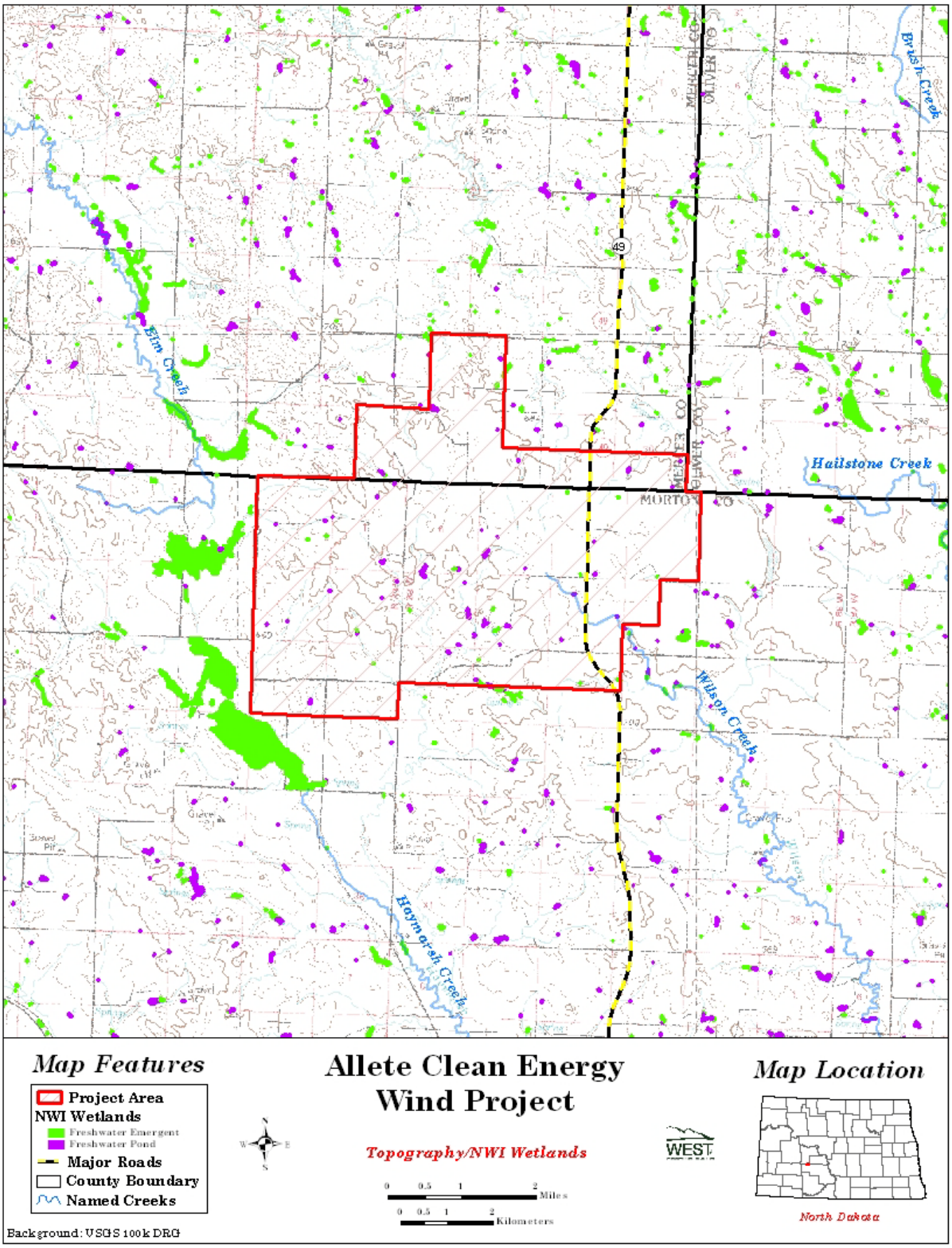

Figure 3. National Wetland Inventory (NWI) wetland map and topography of the Allete Clean Energy Project.

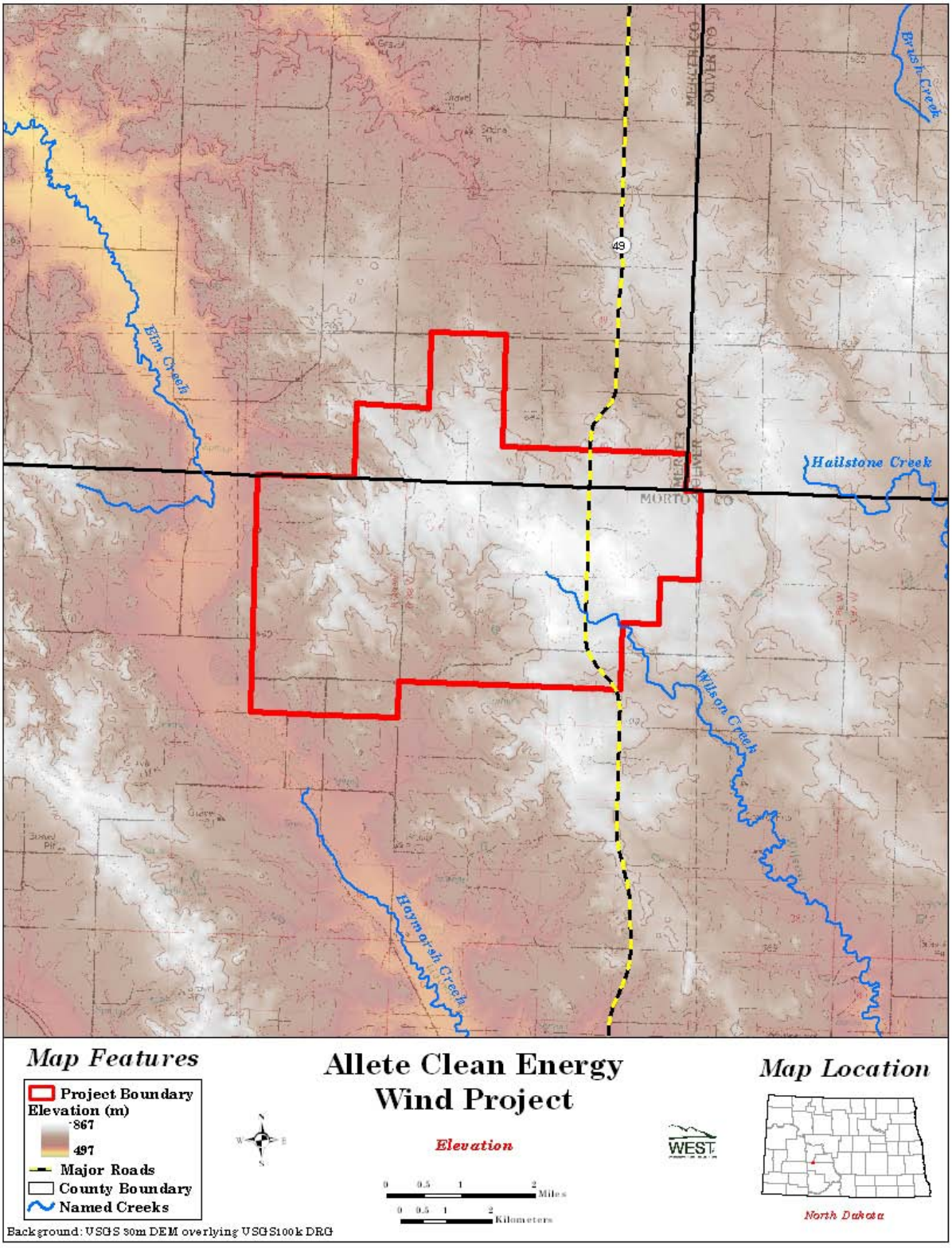

Figure 4. Digital elevation model of the Allete Clean Energy Project.

METHODS

Biological resources within the ACEP were evaluated through a search of existing data and two site visits. The site visits entailed an examination of the ACEP from public roads on October 18, 2011 and October 28, 2011, during which biological features, potential wildlife habitat, including plant communities, topography features, potential raptor nesting habitat and prey populations, and a habitat assessment survey were conducted. All wildlife species observed during the site visits were recorded (see Wildlife section below) and photographs were taken of the ACEP (Appendix A).

Several sources of available data were used to identify biological resources within the ACEP, including published literature, field guides, and public data sets. Information about sensitive species presence and locations will be requested from the North Dakota Game and Fish Department (NDGFD) and US Fish and Wildlife Service (USFWS) by BARR Engineering Company. Responses from the NDGFD and USFWS are pending and will be included in Appendix B when available.

LAND COVER

According to the habitat assessment conducted on October 28, 2011, approximately 59% of the ACEP is grasslands (Table 1; Figures 5 and 6). The majority (53%) of the grasslands appear to be native prairie. Cropland (37.6%), shrubland (2.8%), water/wetland (2.4%), and barren areas (1.0%) were the next most common land use (Table 1). The remaining landcover types composed less than 1% of the area.

Land Use	Acres	Percent
Grassland - Native	6,855.22	52.5
Cropland	4,897.77	37.6
Grassland - nonnative	816.92	6.3
Woodland	166.31	1.3
Developed	157.77	1.2
Barren	60.85	0.5
Water	34.95	0.3
Grassland - unknown	24.03	0.2
Shrubs	15.47	0.1
Total	**13,029.29**	**100**

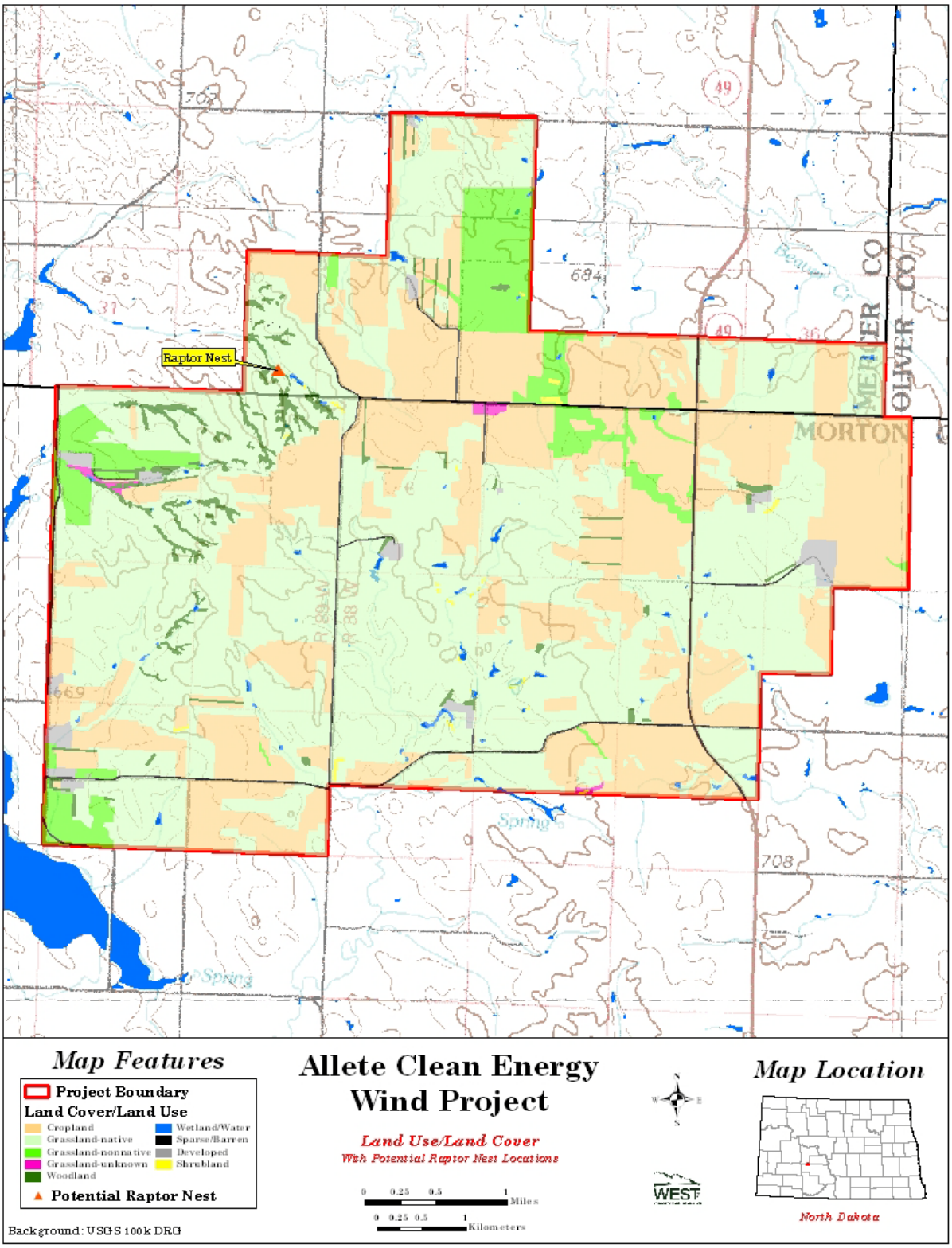

Figure 5. Land use/land cover and raptor nest locations within the Allete Clean Energy Project.

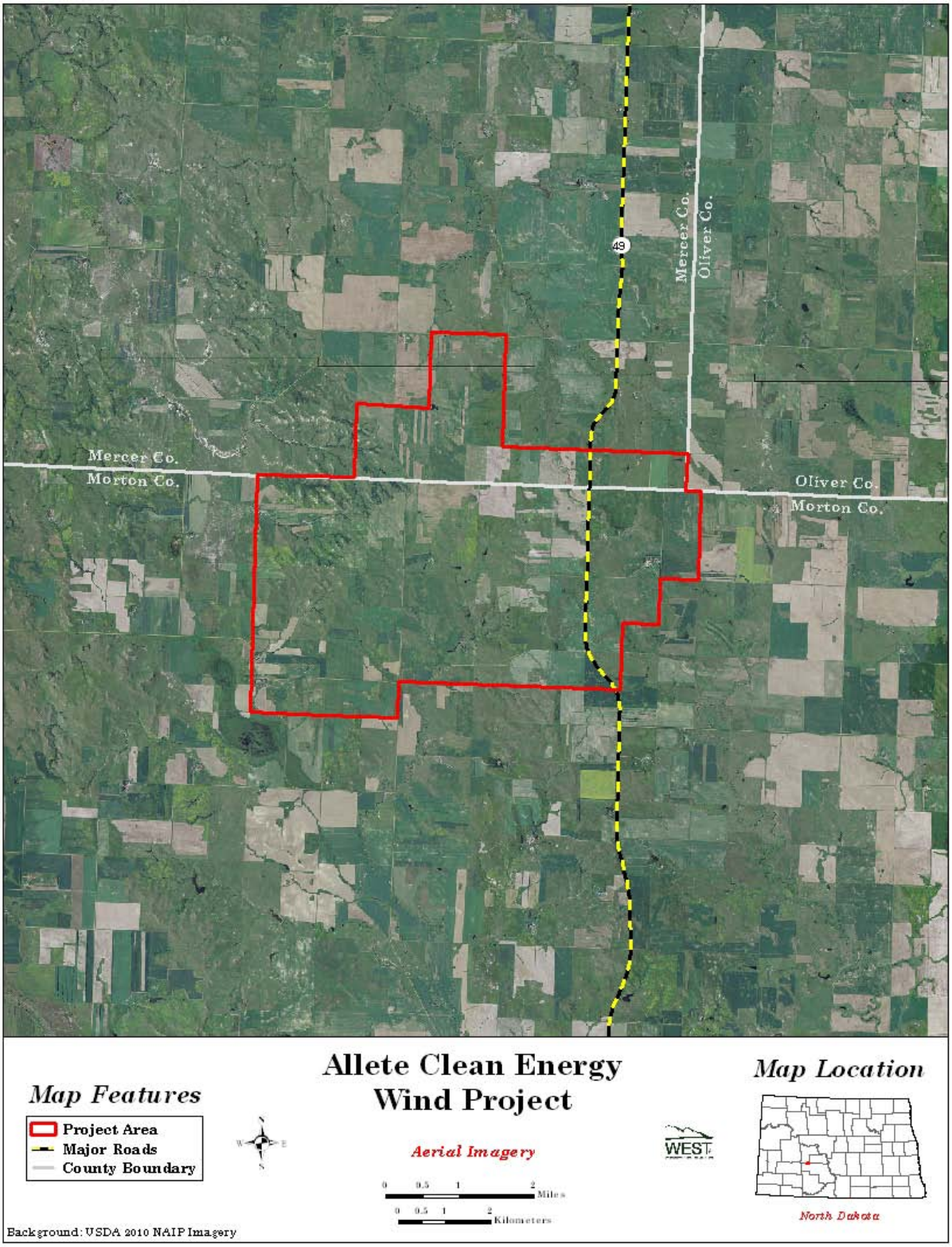

Figure 6. Aerial photograph of the Allete Clean Energy Project.

Sensitive and Special Status Plant Species

No federally-listed endangered, threatened, or candidate plant species are known to occur in the ACEP. Only one federally listed plant species is found in North Dakota, the western prairie fringed orchid (*Platanthera praeclara*), which is only found in the southeastern part of the State (USFWS NDFO 2011b). Furthermore, North Dakota does not maintain a list of plant species of concern. No impacts to special status plant species are expected.

Sensitive Habitats

The presence of wind turbines may alter the landscape so that wildlife habitat use patterns are altered, possibly displacing wildlife from the ACEP. The greatest concern with displacement impacts are for wind energy facilities that are placed in native grasslands and other native habitats. As the project area contains both native and planted grassland areas, displacement of some grassland-dependent species may occur (see the Breeding Birds section for more discussion on potential displacement impacts).

Wetlands and Riparian Areas

Broad-scale information concerning wetlands is based on land use/land cover data (USGS 2002; Figure 7), aerial photographs (Figure 8), and the site visits. Formal wetland delineations have not been completed. According to the National Wetlands Inventory (NWI) polygon data (USFWS NWI 2007), 1.4% of the total ACEP is composed of wetland habitat, excluding rivers and streams (Figure 3, Table 2). The highest percentage (77.6%) of wetlands are freshwater ponds, with the remaining 22.4% being composed of freshwater emergent wetlands (Table 2). Formal wetland delineations should be completed prior to construction. Both wetland types could be utilized by whooping cranes as roosting habitat depending on site specific conditions. More information on whooping cranes and wetlands is found in the whooping crane section below.

Wetland Type	Acres	Percent
Freshwater Emergent Wetland	7.12	22.4
Freshwater Pond	24.19	77.6
Total	**227.46**	**100**

WILDLIFE

Wildlife species associated with grasslands, cultivated agricultural landscapes, and deciduous/coniferous treed areas are expected to be the most common species in the ACEP. A list of species observed during the site visit is provided in Table 3.

Table 3. Wildlife species observed at the Allete Clean Energy Project during the site visits on October 18, 2011 and October 28, 2011.

Species	Scientific Name
Birds	
black-billed magpie	*Pica hudsonia*
mallard	*Anas platyrhynchos*
northern harrier	*Circus cyaneus*
red-tailed hawk	*Buteo jamaicensis*
red-winged blackbird	*Agelaius phoeniceus*
ring-necked pheasant	*Phasianus colchicus*
rock dove	*Columbia livia*
western meadowlark	*Sturnella neglecta*
Mammals	
white-tailed deer	*Odocoileus virginianus*

Federal Listed Species

The USFWS lists six species as federally endangered or threatened with known or potential occurrence in Mercer and/or Morton Counties, including three birds, two mammals, and one fish (USFWS 2011b, USFWS NDFO 2011a; Table 4). An additional bird species, Sprague's pipit (*Anthus spragueii*), is listed as a federal candidate (USFWS 2011b, USFWS NDFO 2011a; Table 4). All federally listed species potentially occurring in the ACEP are addressed below.

Table 4. Federally listed species with known or potential occurrence in Mercer and/or Morton Counties, North Dakota.

Species	Species Name	Status[1]	Potential for Occurrence
Birds			
interior least tern	*Sterna antillarum*	FE	Possible Migrant
piping plover	*Charadrius melodus*	FT	Possible Migrant
Sprague's pipit	*Anthus spragueii*	FC	Possible
whooping crane	*Grus americana*	FE	Possible Migrant
Mammals			
black-footed ferret	*Mustela nigripes*	FE	Unlikely
gray wolf	*Canis lupus*	FE	Unlikely
Fish			
pallid sturgeon	*Scaphirhynchus albus*	FE	Unlikely

FE = Federal endangered species; FT = Federal threatened species; FC = Federal candidate species for listing (USFWS 2011b, USFWS NDFO 2011a)

Pallid Sturgeon

The pallid sturgeon (*Scaphirhynchus albus*) is a large bottom-dwelling fish species that historically ranged the entire length of the Missouri River. Today, their distribution in the Missouri River is restricted by dams and habitat loss has occurred due to river channelization, impoundment construction, and changes in water flow (NSU 1998). The pallid sturgeon is known to occur in the Missouri River, which borders both Mercer and Morton Counties (USFWS 2011b, USFWS NDFO 2011a). No habitat for the species occurs within or near the project area. Erosion control and spill prevention best management practices will eliminate any potential impacts from runoff at the site reaching the Missouri River. No impacts to pallid sturgeon are expected.

Black-Footed Ferret

The black-footed ferret (*Mustela nigripes*) is listed as an endangered species under the Endangered Species Act (ESA 1973). Black-footed ferrets were once found throughout the Great Plains, from southern Canada through Texas, including portions of North Dakota (USFWS 2011b, USFWS NDFO 2011a). Black-footed ferrets rely almost exclusively on prairie dog (*Cynomys* spp.) towns for food and shelter. There are no known populations, wild or introduced, in North Dakota and no prairie dog colonies were located during the site visits. Impacts to black-footed ferrets are not expected.

Gray Wolf

Historically, the gray wolf (*Canis lupus*) ranged from the east coast to the west coast and from Alaska to Mexico, except for the mid-Atlantic states and the Southeast (USFWS 2011b). The gray wolf became listed by the ESA in 1978 (USFWS NDFO 2011a). Gray wolves use a variety of habitats, including prairie, forest, mountains and wetlands, preferring areas with a low density of people and roads. Currently, the gray wolf is listed as endangered west of the Missouri River in North Dakota. There are no known populations of gray wolves near the ACEP, but wolves may be found incidentally throughout North Dakota. No impacts to the species are expected.

Interior Least Tern

The least tern (*Sterna antillarum*) is the smallest of the North American terns and, in North Dakota, the population may breed along exposed sandbars of the Missouri River (USFWS NDFO 2011a). It is believed that they are endangered due in part to unnatural water fluctuations caused by water management. Least terns and piping plovers can be found nesting together along the Missouri River on the eastern side of Mercer and Morton Counties. Conservation measures include creation of appropriate unvegetated habitat, protection of nesting areas from disturbance, and control of water fluctuations (USFWS 2011b).

While no potential nesting habitat for the least terns exists within the ACEP, the potential exists for the species to fly through the site during migration. Little is known concerning the migration habits of the least terns, and it is not known if the species migrates along major river systems, if this species flies in a direct north-south pattern, or at what altitude this species flies during migration. However, the ACEP is unlikely to have any effect on the species due to the lack of habitat.

Piping Plover

The piping plover (*Charadrius melodus*) is a small bird that breeds on exposed sandbars in the Missouri River and along beaches of alkaline wetlands in North Dakota (USFWS NDFO 2011a). They are threatened by habitat loss due to vegetation encroachment, shoreline development, and potentially water management, and disturbance by humans and other animals. The piping plover possibly occurs in Mercer and Morton Counties, with the Missouri River along the eastern border of the counties being designated Critical Habitat (USFWS 2011b). Piping plover critical habitat has also been designated for numerous alkaline basins in several counties throughout North Dakota, but not within Mercer or Morton Counties. During certain water years it is possible

that some of the manmade impoundments within the project area could provide bare shorelines for nesting areas, but these shorelines do not appear to have the alkaline qualities most often associated with preferred habitat for this species.

While no or very limited potential nesting habitat for piping plovers was observed within the ACEP, the potential exists for the species to fly through the site during migration. Little is known concerning the migration habits of the piping plover, and it is not known if the species migrates along major river systems, if this species flies in a direct north-south pattern, or at what altitude this species flies during migration. However, due to the lack of habitat, the ACEP is unlikely to have any effect on the species.

Sprague's Pipit

The Sprague's pipit is a small passerine bird of open grasslands (USFWS 2010, 2011b). This bird typically breeds and winters in open grassland with good drainage and no shrubs or trees. Within North Dakota this species is listed as a candidate species due to the loss of habitat due to overgrazing and/or the conversion to agricultural lands. According to the current range for Sprague's pipit, the ACEP falls within the known breeding range. The larger blocks of grassland (those greater than 320 acres) may be consider potential nesting habitat for the pipit. It is unclear how vulnerable the species may be to direct take at wind facilities as none have been documented as a mortality at any wind farm in the US; however, their courtship flights may place them within the rotor swept height range. The larger concern for this species may be habitat fragmentation and therefore displacement from an area (if displaced, direct impacts unlikely) as the species is only found in larger grassland tracts, typically larger than 320 acres. Minimizing impacts to grassland areas, especially native grasslands, may limit potential impact to this species.

Whooping Crane

Whooping cranes (*Grus canadensis*) are currently listed as endangered (32 FR 4001, 1967 March 11) except where nonessential experimental populations exist (66 FR 33903-33917, 2001 June 26; 62 FR 38932-38939, 1997 July 21; and 58 FR 5647-5658, 1993 January 22; see USFWS 2011b). In the US, the whooping crane was listed as threatened with extinction in 1967 and endangered in 1970 – both listings were "grandfathered" into the ESA of 1973. The peak 2007-2008 winter population of whopping cranes was 266 birds (M. Tacha, USFWS, pers. comm.). After the 2008 breeding season, it was believed that approximately 300 whooping cranes migrated south; however, this number was reduced to 247 birds after fatalities occurred during migration and especially due to fatalities occurring on the wintering grounds in 2008-2009 (M. Tacha, USFWS, pers. comm.). The current population estimate is again over 300 birds migrating south in 2011 (M. Tacha, USFWS, pers. comm.). Whooping cranes migrate from their breeding grounds in the Wood Buffalo National Park in Canada to their wintering areas in the Aransas National Wildlife Refuge in Texas (USFWS 2009). During the 2,500 mile (4,023 km) migration, most whooping cranes pass through North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and Texas.

Stehn (2007) documented a 200-mile (322-km) wide migration corridor for whooping cranes based on the historical sightings of whooping cranes from the early 1960s through 2006. This 200-mile wide corridor (100 miles [161 km] on either side of the centerline) encompasses approximately 94% of the observations and a 100-mile wide corridor subset of this encompasses approximately 82% of the observations. The ACEP is over 45 miles west of the migration centerline (Figure 8). The USFWS has expressed concern with wind energy developments and other above ground developments (e.g., transmission lines) that are built anywhere within the 200-mile wide corridor, but with more emphasis placed on those projects within the region that encompasses 75% of the observations. This region extends approximately 40 miles (64 km) to either side of the centerline. This 75% region is to the east of the ACEP slightly. The project area is west of the majority of sightings in North Dakota (Austin and Richert 2001). The closest whooping crane observation to the ACEP was 13 miles (20.8 km) to the east (Figure 7).

The potential exists for whooping cranes to fly through the area during migration. Whooping cranes generally migrate at altitudes of 1,000-6,000 ft (305-1,829 m; Stehn 2007), well above turbine height, and thus for the most part are unlikely to collide with turbines. However, as whooping cranes ascend and descend during takeoff and landing, or migrate during inclement weather, they may fly at lower altitudes and may fly at altitudes corresponding to the likely rotor-swept areas. While the National Wind Coordinating Committee (NWCC) found no reports of sandhill cranes (*Grus americana*) or whooping cranes being killed or injured by wind turbines (NWCC 2004), Smallwood and Karas (2009) reported one fatality of a sandhill crane at the Altamont Pass wind energy facility in California, and two sandhill crane fatalities have been reported in Texas (WCCA 2011). None of the sandhill crane fatalities were found during migration periods.

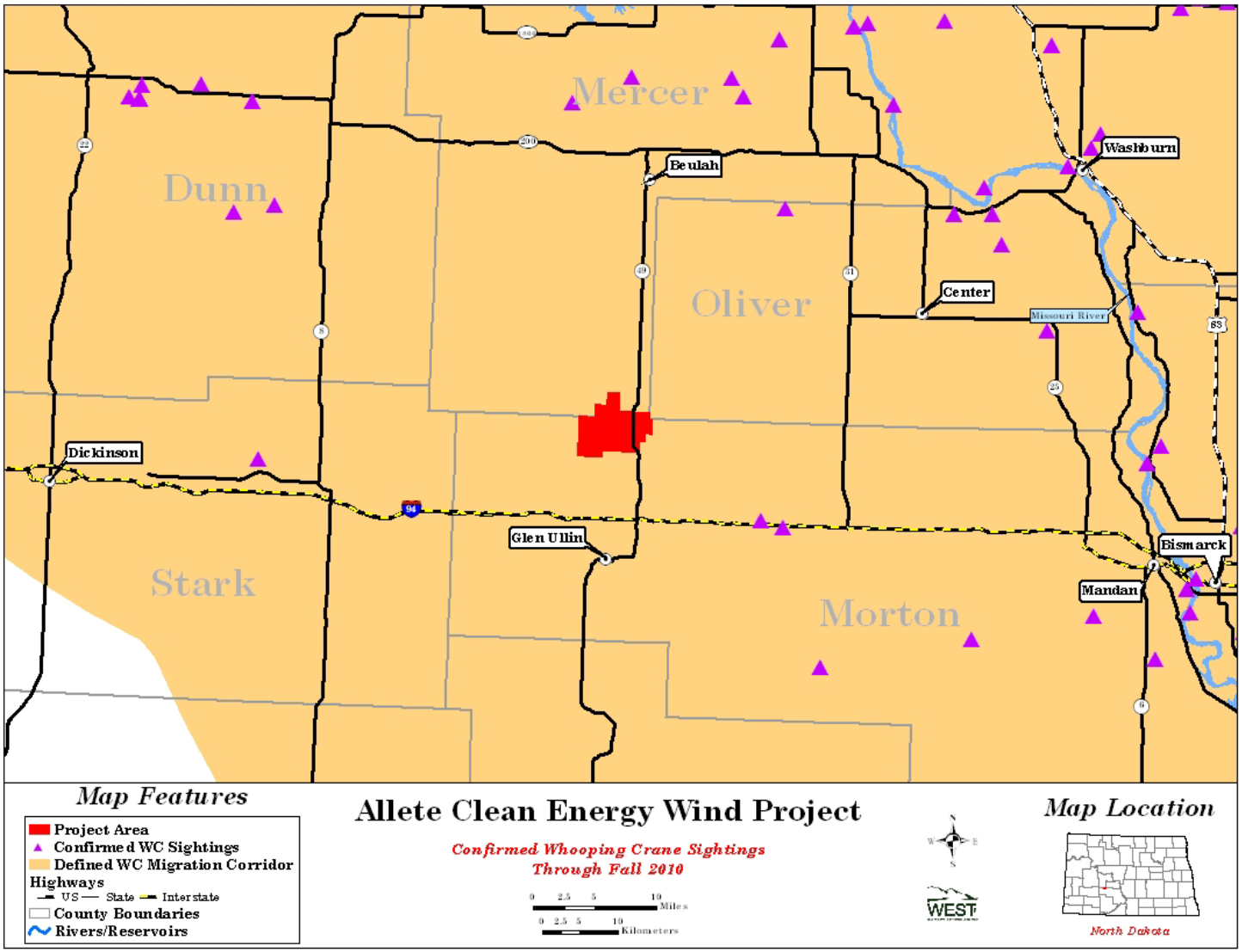

Figure 7. Whooping crane observations and migration corridor in relation to the Allete Clean Energy Project.

North Dakota Species of Concern

North Dakota does not have a state list of threatened and endangered species. North Dakota developed a Wildlife Action Plan, also known as the Comprehensive Wildlife Conservation Strategy (CWCS; NDGFD 2005). The CWCS lists focuses on the top 100 species that are considered species of conservation priority by the NDGFD (NDGFD 2004, 2005). The list is broken into three levels according to conservation need:

- Level I: Species in greatest need of conservation
- Level II: Species in need of conservation, but that have had support from other wildlife programs
- Level III: Species in moderate need of conservation, but that are on the edge of their range in North Dakota.

The full list of CWCS species is found in Appendix C. Consistent with NDGFD direction, minimizing impacts to native grasslands would lessen the potential impact to many of these species as most occur in native grassland communities.

During a fall 2008 avian use study of a project site to the northeast of the ACEP in Oliver County, Tetra Tech EC, Inc., (Tetra Tech) documented 13 species that are on the CWCS list (Tetra Tech 2008). Level I species observed included chestnut-collared longspur (*Calcarius ornatus*), grasshopper sparrow (*Ammodramus savannarum*), Franklin's gull (*Larus pipixcan*), Sprague's pipit (*Anthus spragueii*), Swainson's hawk (*Buteo swainsoni*), ferruginous hawk (*Buteo regalis*), and upland sandpiper (*Bartramia longicauda*). Level II species observed during the survey included bobolink (*Dolichonyx oryzivorus*), loggerhead shrike (*Lannius ludovicianus*), northern harrier (*Circus cyaneus*), prairie falcon (*Falco mexicanus*), short-eared owl (*Asio flammeus*), and sharp-tailed grouse (*Tympanuchus phasianellus*). No Level III species were reported. Based on the similar vegetation community and relative proximity to the ACEP, it would be expected that many of these same species could be found in the ACEP. It is also possible that limited individuals of other species on the list could be found in the ACEP as the Oliver County survey was only conducted for one season during the fall of 2008, and some species may have already migrated through the site. Use rates documented for the Tetra Tech project for all species on the CWCS list were relatively low, with the highest use reported for sharp-tailed grouse.

Sharp-tailed grouse are known to occur in within Mercer and Morton Counties, North Dakota (USGS 2006). Concern has been expressed nationally regarding the potential impact of wind facilities on prairie grouse (Pruett et al. 2009); however, very little quantitative data exist on impacts to sharp-tailed grouse from wind development.

Raptors

Species Likely To Occur In the Area

The following raptor species could occur in or near the project area during some portion of the year: bald eagle (*Haliaeetus leucocephalus*), northern harrier, sharp-shinned hawk (*Accipiter striatus*), Cooper's hawk (*A. cooperii*), northern goshawk (*A. gentilis*), broad-winged hawk (*Buteo playpterus*), Swainson's hawk, ferruginous hawk *(B. regalis),* red-tailed hawk (*B. jamaicensis*), rough-legged hawk (*B. lagopus*), American kestrel (*Falco sparverius*), and merlin (*F. columbarius*). Owl and vultures (species often grouped with raptors during some surveys) that could be found in the project area include the great-horned owl (*Bubo virginianus*), eastern screech owl (*Otus asio*), short-eared owl, and turkey vulture (*Cathartes aura*). Of these, the red-tailed hawk, American kestrel, northern harrier, Swainson's hawk, and great-horned owl are most likely to nest in the project area. Nine of these species are confirmed or suspected breeders in the project area based on county records and habitats: northern harrier, prairie falcon, Cooper's hawk, ferruginous hawk, red-tailed hawk, Swainson's hawk, American kestrel, great-horned owl, and short-eared owl (USGS 2011b). During the site visit, two red-tailed hawks were observed in the project area (Table 3).

Tetra Tech (2008) documented red-tailed hawk, Swainson's hawk, northern harrier, American kestrel, prairie falcon, rough-legged hawk, great horned owl, ferruginous hawk, Cooper's hawk, and short-eared owl use during fall 2008 surveys in the Oliver County project. These species would be consistent with species expected during fall migration. Use rates were low to moderate compared to other projects from around the country.

Potential Raptor Nesting Habitat

One potential raptor nest was observed during the site visit (Figure 5). Other potential nest structures for above ground nesting species were present in the form of living and dead trees scattered throughout the project area. Grassland areas could provide nesting habitats for ground-nesting raptors, such as the northern harrier.

Potential for Prey Densities

No signs of colonial rodents, such as prairie dogs were observed during the site visits; these types of areas are known to attract feeding raptors. However, it is possible that small mammal colonies are present within the ACEP, but were not visible from public roads. Potential raptor prey sources include rodents, rabbits, and waterfowl, which are all species consistent with a cultivated agriculture and native prairie region.

Overall, it is very difficult to assess potential prey densities during one site visit from public access roads and prey densities can fluctuate rapidly based on habitat and climatic factors. However, overall prey densities are not expected to be significantly different than areas outside of the proposed ACEP. With roost sites and food available, it is likely that raptors will use the area, but not to a greater degree than the surrounding areas with similar habitat.

Does the Topography of the Site Increase the Potential for Raptor Use?

Topography in the ACEP is flat to rolling. There are no big hills, steep ridges, or other topographical features that might cause bottlenecks or significant updrafts where raptors might concentrate (Figures 4 and 5). At other wind energy facilities located on prominent ridges with defined edges (e.g., rims of canyons, steep slopes), raptors often fly along the rim edges, using updrafts to maintain altitude while hunting, migrating or soaring (Johnson et al. 2000b, Hoover and Morrison 2005). In Wyoming, raptors most often used areas within 164 ft (50 m) of the rim edge (Johnson et al. 2000b). It is not anticipated that topography will increase the potential for raptor use in the ACEP.

Bird Migration

Most species of birds are protected by the Migratory Bird Treaty Act (MBTA 1918). Although many species of passerines migrate at night and may collide with tall man-made structures, no large mortality events on the same scale as those seen at communication towers have been documented in the public literature at wind energy facilities in North America (NWCC 2004). Large numbers of passerines have collided with lighted communication towers and buildings when foggy conditions occur during spring or fall migration. Birds appear to become confused by the lights during foggy or low cloud ceiling conditions, flying circles around lighted structures until they become exhausted or collide with the structure (Erickson et al. 2001). Most collisions at communication towers are attributed to the guy wires on these structures, which wind turbines do not have. Additionally, the large mortality events observed at communication towers have occurred at structures greater than 500 ft (152 m) in height (Erickson et al. 2001), likely because most small birds migrate at elevations of 500 to 1,000 ft (152 to 305 m) above the ground (USFWS 1998), which is higher than most of the modern turbines. Migrating passerines are likely more at risk of turbine collision when ascending and descending from stopover habitats.

It is likely that birds migrate through the proposed ACEP, including passerines, raptors, and waterfowl. Woodlots, wetlands, and grassland areas scattered throughout the ACEP may also provide stopover habitat for migrants or individuals during post-breeding dispersal. Harvested grain crops, such as wheat (*Triticum* spp.) fields that were observed during the site visits, could serve as feeding areas that could attract migrating and wintering waterfowl. These types of habitats are found throughout the region and therefore their presence in the ACEP should not concentrate bird use as compared to adjacent areas. The main potential migratory “funnel” in the area could be the Missouri River, approximately 40 miles (64 km) east of the project area.

Tetra Tech (2008) documented 59 bird species during the fall 2008 migration surveys at the Oliver County project. Of these, the most frequently observed species were the European starling (*Sturnis vulgaris*), Brewer’s blackbird (*Euphagus cyanocephalus*), horned lark (*Eremophila alpestris*), red-winged blackbird (*Agelaius phoeniceus*), Lapland longspur (*Calcarius lapponicus*), and western meadowlark (*Sturnella neglecta*). All are commonly found birds in the region during fall migration. Overall use rates were relatively low with an average peak count of 17.75 birds/20-minute survey in mid-September. All of these species are common

residents and migrants through the region. Based on similar location, vegetation, and topography it is assumed that the ACEP will have similar species use.

Breeding Birds

The nearest US Geological Survey (USGS) Breeding Bird Survey (BBS) routes are the Glen Ullin and Zap Routes (Figure 8). Each BBS route is 24.5 miles (39.4 km) long, and all birds seen or heard are tallied for a 3-minute period every half-mile (0.8 km) along the route. In 2003, the most recent year that the Zap BBS Route was surveyed, 1,393 individual bird observations comprising 48 species were observed (Sauer et al. 2011). The most abundant birds observed were western meadowlark, horned lark, and brown-headed cowbird (*Molothrus ater*). A total of nine species from the CWCS 100 species Level I list (NDGFD 2004, Appendix C) have been documented at one time or another on the Zap BBS Route: Swainson's hawk, willet (*Tringa semipalmata*), upland sandpiper (*Bartramia longicauda*), marbled godwit (*Limosa fedoa*), Sprague's pipit, lark bunting (*Calamospiza melanocorys*), grasshopper sparrow (*Ammosdramus savannarum*), and Bairds' sparrow (*A. bairdii*). On the Glen Ullin Route, 815 individual bird observations totaling 53 species were recorded during the 2009 survey (Sauer et al. 2011). The most abundant birds recorded on this route included western meadowlark, brown-headed cowbird, and mourning dove (Z*enaida macroura*). Seven species from the CWCS 100 species Level I list (NDGFD 2004, Appendix C) have been documented on the Glen Ullin BBS Route: American bittern (*Botaurus lentiginosus*), chestnut-collared longspur, grasshopper sparrow, lark bunting, marbled godwit, Swainson's hawk, and upland sandpiper.

Displacement of grassland nesting birds is often one of the primary concerns wildlife agencies express regarding the placement of wind facilities in and near grassland areas. Recent research has focused on the potential displacement of grassland passerines at wind energy facilities, and some uncertainty currently exists over the effects of wind energy facilities on the breeding success of these birds. In Minnesota, researchers have found that breeding passerine density on CRP grasslands was reduced in the immediate vicinity of turbines (Leddy et al. 1999), but changes in density at broader scales was not detectable (Johnson et al. 2000a). Erickson et al. (2004) documented a decrease in density of some native grassland passerines, such as grasshopper sparrow, near turbines in Washington; however, they could not determine if a decrease in post-construction density was the result of behavioral disturbance or a loss of habitat. Piorkowski (2006) conducted a displacement study at a wind energy facility in Oklahoma where, of the grassland species present on the site, only the western meadowlark showed significantly lower densities near turbines. Piorkowski (2006) suggested that habitat characteristics were more important to determining passerine breeding densities than the presence of wind turbines. Shaffer and Johnson (2007) documented some avoidance by grasshopper sparrows out to 492 ft (150 m) at a wind energy facility in northern South Dakota. The proposed ACEP contains native grasslands and some species of sensitive grassland passerines are likely to be present in the ACEP. As more research is published, the potential impacts of wind turbines on breeding passerines can be better defined. If the project does not affect the grasslands in the ACEP, displacement impacts should be relatively negligible.

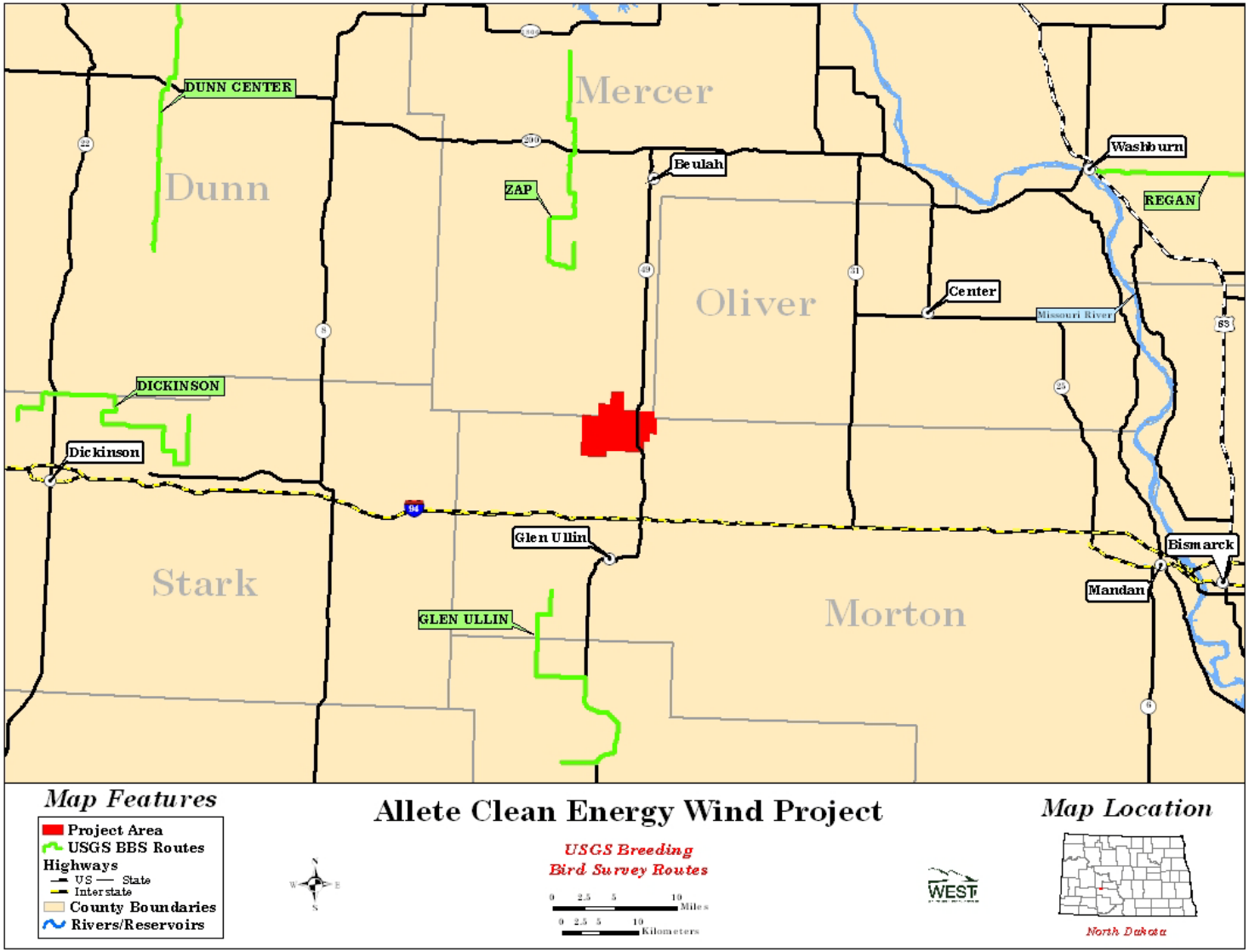

Figure 8. Breeding Bird Survey routes near the Allete Clean Energy Project.

Bats

Approximately 18 bat species have been recovered during carcass searches at wind energy facilities throughout the US (Table 6) and of these, six species are likely residents and migrants in the ACEP, including big brown bat (*Eptesicus fuscus*), eastern red bat (*Lasiurus borealis*), hoary bat, little brown bat (*Myotis lucifugus*), silver-haired bat (*Lasionycteris noctivagans*), and northern long-eared bat (*Myotis septentrionalis*; BCI website).

Potential roosting habitat within the ACEP is found in the form of trees and buildings; no caves were observed during the site visit. Bats generally forage over water and open spaces, such as agricultural fields, grasslands, streams, and wetlands/ponds. Bats may also forage over the entire ACEP, although the extent of use is not known. Bats may prey on insects that are likely to concentrate over water in wetlands and streams, and these types of areas are found in the ACEP and are most likely to attract foraging bats.

Table 6. Summary of bat fatalities (by species) from wind energy facilities in North America.

Common Name	Scientific Name	Total # Fatalities[1]	Total % Composition
hoary bat*	*Lasiurus cinereus*	3,270	39.8
silver-haired bat*	*Lasionycteris noctivagans*	1,659	20.2
eastern red bat*	*Lasiurus borealis*	1,296	15.8
little brown bat*	*Myotis lucifugus*	646	7.9
big brown bat*	*Eptesicus fuscus*	365	4.4
Mexican free-tailed bat	*Tadarida brasiliensis*	325	4.0
tricolored bat	*Perimyotis subflavus*	325	4.0
unidentified bat		237	2.9
unidentified myotis		42	0.5
northern long-eared bat*	*Myotis septentrionalis*	12	0.1
western red bat	*Lasiurus blossevillii*	7	0.1
western yellow bat	*Lasiurus xanthinus*	6	0.1
Seminole bat	*Lasiurus seminolus*	4	<0.1
pocketed free-tailed bat	*Nyctinomops femorosacca*	3	<0.1
big free-tailed bat	*Nyctinomops macrotis*	2	<0.1
eastern small-footed bat	*Myotis leibii*	2	<0.1
Indiana bat	*Myotis sodalis*	2	<0.1
unidentified free-tailed bat		2	<0.1
canyon bat	*Parastrellus hesperus*	1	<0.1
cave bat	*Myotis velifer*	1	<0.1
long-legged bat	*Myotis volans*	1	<0.1
Total	**18 species**	**8,208**	**100**

1. These are raw numbers and are not corrected for searcher efficiency or scavenging.
Canyon bat formerly known as western pipistrelle (*Pipistrellus hesperus*), tricolored bat formerly known as eastern pipistrelle (*Pipistrellus subflavus*). Species from BCI (2011).
Cumulative fatalities and species from data compiled by Western EcoSystems Technology, Inc. from publicly available fatality documents (listed in Appendix D).
*Potential resident or migrant in the Allete Clean Energy Project.
One incidental long-eared bat (*Myotis evotis*) was recorded at Tehachapi, California (Anderson et al. 2004), but is not included in the total fatalities.

Bat casualties have been reported from most wind energy facilities where post-construction fatality data are publicly available. Reported estimates of bat mortality at wind energy facilities

have ranged from 0.02 – 53.3 bat fatalities per megawatt (MW) per year in the US (Arnett et al. 2008), with an average of 3.4 per turbine or 4.6 per MW (NWCC 2004). Most of the bat casualties at wind energy facilities to date are migratory species which conduct comparatively long migrations between summer roosts and winter areas. These species most commonly found as fatalities at wind energy facilities include hoary bats, silver-haired bats and eastern red bats (Table 6). Among the highest numbers of bat fatalities found at wind energy facilities to date, some have been recorded in eastern North America on ridge tops dominated by deciduous forest and where documented use rates have been comparativley high (NWCC 2004, Table 6). However, Gruver (2010), Barclay et al. (2007), and Jain (2005) recently reported relatively high fatality rates from facilities in Wisconsin, Canada, and Iowa that were located in grassland and agricultural habitats. Unlike the eastern US wind energy facilities that reported higher bat fatality rates, the Alberta and Iowa facilities are in open grasslands and crop fields.

Limited or no quantitative bat use surveys have been conducted in North Dakota, at least that are publicly available. Only one project with post-construction bat fatality data in North Dakota is publically available, the PrairieWinds ND1 project south of Minot had an estimated bat fatality rate of 2.13 fatalities/MW/year (Derby et al. 2011). Based on bat use and bat fatalities studies from other parts of the country, including Minnesota (Table 7), it would be expected that bat impacts would be similar to other open grassland/agricultural landscapes and similar to the low estimate from the project near Minot. However, the exact magnitude of these fatalities and the degree to which bat species will be affected is difficult to determine.

Table 7. Wind energy facilities in the US with both pre-construction Anabat sampling data and post-construction mortality data for bat species.*

Wind Energy Facility, Location	Activity Rates (#/detector-night)	Fatality Rate (fatality/turbine/year)	Fatality Rate (fatality/MW/year)
Stetson Mountain, ME (2009)	0.3	2.11	1.40
Buffalo Ridge, MN (Phase II; 2001/Lake Benton I)	1.9	3.26	4.35
Buffalo Ridge, MN (Phase III; 2002/Lake Benton II)	1.9	1.36	1.81
Buffalo Ridge, MN (Phase II; 2002/Lake Benton I)	2.2	1.23	1.64
Buffalo Ridge, MN (Phase III; 2001/Lake Benton II)	2.2	2.78	3.71
Foote Creek Rim, WY (Phase I; 2000)	2.2	0.63	1.05
Summerview, Alb. (2006)	5.3	18.48	10.27
Blue Sky Green Field, WI	7.7	40.54	24.57
Dry Lake, AZ	8.8	9.01	4.29
Buffalo Mountain, TN (2000-2003)	23.7	20.82	31.54
Top of Iowa, IA (2003)	35.7	6.44	7.16
Top of Iowa, IA (2004)	35.7	9.24	10.27
Mountaineer, WV	38.3	47.53	31.69

* from data compiled by WEST from publically available documents (based on Kunz et al. 2007).
Data from the following sources:

Wind Energy Facility	Reference	Wind Energy Facility	Reference
Blue Sky Green Field, WI	Gruver et al. 2009	Foote Creek Rim, WY (Phase I; 00)	Young et al. 2003
Buffalo Mountain, TN (00-03)	Fiedler 2004, Johnson et al. 2000a	Mountaineer, WV	Kerns and Kerlinger 2004
Buffalo Ridge, MN (Phase II; 01/Lake Benton I)	Johnson et al. 2003a	Stetson Mountain, ME (09)	Stantec 2009b
Buffalo Ridge, MN (Phase II; 02/Lake Benton I)	Johnson et al. 2003a	Summerview, Alb. (06)	Brown and Hamilton 2006b
Buffalo Ridge, MN (Phase III; 01/Lake Benton II)	Johnson et al. 2003a	Top of Iowa, IA (03)	Jain 2005
Buffalo Ridge, MN (Phase III; 02/Lake Benton II)	Johnson et al. 2003a	Top of Iowa, IA (04)	Jain 2005
Dry Lake, AZ	Young et al. 2007b, Thompson et al. 2011		

CONCLUSIONS

A summary of the potential for wildlife and habitat conflicts in the proposed wind energy facility development area is presented in Table 8.

No federally-listed endangered, threatened, or candidate plant species are known to occur in the ACEP. There are seven wildlife species listed as endangered, threatened, or candidate by the USFWS known or potentially could occur in Mercer and Morton Counties: pallid sturgeon, gray wolf, black-footed ferret, least tern, piping plover, Sprague's pipit, and whooping crane. Of these seven, the whooping crane and Sprague's pipit have the highest potential, however still low, of occurring in the ACEP. Habitat for the other species is either completely lacking or extremely limited in the project area.

Potential direct impacts to the Sprague's pipit can be minimized or reduced by avoiding or minimizing impacts on larger tracts of native grasslands and areas occupied by the species. Potential direct impact to whooping cranes (i.e., injury and mortality) is not likely given the current evidence indicating avoidance of wind farms by cranes. There are concerns regarding the displacement of whooping cranes from potential habitat within ACEP once developed. There is some potential roosting habitat in the ACEP, but that there is also suitable habitat outside of the ACEP if whooping cranes do avoid the project area after construction.

The State of North Dakota maintains a list of 100 species of conservation concern. Several of these species have been documented near the ACEP during BBS conducted by the USGS, as well as at another wind facility study adjacent to the ACEP. Impacts to many of these species of conservation concern can be avoided or minimized by focusing construction activities on cultivated landscapes.

In general, native land cover in most of the ACEP, including native grasslands and wetlands, are not unique in the region, but are of concern on a broader scale (e.g., concern regarding loss of native prairie). As the land cover is not unique to the region, these characteristics are not likely to attract or concentrate bird or bat species compared to surrounding areas. Project developments in the areas with less wetlands and native grasslands would likely have lower impacts (e.g., displacement) to wildlife, particularly grassland bird species and bats.

Numerous species and individuals of birds and bats potentially will utilize the area. Diurnal raptors, especially red-tailed hawk, northern harrier, Swainson's hawk, and American kestrel, are likely to frequent the area. The presence of larger trees in woodlots provide nesting habitat for the tree-nesting species and the grasslands provide nesting opportunities for ground-nesting birds, such as the northern harrier. These are all species and habitat types common to the region.

Deciduous trees and buildings in the area provide potential roosting habitat and hibernacula for bats. Research to date on the impacts of wind energy facilities on bats has shown that species

that conduct long distance migrations usually make up the majority of bat fatalities at wind energy facilities. Additionally, the timing of bat fatalities at wind energy facilities indicates that most bats are killed by turbines during the fall migration season (Johnson 2005, Arnett et al. 2008). Relatively few bat fatalities have been recorded at most wind energy facilities during spring or summer, although bat use at wind energy facilities has been recorded during those seasons. Migrating bats appear to be at much higher risk of collision than resident bat species that may breed near wind energy facilities. Maximizing distances from open water and wetlands should decrease the potential impacts to bats.

Table 8. A summary of the potential for wildlife and habitat conflicts in the Allete Clean Energy Project .

VH = Very High, H = High, M = Medium, and L = Low.

Issue	VH	H	M	L	Notes
Potential for raptor nest sites			✓		Several tree rows and woodlots that may potentially be used for nesting are present.
Concentrated raptor flight potential				✓	The general lack of stark topography over the majority of the ACEP decreases the potential for concentrated raptor use.
Potential for migratory pathway			✓		The project area has no stark topography or other prominent features that are likely to concentrate birds during migration. However, the Missouri River is about 40 miles east of project.
Potential for raptor prey species			✓		Suitable habitat for small mammals exists in the ACEP.
Potential for protected species to occur		✓			The ACEP lies within the whooping crane migratory corridor. Known occurrence of Sprague's pipit at the wind facility in Oliver County.
Potential for State Issues		✓			Protection of native grasslands is a likely state issue, and grasslands are present in the project area.
Uniqueness of habitat at wind energy facility			✓		Overall, habitat in the ACEP is not unique compared to the surrounding landscape, but impacts to habitat is of concern on a broader scale (e.g., loss of native grasslands).
Potential for rare plants to occur				✓	No federally listed plants are known to occur in the counties.
Potential for use by bats			✓		The site has scattered trees, buildings, and wetlands that may attract bats.

REFERENCES

Anderson, R., N. Neuman, J. Tom, W.P. Erickson, M.D. Strickland, M. Bourassa, K.J. Bay, and K.J. Sernka. 2004. Avian Monitoring and Risk Assessment at the Tehachapi Pass Wind Resource Area, California. Period of Performance: October 2, 1996 - May 27, 1998. NREL/SR-500-36416. National Renewable Energy Laboratory, Golden, Colorado. September 2004. http://www.nrel.gov/docs/fy04osti/36416.pdf

Arnett, E. B., technical editor. 2005. Relationships between Bats and Wind Turbines in Pennsylvania and West Virginia: An Assessment of Bat Fatality Search Protocols, Patterns of Fatality, and Behavioral Interactions with Wind Turbines. A final report submitted to the Bats and Wind Energy Cooperative. Bat Conservation International. Austin, Texas. http://www.batsandwind.org/pdf/ar2004.pdf

Arnett, E.B., K. Brown, W.P. Erickson, J. Fiedler, B.L. Hamilton, T.H. Henry, A. Jain, G.D. Johnson, J. Kerns, R.R. Kolford, C.P. Nicholson, T. O'Connell, M. Piorkowski, and R. Tankersley, Jr. 2008. Patterns of Bat Fatalities at Wind Energy Facilities in North America. Journal of Wildlife Management 72(1): 61-78.

Arnett, E.B., W.P. Erickson, J. Kerns, and J. Horn. 2005. Relationships between Bats and Wind Turbines in Pennsylvania and West Virginia: An Assessment of Fatality Search Protocols, Patterns of Fatality, and Behavioral Interactions with Wind Turbines. Prepared for the Bats and Wind Energy Cooperative. March 2005.

Arnett, E.B., M.R. Schirmacher, M.M.P. Huso, and J.P. Hayes. 2009. Patterns of Bat Fatality at the Casselman Wind Project in South-Central Pennsylvania. 2008 Annual Report. Annual report prepared for the Bats and Wind Energy Cooperative (BWEC) and the Pennsylvania Game Commission. Bat Conservation International (BCI), Austin, Texas. June 2009. Available online at: http://www.batsandwind.org/pdf/2008%20Casselman%20Fatality%20Report.pdf

Austin, J.E. and A.L. Richert. 2001. A Comprehensive Review of the Observational and Site Evaluation Data of Migrant Whooping Cranes in the United States, 1943-99. US Geological Survey (USGS), Northern Prairie Wildlife Research Center, Jamestown, North Dakota, and State Museum, University of Nebraska, Lincoln, Nebraska. 157 pp.

Baerwald, E.F. 2008. Variation in the Activity and Fatality of Migratory Bats at Wind Energy Facilities in Southern Alberta: Causes and Consequences. Thesis. University of Calgary, Calgary, Alberta, Canada.

Barclay, R.M.R., E.F. Baerwald, and J.C. Gruver. 2007. Variation in Bat and Bird Fatalities at Wind Energy Facilities: Assessing the Effects of Rotor Size and Tower Height. Canadian Journal of Zoology 85: 381-387. http://www.bio.ucalgary.ca/contact/faculty/pdf/Barclay07Tur.pdf

BHE Environmental, Inc. (BHE). 2010. Post-Construction Bird and Bat Mortality Study: Cedar Ridge Wind Farm, Fond Du Lac County, Wisconsin. Interim Report prepared for Wisconsin Power and Light, Madison, Wisconsin. Prepared by BHE Environmental, Inc. Cincinnati, Ohio. February 2010.

BHE Environmental, Inc. (BHE). 2011. Post-Construction Bird and Bat Mortality Study: Cedar Ridge Wind Farm, Fond Du Lac County, Wisconsin. Final Report. Prepared for Wisconsin Power and Light, Madison, Wisconsin. Prepared by BHE Environmental, Inc. Cincinnati, Ohio. February 2011.

BioResource Consultants, Inc. (BRC). 2010. 2009/2010 Annual Report: Bird and Bat Mortality Monitoring, Pine Tree Wind Farm, Kern County, California. To the Los Angeles Department of Water and Power, from AECOM, Irvine, California. Report prepared by Bioresource Consultants, Inc., Ojai, California. October 14, 2010.

Brown, W.K. and B.L. Hamilton. 2004. Bird and Bat Monitoring at the McBride Lake Wind Farm, Alberta, 2003-2004. Report for Vision Quest Windelectric, Inc., Calgary, Alberta, Canada. September 2004.

Brown, W.K. and B.L. Hamilton. 2006a. Bird and Bat Interactions with Wind Turbines Castle River Wind Facility, Alberta, 2001-2002. Report for Vision Quest Windelectric, Inc., Calgary, Alberta, Canada.

Brown, W.K. and B.L. Hamilton. 2006b. Monitoring of Bird and Bat Collisions with Wind Turbines at the Summerview Wind Power Project, Alberta: 2005-2006. Prepared for Vision Quest Windelectric, Calgary, Alberta by TAEM Ltd., Calgary, Alberta, and BLH Environmental Services, Pincher Creek, Alberta. September 2006. http://www.batsandwind.org/pdf/Brown2006.pdf

Bryce, S.A., J.M. Omernik, D.A. Pater, M. Ulmer, J. Schaar, J. Freeouf, R. Johnson, P. Kuck, and S.H. Azevedo. 1996. Ecoregions of North Dakota and South Dakota. (Color poster with map, descriptive text, summary tables, and photographs.) US Geological Survey (USGS) map (map scale 1:1,500,000). USGS, Reston, Virginia. US Environmental Protection Agency (USEPA). http://www.epa.gov/wed/pages/ecoregions/ndsd_eco.htm

Chatfield, A., W. Erickson, and K. Bay. 2009. Avian and Bat Fatality Study, Dillon Wind-Energy Facility, Riverside County, California. Final Report: March 26, 2008 - March 26, 2009. Prepared for Iberdrola Renewables, Portland, Oregon. Prepared by Western EcoSystems Technology, Inc. (WEST), Cheyenne, Wyoming. June 3, 2009.

Chatfield, A., W.P. Erickson, and K. Bay. 2010. Final Report: Avian and Bat Fatality Study at the Alite Wind-Energy Facility, Kern County, California. Final Report: June 15, 2009 – June 15, 2010. Prepared by Western EcoSystems Technology, Inc. (WEST), Cheyenne, Wyoming. Prepared for CH2M HILL, Oakland, California.

Derby, C., K. Chodachek, and K. Bay. 2010a. Post-Construction Bat and Bird Fatality Study Crystal Lake II Wind Energy Center, Hancock and Winnebago Counties, Iowa. Final Report: April 2009-October 2009. Prepared for NextEra Energy Resources, Juno Beach, Florida. Prepared by Western EcoSystems Technology, Inc. (WEST), Bismarck, North Dakota. June 2, 2010.

Derby, C., K. Chodachek, K. Bay, and A. Merrill. 2010b. Post-Construction Fatality Survey for the Buffalo Ridge I Wind Project. May 2009 - May 2010. Prepared for Iberdrola Renewables, Inc., Portland, Oregon. Prepared by Western EcoSystems Technology, Inc. (WEST), Bismarck, North Dakota.

Derby, C., K. Chodachek, K. Bay, and A. Merrill. 2010c. Post-Construction Fatality Surveys for the Elm Creek Wind Project: March 2009- February 2010. Prepared for Iberdrola Renewables, Inc. (IRI), Portland, Oregon. Prepared by Western EcoSystems Technology, Inc. (WEST), Bismarck, North Dakota.

Derby, C., K. Chodachek, K. Bay, and A. Merrill. 2010d. Post-Construction Fatality Surveys for the Moraine II Wind Project: March - December 2009. Prepared for Iberdrola Renewables, Inc. (IRI), Portland, Oregon. Prepared by Western EcoSystems Technology, Inc. (WEST), Bismarck, North Dakota.

Derby, C., K. Chodachek, K. Bay, and A. Merrill. 2010e. Post-Construction Fatality Surveys for the Winnebago Wind Project: March 2009- February 2010. Prepared for Iberdrola Renewables, Inc. (IRI), Portland, Oregon. Prepared by Western EcoSystems Technology, Inc. (WEST), Bismarck, North Dakota.

Derby, C., K. Chodachek, T. Thorn, K. Bay, and S. Nomani. 2011. Post-Construction Fatality Surveys for the Prairiewinds ND1 Wind Facility, Basin Electric Power Cooperative, March - November 2010. Prepared for Basin Electric Power Cooperative, Bismarck, North Dakota. Prepared by Western EcoSystems Technology, Inc. (WEST), Bismarck, North Dakota. August 2, 2011.

Derby, C., A. Dahl, W. Erickson, K. Bay, and J. Hoban. 2007. Post-Construction Monitoring Report for Avian and Bat Mortality at the NPPD Ainsworth Wind Farm. Unpublished report prepared by Western EcoSystems Technology, Inc. (WEST), Cheyenne, Wyoming, for the Nebraska Public Power District.

Derby, C., A. Dahl, A. Merrill, and K. Bay. 2010f. 2009 Post-Construction Monitoring Results for the Wessington Springs Wind-Energy Facility, South Dakota. Final Report. Prepared for Wessington Wind Energy Center, LLC, Juno Beach, Florida. Prepared by Western EcoSystems Technology, Inc. (WEST), Bismarck, North Dakota. August 19, 2010.

Derby, C., J. Ritzert, and K. Bay. 2010g. Bird and Bat Fatality Study, Grand Ridge Wind Resource Area, Lasalle County, Illinois. January 2009 - January 2010. Prepared for Grand Ridge Energy LLC, Chicago, Illinois. Prepared by Western EcoSystems Technology, Inc. (WEST), Bismarck, North Dakota. July 13, 2010. Revised January 2011.

Endangered Species Act (ESA). 1973. 16 United States Code (USC) § 1531-1544, Public Law (PL) 93-205, December 28, 1973, as amended, PL 100-478 [16 USC 1531 *et seq.*]; 50 Code of Federal Regulations (CFR) 402.

Enk, T., K. Bay, M. Sonnenberg, J. Baker, M. Kesterke, J. Boehrs, and A. Palochak. 2010. Biglow Canyon Wind Farm Phase I Post-Construction Avian and Bat Monitoring Second Annual Report, Sherman County, Oregon. January 26, 2009 - December 11, 2009. Prepared for Portland General Electric Company, Portland, Oregon. Prepared by Western EcoSystems Technology, Inc.(WEST) Cheyenne, Wyoming, and Walla Walla, Washington. April 2010.

Enz, T. and K. Bay. 2010. Post-Construction Avian and Bat Fatality Monitoring Study, Tuolumne Wind Project, Klickitat County, Washington. Final Report: April 20, 2009 - April 7, 2010. Prepared for Turlock Irrigation District, Turlock, California. Prepared by Western EcoSystems Technology, Inc. (WEST), Cheyenne, Wyoming. July 6, 2010.

Erickson, W.P., J. Jeffrey, K. Kronner, and K. Bay. 2004. Stateline Wind Project Wildlife Monitoring Annual Report. July 2001 - December 2003. Technical report peer-reviewed by and submitted to FPL Energy, the Oregon Energy Facility Siting Council, and the Stateline Technical Advisory Committee. Western EcoSystems Technology, Inc.(WEST), Cheyenne, Wyoming. December 2004.

Erickson, W.P., J. Jeffrey, and V.K. Poulton. 2008. Avian and Bat Monitoring: Year 1 Report. Puget Sound Energy Wild Horse Wind Project, Kittitas County, Washington. Prepared for Puget Sound Energy, Ellensburg, Washington, by Western EcoSystems Technology, Inc. (WEST), Cheyenne, Wyoming. January 2008.

Erickson, W.P., G.D. Johnson, M.D. Strickland, and K. Kronner. 2000. Avian and Bat Mortality Associated with the Vansycle Wind Project, Umatilla County, Oregon: 1999 Study Year. Technical report prepared by WEST, Inc. for Umatilla County Department of Resource Services and Development, Pendleton, Oregon. 21pp. http://www.west-inc.com/reports/vansyclereportnet.pdf

Erickson, W.P., G.D. Johnson, M.D. Strickland, D.P. Young, Jr., K.J. Sernka, and R.E. Good. 2001. Avian Collisions with Wind Turbines: A Summary of Existing Studies and Comparisons to Other Sources of Bird Collision Mortality in the United States. National Wind Coordinating Collaborative (NWCC) Publication and Resource Document. Prepared for the NWCC by WEST, Inc., Cheyenne, Wyoming. August 2001. Available online at: http://www.nationalwind.org/assets/archive/Avian_Collisions_with_Wind_Turbines_-_A_Summary_of_Existing_Studies_and_Comparisons_to_Other_Sources_of_Avian_Collision__Mortality__in_the_United_States__2001_.pdf

Erickson, W.P., K. Kronner, and K.J. Bay. 2007. Stateline II Wind Project Wildlife Monitoring Report, January - December 2006. Technical report submitted to FPL Energy, the Oregon Energy Facility Siting Council, and the Stateline Technical Advisory Committee.

Erickson, W.P. and L. Sharp. 2005. Phase 1 and Phase 1a Avian Mortality Monitoring Report for 2004-2005 for the SMUD Solano Wind Project. Prepared for Sacramento Municipal Utility District (SMUD), Sacramento, California. Prepared by URS Sacramento, California and Western EcoSystems Technology, Inc. (WEST). August 2005.

Fiedler, J.K. 2004. Assessment of Bat Mortality and Activity at Buffalo Mountain Windfarm, Eastern Tennessee. M.S. Thesis. University of Tennessee, Knoxville, Tennessee. August, 2004. http://www.tva.gov/environment/bmw_report/bat_mortality_bmw.pdf

Fiedler, J.K., T.H. Henry, R.D. Tankersley, and C.P. Nicholson. 2007. Results of Bat and Bird Mortality Monitoring at the Expanded Buffalo Mountain Windfarm, 2005. Tennessee Valley Authority, Knoxville, Tennessee. https://www.tva.gov/environment/bmw_report/results.pdf

Golder Associates. 2010. Report on Fall Post-Construction Monitoring, Ripley Wind Power Project, Acciona Wind. Report Number 09-1126-0029. Submitted to Suncor Energy Products Inc., Calgary, Alberta, and Acciona Wind Energy Canada, Toronto, Ontario. February 2010.

Gritski, R., S. Downes, and K. Kronner. 2009a. Klondike III (Phase 1) Wind Power Project Wildlife Monitoring Year One Summary, October 2007-October 2008. Prepared for Iberdrola Renewables, Portland, Oregon. Prepared by Northwest Wildlife Consultants, Inc. (NWC), Pendleton, Oregon. April 3, 2009. Available online at: http://www.oregon.gov/ENERGY/SITING /docs/KWPWildlifeReport040309.pdf

Gritski, R., S. Downes, and K. Kronner. 2009b. Klondike IIIa (Phase 2) Wind Power Project, Wildlife Monitoring Year One Summary, August 2008 - August 2009. Prepared for Iberdrola Renewables, Klondike Wind Power III LLC, Portland, Oregon. Prepared by Northwest Wildlife Consultants, Inc. (NWC), Pendleton, Oregon. November 13, 2009. Available online at: http://www.oregon.gov/ENERGY/SITING/docs/KWPWildlifeReport111309.pdf

Gritski, R., S. Downes, and K. Kronner. 2009c. White Creek Wind I Wildlife Monitoring Second Annual Summary: Winter 2008-2009 through Fall 2009. Prepared for White Creek Wind I, LLC, Roosevelt, Washington. Prepared by Northwest Wildlife Consultants, Inc. (NWC), Mid-Columbia Field Office, Goldendale, Washington. December 28, 2009.

Gritski, R. and K. Kronner. 2010a. Hay Canyon Wind Power Project Wildlife Monitoring Study: May 2009 - May 2010. Prepared for Iberdrola Renewables, Inc. (IRI), Hay Canyon Wind Power Project LLC. Prepared by Northwest Wildlife Consultants, Inc. (NWC), Pendleton, Oregon. September 20, 2010.

Gritski, R. and K. Kronner. 2010b. Pebble Springs Wind Power Project Wildlife Monitoring Study: January 2009 - January 2010. Prepared for Iberdrola Renewables, Inc. (IRI), and the Pebble Springs Advisory Committee. Prepared by Northwest Wildlife Consultants, Inc. (NWC), Pendleton, Oregon. April 20, 2010.

Grodsky, S.M. and D. Drake. 2011. Assessing Bird and Bat Mortality at the Forward Energy Center. Final Report. Public Service Commission (PSC) of Wisconsin. PSC REF#:152052. Prepared for Forward Energy LLC. Prepared by Department of Forest and Wildlife Ecology, University of Wisconsin-Madison, Madison, Wisconsin. August 2011.

Gruver, J., M. Sonnenburg, K. Bay, and W. Erickson. 2009. Post-Construction Bat and Bird Fatality Study at the Blue Sky Green Field Wind Energy Center, Fond Du Lac County, Wisconsin July 21 - October 31, 2008 and March 15 - June 4, 2009. Unpublished report prepared by Western EcoSystems Technology, Inc. (WEST), Cheyenne, Wyoming. December 17, 2009.

Hoover, S.L. and M.L. Morrison. 2005. Behavior of Red-Tailed Hawks in a Wind Turbine Development. Journal of Wildlife Management 69(1): 150-159.

Howe, R.W., W. Evans, and A.T. Wolf. 2002. Effects of Wind Turbines on Birds and Bats in Northeastern Wisconsin. Prepared by University of Wisconsin-Green Bay, for Wisconsin Public Service Corporation and Madison Gas and Electric Company, Madison, Wisconsin. November 21, 2002. 104 pp.

Insignia Environmental. 2009. 2008/2009 Annual Report for the Buena Vista Avian and Bat Monitoring Project. Prepared for Contra Costa County, Martinez, California. Prepared by Insignia Environmental, Palo Alto, California. September 4, 2009.

Jacques Whitford Stantec Limited (Jacques Whitford). 2009. Ripley Wind Power Project Postconstruction Monitoring Report. Project No. 1037529.01. Report to Suncor Energy Products Inc., Calgary, Alberta, and Acciona Energy Products Inc., Calgary, Alberta. Prepared for the Ripley Wind Power Project Post-Construction Monitoring Program. Prepared by Jacques Whitford, Markham, Ontario. April 30, 2009. www.jacqueswhitford.com

Jain, A. 2005. Bird and Bat Behavior and Mortality at a Northern Iowa Windfarm. M.S. Thesis. Iowa State University, Ames, Iowa.

Jain, A., P. Kerlinger, R. Curry, and L. Slobodnik. 2007. Annual Report for the Maple Ridge Wind Power Project: Post-Construction Bird and Bat Fatality Study – 2006. Final Report. Prepared for PPM Energy and Horizon Energy and Technical Advisory Committee (TAC) for the Maple Ridge Project Study.

Jain, A., P. Kerlinger, R. Curry, and L. Slobodnik. 2008. Annual Report for the Maple Ridge Wind Power Project: Post-Construction Bird and Bat Fatality Study - 2007. Final report prepared for PPM Energy and Horizon Energy and Technical Advisory Committee (TAC) for the Maple Ridge Project Study.

Jain, A., P. Kerlinger, R. Curry, L. Slobodnik, A. Fuerst, and C. Hansen. 2009a. Annual Report for the Noble Ellenburg Windpark, LLC, Postconstruction Bird and Bat Fatality Study - 2008. Prepared for Noble Environmental Power, LLC by Curry and Kerlinger, LLC. April 13, 2009.

Jain, A., P. Kerlinger, R. Curry, L. Slobodnik, J. Histed, and J. Meacham. 2009b. Annual Report for the Noble Clinton Windpark, LLC, Postconstruction Bird and Bat Fatality Study - 2008. Prepared for Noble Environmental Power, LLC by Curry and Kerlinger, LLC. April 13, 2009.

Jain, A., P. Kerlinger, R. Curry, L. Slobodnik, and M. Lehman. 2009c. Maple Ridge Wind Power Avian and Bat Fatality Study Report - 2008. Annual Report for the Maple Ridge Wind Power Project, Post-construction Bird and Bat Fatality Study - 2008. Prepared for Iberdrola Renewables, Inc, Horizon Energy, and the Technical Advisory Committee (TAC) for the Maple Ridge Project Study. Prepared by Curry and Kerlinger, LLC. May 14, 2009.

Jain, A., P. Kerlinger, R. Curry, L. Slobodnik, J. Quant, and D. Pursell. 2009d. Annual Report for the Noble Bliss Windpark, LLC, Postconstruction Bird and Bat Fatality Study - 2008. Prepared for Noble Environmental Power, LLC by Curry and Kerlinger, LLC. April 13, 2009.

Jain, A., P. Kerlinger, L. Slobodnik, R. Curry, A. Fuerst, and A. Harte. 2010a. Annual Report for the Noble Bliss Windpark, LLC: Postconstruction Bird and Bat Fatality Study - 2009. Prepared for Noble Environmental Power, LLC. Prepared by Curry and Kerlinger, LLC, Cape May, New Jersey. March 9, 2010.

Jain, A., P. Kerlinger, L. Slobodnik, R. Curry, and K. Russell. 2010b. Annual Report for the Noble Clinton Windpark, LLC: Postconstruction Bird and Bat Fatality Study - 2009. Prepared for Noble Environmental Power, LLC. Prepared by Curry and Kerlinger, LLC, Cape May, New Jersey. March 9, 2010.

Jain, A., P. Kerlinger, L. Slobodnik, R. Curry, and K. Russell. 2010c. Annual Report for the Noble Ellenburg Windpark, LLC: Postconstruction Bird and Bat Fatality Study - 2009. Prepared for Noble Environmental Power, LLC. Prepared by Curry and Kerlinger, LLC, Cape May, New Jersey. March 14, 2010.

Jeffrey, J.D., K. Bay, W.P. Erickson, M. Sonneberg, J. Baker, M. Kesterke, J. Boehrs, and A. Palochak. 2009a. Portland General Electric Biglow Canyon Wind Farm Phase I Post-Construction Avian and Bat Monitoring First Annual Report, Sherman County, Oregon. January 2008 - December 2008. Technical report prepared for Portland General Electric Company, Portland, Oregon. Prepared by Western EcoSystems Technology (WEST) Inc., Cheyenne, Wyoming, and Walla Walla, Washington. April 29, 2009.

Jeffrey, J.D., W.P. Erickson, K. Bay, M. Sonneberg, J. Baker, JR Boehrs, and A. Palochak. 2009b. Horizon Wind Energy, Elkhorn Valley Wind Project, Post-Construction Avian and Bat Monitoring, First Annual Report, January-December 2008. Technical report prepared for Telocaset Wind Power Partners, a subsidiary of Horizon Wind Energy, Portland, Oregon. Prepared by Western EcoSystems Technology, Inc., Cheyenne, Wyoming, and Walla Walla, Washington. May 4, 2009.

Johnson, G.D. 2005. A Review of Bat Mortality at Wind-Energy Developments in the United States. Bat Research News 46(2): 45-49.

Johnson, G.D., W.P. Erickson, M.D. Strickland, M.F. Shepherd, and D.A. Shepherd. 2000a. Avian Monitoring Studies at the Buffalo Ridge Wind Resource Area, Minnesota: Results of a 4-Year Study. Final report prepared for Northern States Power Company, Minneapolis, Minnesota, by Western EcoSystems Technology, Inc. (WEST), Cheyenne, Wyoming. September 22, 2000. 212 pp. http://www.west-inc.com

Johnson, G.D., W.P. Erickson, M.D. Strickland, M.F. Shepherd, D.A. Shepherd, and S.A. Sarappo. 2003a. Mortality of Bats at a Large-Scale Wind Power Development at Buffalo Ridge, Minnesota. The American Midland Naturalist 150: 332-342.

Johnson, G.D., W.P. Erickson, and J. White. 2003b. Avian and Bat Mortality During the First Year of Operation at the Klondike Phase I Wind Project, Sherman County, Oregon. Technical report prepared for Northwestern Wind Power, Goldendale, Washington, by Western EcoSystems Technology, Inc. (WEST), Cheyenne, Wyoming. March 2003. http://www.west-inc.com

Johnson, G.D., D.P. Young, W.P. Erickson, C.E. Derby, M.D. Strickland, and R.E. Good. 2000b. Wildlife Monitoring Studies, Seawest Windpower Plant, Carbon County, Wyoming, 1995-1999. Final report prepared for SeaWest Energy Corporation, San Diego, California, and the Bureau of Land Management, Rawlins, Wyoming, by Western EcoSystems Technology, Inc. (WEST), Cheyenne, Wyoming. August 9, 2000. http://www.west-inc.com/reports/fcr_final_baseline.pdf

Kerlinger, P. 2002. Avian Fatality Study at the Madison Wind Power Project, Madison, New York. Report to PG&E Generating.

Kerlinger, P., R. Curry, L. Culp, A. Hasch, and A. Jain. 2010. Post-Construction Avian Monitoring Study for the Shiloh I Wind Power Project, Solano County, California. Final Report: October 2009. Third Year Report (Revised). Prepared for Iberdrola Renewables, Inc. (IRI). Prepared by Curry and Kilinger, LLC., McLean, Virginia.

Kerlinger, P., R. Curry, L. Culp, A. Jain, C. Wilkerson, B. Fischer, and A. Hasch. 2006. Post-Construction Avian and Bat Fatality Monitoring for the High Winds Wind Power Project, Solano County, California: Two Year Report. Prepared for High Winds LLC, FPL Energy by Curry and Kerlinger, LLC. April 2006.

Kerlinger, P., R. Curry, A. Hasch, and J. Guarnaccia. 2007. Migratory Bird and Bat Monitoring Study at the Crescent Ridge Wind Power Project, Bureau County, Illinois: September 2005 - August 2006. Final draft prepared for Orrick Herrington and Sutcliffe, LLP. May 2007.

Kerns, J. and P. Kerlinger. 2004. A Study of Bird and Bat Collisions at the Mountaineer Wind Energy Facility, Tucker County, West Virginia: Annual Report for 2003. Prepared for FPL Energy and the Mountaineer Wind Energy Center Technical Review Committee. February 14, 2004. Technical report prepared by Curry and Kerlinger, LLC., for FPL Energy and Mountaineer Wind Energy Center Technical Review Committee. Curry and Kerlinger, LLC. 39 pp. http://www.wvhighlands.org/Birds/MountaineerFinalAvianRpt-%203-15-04PKJK.pdf

Kronner, K., R. Gritski, and S. Downes. 2008. Big Horn Wind Power Project Wildlife Fatality Monitoring Study: 2006-2007. Final report prepared for PPM Energy and the Big Horn Wind Project Technical Advisory Committee by Northwest Wildlife Consultants, Inc. (NWC), Mid-Columbia Field Office, Goldendale, Washington. June 1, 2008.

Kronner, K., R. Gritski, Z. Ruhlen, and T. Ruhlen. 2007. Leaning Juniper Phase I Wind Power Project, 2006-2007: Wildlife Monitoring Annual Report. Unpublished report prepared by Northwest Wildlife Consultants, Inc. for PacifiCorp Energy, Portland, Oregon.

Kunz, T.H., E.B. Arnett, B.M. Cooper, W.P. Erickson, R.P. Larkin, T. Mabee, M.L. Morrison, M.D. Strickland, and J.M. Szewczak. 2007. Assessing Impacts of Wind-Energy Development on Nocturnally Active Birds and Bats: A Guidance Document. Journal of Wildlife Management 71(8): 2449-2486.

Leddy, K.L., K.F. Higgins, and D.E. Naugle. 1999. Effects of Wind Turbines on Upland Nesting Birds in Conservation Reserve Program Grasslands. Wilson Bulletin 111(1): 100-104.

Migratory Bird Treaty Act (MBTA). 1918. 16 United States Code (USC) § 703-712. July 13, 1918.

Miller, A. 2008. Patterns of Avian and Bat Mortality at a Utility-Scaled Wind Farm on the Southern High Plains. M.S. Thesis. Texas Tech University, August 2008. Available online at: http://www.batsandwind.org/pdf/Bibliography%20docs/Miller_Amanda_Thesis.pdf

National Wind Coordinating Collaborative (NWCC). 2004. Wind Turbine Interactions with Birds and Bats: A Summary of Research Results and Remaining Questions. Fact Sheet. 2nd Edition. November 2004. Available online at: http://www.nationalwind.org/assets/archive/Wind_Turbine_Interactions_with_Birds_and_Bats_-_A_Summary_of_Research_Results_and_Remaining_Questions__2004_.pdf

Nicholson, C.P., J. R.D. Tankersley, J.K. Fiedler, and N.S. Nicholas. 2005. Assessment and Prediction of Bird and Bat Mortality at Wind Energy Facilities in the Southeastern United States. Final Report. Tennessee Valley Authority, Knoxville, Tennessee.

North Dakota (ND) GAP Analysis. 2004. North Dakota Gap Analysis Project. Data available from http://gapanalysis.nbii.gov/portal/server.pt

North Dakota Game and Fish Department (NDGFD). 2004. 100 Species of Conservation Prioity. Wildlife Action Plan. July 2004. Available online at: http://gf.nd.gov/conservation/levels-list.html

North Dakota Game and Fish Department (NDGFD). 2005. North Dakota Comprehensive Wildlife Conservation Strategy. Hagen, S., P. Isakson, and S. Dyke, authors. NDGFD, Bismarck, North Dakota. 454 pp. Available online at: http://gf.nd.gov/conservation/docs/cwcs.pdf

Northern State University (NSU). 1998. Pallid Sturgeon (*Scaphirhynchus Albus*) Fact Sheet. Written by Jim Riis, illustrated by Dorean Ball, and reviewed by Dennis Skadsen. Funded by the South Dakota Department of Game, Fish and Parks, Division of Wildlife, Pierre, South Dakota. Last modified July 23, 1998. http://www.northern.edu/natsource/ENDANG1/Pallid1.htm

Northwest Wildlife Consultants, Inc. (NWC) and Western EcoSystems Technology, Inc. (WEST). 2007. Avian and Bat Monitoring Report for the Klondike II Wind Power Project. Sherman County, Oregon. Prepared for PPM Energy, Portland, Oregon. Managed and conducted by NWC, Pendleton, Oregon. Analysis conducted by WEST, Cheyenne, Wyoming. July 17, 2007.

Piorkowski, M.D. 2006. Breeding Bird Habitat Use and Turbine Collisions of Birds and Bats Located at a Wind Farm in Oklahoma Mixed-Grass Prairie. M.S. Thesis. Oklahoma State University, Stillwater, Oklahoma. 112 pp. July 2006. http://www.batsandwind.org/pdf/Piorkowski_2006.pdf

Piorkowski, M.D. and T.J. O'Connell. 2010. Spatial Pattern of Summer Bat Mortality from Collisions with Wind Turbines in Mixed-Grass Prairie. American Midland Naturalist 164: 260-269.

Pruett, C.L., M.A. Patten, and D.H. Wolfe. 2009. Avoidance Behavior by Prairie Grouse: Implications for Wind Energy Development. Conservation Biology 23(5): 1253-1259.

Sauer, J.R., J.E. Hines, J. Fallon, K.L. Pardieck, D. J. Ziolkowski, Jr., and W.A. Link. 2011. The North American Breeding Bird Survey, Results and Analysis 1966 - 2009. Version 3.23.2011. USGS Patuxent Wildlife Research Center. Laurel, Maryland. Available online at: http://www.mbr-pwrc.usgs.gov/bbs/bbs.html

Shaffer, J.A. and D.H. Johnson. 2007. Effects of Wind Developments on Grassland Birds in Native Habitats in the Northern Great Plains. Presented at the 2007 International Meeting of The Wildlife Society, Tucson, Arizona.

Smallwood, K.S. and B. Karas. 2009. Avian and Bat Fatality Rates at Old-Generation and Repowered Wind Turbines in California. Journal of Wildlife Management 73(7): 1062-1071.

Stahlecker, D.A. 1997a. Availability of Stopover Habitat for Migrant Whooping Cranes in Nebraska. Proceedings North American Crane Workshop 7: 132-140.

Stahlecker, D.A. 1997b. Predicting Availability of Stopover Roosting Habitat for Migrant Whooping Cranes in the Northern Great Plains. Report by Eagle Ecological Services for the US Fish and Wildlife Service (USFWS). 21 pp.

Stantec Consulting, Inc. (Stantec). 2008a. 2007 Spring, Summer, and Fall Post-Construction Bird and Bat Mortality Study at the Mars Hill Wind Farm, Maine. Prepared for UPC Wind Management, LLC, Cumberland, Maine. Prepared by Stantec (formerly Woodlot Alternatives, Inc.), Topsham, Maine. January 2008.

Stantec Consulting, Inc. (Stantec). 2008b. Post-Construction Monitoring at the Munnsville Wind Farm, New York: 2009. Prepared for E.ON Climate and Renewables, Austin, Texas. Prepared by Stantec Consulting, Topsham, Maine. January 2009.

Stantec Consulting, Inc. (Stantec). 2009a. Post-Construction Monitoring at the Mars Hill Wind Farm, Maine - Year 2, 2008. Prepared for First Wind Management, LLC, Portland, Maine. Prepared by Stantec Consulting, Topsham, Maine. January 2009.

Stantec Consulting, Inc. (Stantec). 2009b. Stetson I Mountain Wind Project. Year 1 Post-Construction Monitoring Report, 2009 for the Stetson Mountain Wind Project in Penobscot and Washington Counties, Maine. Prepared for First Wind Management, LLC. Portland, Maine. Prepared by Stantec, Topsham, Maine. January 2009.

Stantec Consulting, Inc. (Stantec). 2010. Cohocton and Dutch Hill Wind Farms Year 1 Post-Construction Monitoring Report, 2009, for the Cohocton and Dutch Hill Wind Farms in Cohocton, New York. Prepared for Canandaigua Power Partners, LLC and Canandaigua Power Partners II, LLC, Portland, Maine. Prepared by Stantec, Topsham, Maine. January 2010.

Stantec Consulting Ltd. (Stantec Ltd.). 2010a. Wolfe Island Ecopower Centre Post-Construction Followup Plan. Bird and Bat Resources Monitoring Report No. 1: May - June 2009. File No. 160960494. Prepared for Canadian Hydro Developers, Inc.'s wholly owned subsidiary, Canadian Renewable Energy Corporation. Prepared by Stantec Ltd., Guelph, Ontario. February 2010.

Stantec Consulting Ltd. (Stantec Ltd.). 2010b. Wolfe Island Ecopower Centre Post-Construction Followup Plan. Bird and Bat Resources Monitoring Report No. 2: July - December 2009. File No. 160960494. Prepared for TransAlta Corporation's wholly owned subsidiary, Canadian Renewable Energy Corporation. Prepared by Stantec Ltd., Guelph, Ontario. May 2010.

Stantec Consulting Ltd. (Stantec Ltd.). 2011. Wolfe Island Wind Plant Post-Construction Followup Plan. Bird and Bat Resources Monitoring Report No. 3: January - June 2010. File No. 160960494. Prepared for TransAlta Corporation's wholly owned subsidiary, Canadian Renewable Energy Corporation. Prepared by Stantec Consulting Ltd., Guelph, Ontario. January 2011.

Stehn, T. 2007. Whooping Cranes and Wind Farms - Guidance for Assessment of Impacts. US Fish and Wildlife Services (USFWS) technical report.

Stehn, T. 2008. Whooping Crane Recovery Activities November 2007 - September 2008. US Fish and Wildlife Service (USFWS).

Tetra Tech EC, Inc. (Tetra Tech). 2008. 2008 Fall Avian Survey, Oliver Expansion Wind Resource Area, Phases III, IV, and V, Oliver and Morton Counties, North Dakota. Technical report prepared for FPL Energy, LLC.

Thompson, J., D. Solick, and K. Bay. 2011. Post-Construction Fatality Surveys for the Dry Lake Phase I Wind Project. Iberdrola Renewables: September 2009 - November 2010. Prepared for Iberdrola Renewables, Portland, Oregon. Prepared by Western Ecosystems Technology, Inc. (WEST), Cheyenne, Wyoming. February 10, 2011.

Tidhar, D., W. Tidhar, and M. Sonnenberg. 2010. Post-Construction Fatality Surveys for Lempster Wind Project, Iberdrola Renewables. Prepared for Lempster Wind, LLC, Lempster Wind Technical Advisory Committee, and Iberdrola Renewables, Inc. Prepared by Western EcoSystems Technology Inc. (WEST), Waterbury, Vermont. September 30, 2010.

Tidhar, D., W.L. Tidhar, L. McManus, and Z. Courage. 2011. 2010 Post-Construction Fatality Surveys for the Lempster Wind Project, Lempster, New Hampshire. Prepared for Iberdrola Renewables, Inc. and the Lempster Wind Technical Committee. Prepared by Western EcoSystems Technology, Inc., Waterbury, Vermont. May 18, 2011.

Tierney, R. 2007. Buffalo Gap I Wind Farm Avian Mortality Study: February 2006-January 2007. Final Survey Report. Prepared for AES SeaWest, Inc. TRC, Albuquerque, New Mexico.TRC Report No. 110766-C-01. May 2007.

Tierney, R. 2009. Buffalo Gap 2 Wind Farm Avian Mortality Study: July 2007 - December 2008. Final Survey Report. Submitted by TRC, Albuquerque, New Mexico.TRC Report No. 151143-B-01. June 2009.

TRC Environmental Corporation. 2008. Post-Construction Avian and Bat Fatality Monitoring and Grassland Bird Displacement Surveys at the Judith Gap Wind Energy Project, Wheatland County, Montana. Prepared for Judith Gap Energy, LLC, Chicago, Illinois. TRC Environmental Corporation, Laramie, Wyoming. TRC Project 51883-01 (112416). January 2008. http://www.newwest.net/pdfs/AvianBatFatalityMonitoring.pdf

URS Corporation. 2010a. Final Goodnoe Hills Wind Project Avian Mortality Monitoring Report. Prepared for PacifiCorp, Salt Lake City, Utah. Prepared by URS Corporation, Seattle, Washington. March 16, 2010.

URS Corporation. 2010b. Final Marengo I Wind Project Year One Avian Mortality Monitoring Report. Prepared for PacifiCorp, Salt Lake City, Utah. Prepared by URS Corporation, Seattle, Washington. March 22, 2010.

URS Corporation. 2010c. Final Marengo II Wind Project Year One Avian Mortality Monitoring Report. Prepared for PacifiCorp, Salt Lake City, Utah. Prepared by URS Corporation, Seattle, Washington. March 22, 2010.

US Department of Agriculture (USDA) National Agriculture Imagery Program (NAIP). 2006. NAIP Imagery and Status Maps.

US Fish and Wildlife Service (USFWS). 1998. Migration of Birds, Circular 16. US Department of the Interior, USFWS.

US Fish and Wildlife Service (USFWS). 2009. Whooping Cranes and Wind Development - an Issue Paper. By Regions 2 and 6, USFWS. April 2009. Available online at: http://www.fws.gov/southwest/es/oklahoma/Documents/Wind%20Power/Documents/Whooping%20Crane%20and%20Wind%20Development%20FWS%20issue%20paper%20-%20final%20%20April%202009.pdf

US Fish and Wildlife Service (USFWS). 2010. Sprague's Pipit (*Anthus spragueii*). Review of Native Species That Are Candidates for Listing as Endangered or Threatened; Annual Notice of Findings on Resubmitted Petitions; Annual Description of Progress on Listing Actions; Proposed Rule. 75 Federal Register, 69222-69294.

US Fish and Wildlife Service (USFWS). 2011a. U.S. Fish and Wildlife Service Seeks Input on Developing Indiana Bat Habitat Conservation Plan for Wind Facility in Benton County. News release prepared by G. Parham, USFWS. MAy 25, 2011. Available online at: http://www.fws.gov/midwest/Endangered/permits/hcp/FowlerRidge/NR_FowlerNOI25May2011.html

US Fish and Wildlife Service (USFWS). 2011b. USFWS Website. Last updated October 2011. USFWS Endangered Species Program homepage: http://www.fws.gov/endangered/; Environmental Conservation Online System (ECOS): http://ecos.fws.gov/ecos/indexPublic.do; Threatened and Endangered Species System (TESS) listings by state: http://ecos.fws.gov /tess_public /pub/stateListingAndOccurrence.jsp; Individual species profiles and status information available from the ECOS webpage.

US Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI). 2007. Region 6 NWI, Mountain Prairie Region: Montana, Wyoming, Utah, Colorado, North Dakota, South Dakota, Nebraska, and Kansas. Denver, Colorado. http://www.fws.gov/wetlands/data/index.html, NWI data at: http://www.fws.gov/wetlands/Data/Mapper.html and http://www.fws.gov/mountain-prairie/

US Fish and Wildlife Service (USFWS) North Dakota Field Office (NDFO). 2011a. County Occurrence of Endangered, Threatened, and Candidate Species and Designated Critical Habitat in North Dakota. US Fish and Wildlife Service (USFWS) NDFO. Last updated October 1, 2011. Available online at: http://www.fws.gov/northdakotafieldoffice/county_list.htm; Species profiles available at: http://www.fws.gov/northdakotafieldoffice/endspecies/endangered_species.htm

US Fish and Wildlife Service (USFWS) North Dakota Field Office (NDFO). 2011b. Western Prairie Fringed Orchid (*Platanthera praeclara*). Updated October 1, 2011. Available online at: http://www.fws.gov/northdakotafieldoffice/endspecies/species/western_prairie_fringed_orchid.htm

US Geological Survey (USGS). 2001. North American Breeding Bird Survey Route Location Maps. USGS, Patuxent Wildlife Research Center. Laurel, Maryland. http://www.pwrc.usgs.gov/BBS/results/routemaps/routeMapStatic.html

US Geological Survey (USGS). 2002. National Gap Analysis Program. South Dakota Gap Analysis Project, Moscow, Idaho.

US Geological Survey (USGS). 2006. Breeding Birds of North Dakota. Sharp-tailed grouse (*Tympanuchus phasianellus* (Linnaeus)). Last modified August 3, 2006. Available online at: http://www.npwrc.usgs.gov/resource/birds/bbofnd/species/3080.htm

US Geological Survey (USGS). 2011a. The National Map/US Topo. Last updated March 1, 2011. Homepage available at: http://nationalmap.gov/ustopo/index.html

US Geological Survey (USGS). 2011b. North American Breeding Bird Summary. BBS Database. USGS Patuxent Wildlife Research Center. Online at: https://www.pwrc.usgs.gov /BBS/PublicDataInterface/index.cfm

US Geological Survey (USGS) National Elevation Dataset (NED). 2001. Seamless Data Distribution System (SDDS). USGS Headquarters, USGS National Center. Reston, Viginia. http://seamless.usgs.gov

US Geological Survey (USGS) National Land Cover Database (NLCD). 2001. Land Use/Land Cover NLCD Data. USGS Headquarters, USGS National Center. Reston, Virginia.

Western EcoSystems Technology, Inc. (WEST). 2006. Diablo Winds Wildlife Monitoring Progress Report, March 2005 - February 2006. Technical report submitted to FPL Energy and Alameda County California. WEST. Cheyenne, Wyoming.

Western EcoSystems Technology, Inc. (WEST). 2008. Diablo Winds Wildlife Monitoring Progress Report: March 2005 – February 2007. Prepared by WEST, Cheyenne, Wyoming. August 2008.

Western EcoSystems Technology, Inc. (WEST). 2011. Post-Construction Fatality Surveys for the Barton Chapel Wind Project: Iberdrola Renewables. Version: July 2011. Iberdrola Renewables, Portland, Oregon.

Whooping Crane Conservation Association (WCCA). 2011. Wind Farms and Whooping Cranes. July 21, 2011. Available online at: http://whoopingcrane.com/wind-farms-and-whooping-cranes/; Also available online at Operation Migration Field Journal, July 24, 2011: http://www.operationmigration.org/Field_Journal.html

Young, D.P. Jr., K. Bay, S. Nomani, and W. Tidhar. 2009a. NedPower Mount Storm Wind Energy Facility, Post-Construction Avian and Bat Monitoring: March - June 2009. Prepared for NedPower Mount Storm, LLC, Houston, Texas. Prepared by Western EcoSystems Technology (WEST), Inc., Cheyenne, Wyoming. August 17, 2009.

Young, D.P. Jr., K. Bay, S. Nomani, and W. Tidhar. 2010a. NedPower Mount Storm Wind Energy Facility, Post-Construction Avian and Bat Monitoring: July - October 2009. Prepared for NedPower Mount Storm, LLC, Houston, Texas. Prepared by Western EcoSystems Technology (WEST), Inc., Cheyenne, Wyoming. February 12, 2010.

Young, D.P. Jr., K. Bay, S. Nomani, and W.L. Tidhar. 2010b. NedPower Mount Storm Wind Energy Facility, Post-Construction Avian and Bat Monitoring: April - July 2010. Prepared for NedPower Mount Storm, LLC, Houston, Texas. Prepared by Western EcoSystems Technology, Inc. (WEST), Cheyenne, Wyoming. August 27, 2010.

Young, D.P. Jr., W.P. Erickson, K. Bay, S. Nomani, and W. Tidhar. 2009b. Mount Storm Wind Energy Facility, Phase 1 Post-Construction Avian and Bat Monitoring, July - October 2008. Prepared for NedPower Mount Storm, LLC, Houston, Texas. Prepared by Western EcoSystems Technology (WEST), Inc., Cheyenne, Wyoming. February 17, 2009.

Young, D.P. Jr., W.P. Erickson, R.E. Good, M.D. Strickland, and G.D. Johnson. 2003. Avian and Bat Mortality Associated with the Initial Phase of the Foote Creek Rim Windpower Project, Carbon County, Wyoming, Final Report, November 1998 - June 2002. Prepared for Pacificorp, Inc. Portland, Oregon, SeaWest Windpower Inc. San Diego, California, and Bureau of Land Management, Rawlins District Office, Rawlins, Wyoming.

Young, D.P. Jr., W.P. Erickson, J. Jeffrey, and V.K. Poulton. 2007a. Puget Sound Energy Hopkins Ridge Wind Project Phase 1 Post-Construction Avian and Bat Monitoring First Annual Report, January - December 2006. Technical report for Puget Sound Energy, Dayton, Washington and Hopkins Ridge Wind Project Technical Advisory Committee, Columbia County, Washington. Western EcoSystems Technology, Inc. (WEST) Cheyenne, Wyoming, and Walla Walla, Washington. 25 pp.

Young, D.P. Jr., J. Jeffrey, W.P. Erickson, K. Bay, and V.K. Poulton. 2006. Eurus Combine Hills Turbine Ranch. Phase 1 Post Construction Wildlife Monitoring First Annual Report. Technical report prepared for Eurus Energy America Corporation, San Diego, California, and the Combine Hills Technical Advisory Committee, Umatilla County, Oregon. Prepared by Western EcoSystems Technology, Inc. (WEST), Cheyenne, Wyoming, and Northwest Wildlife Consultants, Inc. (NWC), Pendleton, Oregon.

Young, D.P. Jr., S. Nomani, W. Tidhar, and K. Bay. 2011. NedPower Mount Storm Wind Energy Facility, Post-Construction Avian and Bat Monitoring: July - October 2010. Prepared for NedPower Mount Storm, LLC, Houston, Texas. Prepared by Western EcoSystems Technology (WEST), Inc., Cheyenne, Wyoming. February 10, 2011.

Young, D.P. Jr., V.K. Poulton, and K. Bay. 2007b. Ecological Baseline Studies Report. Proposed Dry Lake Wind Project, Navajo County, Arizona. Prepared for PPM Energy, Portland, Oregon, by Western EcoSystems Technology, Inc. (WEST), Cheyenne, Wyoming. July 1, 2007.

Young, D.P., Jr., J.D. Jeffrey, K. Bay, and W.P. Erickson. 2009c. Puget Sound Energy Hopkins Ridge Wind Project, Phase 1, Columbia County, Washington. Post-Construction Avian and Bat Monitoring, Second Annual Report: January - December, 2008. Prepared for Puget Sound Energy, Dayton, Washington, and the Hopkins Ridge Wind Project Technical Advisory Committee, Columbia County, Washington. Prepared by Western EcoSystems Technology, Inc. (WEST), Cheyenne, Wyoming, and Walla Walla, Washington. May 20, 2009.

Appendix A. Photographs from the Allete Clean Energy Project

Photo 1.General topography within the Allete Wind Resource Area.

Photo 2.Typical agricultural lands (sunflowers) found within the Allete Wind Resource Area.

Photo 3.Typical grazed pasturelands (native grasslands) within the Allete Wind Resource Area.

Photo 4. Typical vegetated creek within the Allete Wind Resource Area.

Photo 5. Typical deciduous tree row within the Allete Wind Resource Area.

Photo 6. Wooded draw located in the northwest corner of the Allete Wind Resource Area.

Photo 7. Typical cut hay field within the Allete Wind Resource Area.

Photo 8. Typical wetland found within the Allete Wind Resource Area.

Photo 9. Meteorological tower and powerline located within the Allete Wind Resource Area.

Photo 10. Typical farm located within the Allete Wind Resource Area.

Appendix B. Correspondence from the North Dakota Game and Fish Department and the US Fish and Wildlife Service (Pending)

Appendix C. Comprehensive Wildlife Conservation Strategy: 100 Species

Appendix C. Comprehensive Wildlife Conservation Strategy: 100 species.

Common Name	Scientific Name
Level-I Species	
horned grebe	*Podiceps auritus*
American white pelican	*Pelecanus erythrorhynchos*
American bittern	*Botaurus lentiginosus*
Swainson's hawk	*Buteo swainsoni*
ferruginous hawk	*Buteo regalis*
yellow rail	*Coturnicops noveboracensis*
willet	*Catoptrophorus semipalmatus*
upland sandpiper	*Bartramia longicauda*
long-billed curlew	*Numenius americanus*
marbled godwit	*Limosa fedoa*
Wilson's phalarope	*Phalaropus tricolor*
Franklin's gull	*Larus pipixcan*
black tern	*Chlidonias niger*
black-billed cuckoo	*Coccyzus erythropthalmus*
Sprague's pipit	*Anthus spragueii*
grasshopper sparrow	*Ammodramus savannarum*
Baird's sparrow	*Ammodramus bairdii*
Nelson's sharp-tailed sparrow	*Ammodramus nelsonii*
lark bunting	*Calamospiza melanocorys*
chestnut-collared longspur	*Calcarius ornatus*
Canadian toad	*Bufo hemiophrys*
plains spadefoot	*Spea bombifrons*
smooth green snake	*Liochlorophis vernalis*
western hognose snake	*Heterodon nasicus*
black-tailed prairie dog	*Cynomys ludovicianus*
sturgeon chub	*Macrhybopsis gelida*
sicklefin chub	*Macrhybopsis meeki*
pearl dace	*Margariscus margarita*
blue sucker	*Cycleptus elongatus*

Appendix C. Comprehensive Wildlife Conservation Strategy: 100 species.

Common Name	Scientific Name
Level-II Species	
northern pintail	*Anas acuta*
canvasback	*Aythya valisineria*
redhead	*Aythya americana*
northern harrier	*Circus cyaneus*
golden eagle	*Aquila chrysaetos*
bald eagle	*Haliaeetus leucocephalus*
prairie falcon	*Falco mexicanus*
sharp-tailed grouse	*Tympanuchus phasianellus*
greater prairie chicken	*Tympanuchus cupido*
greater sage-grouse	*Centrocercus urophasianus*
piping plover	*Charadrius melodus*
American avocet	*Recurvirostra americana*
least tern	*Sterna antillarum*
short-eared owl	*Asio flammeus*
burrowing owl	*Athene cunicularia*
red-headed woodpecker	*Melanerpes erythrocephalus*
loggerhead shrike	*Lanius ludovicianus*
sedge wren	*Cistothorus platensis*
dickcissel	*Spiza americana*
Le Conte's sparrow	*Ammodramus leconteii*
bobolink	*Dolichonyx oryzivorus*
common snapping turtle	*Chelydra serpentina*
short-horned lizard	*Phrynosoma douglassi*
northern redbelly snake	*Storeria occipitomaculata*
pygmy shrew	*Sorex hoyi*
Richardson’s ground squirrel	*Spermophilus richardsonii*
swift fox	*Vulpes velox*
river otter	*Lutra canadensis*
black-footed ferret	*Mustela nigripes*
paddlefish	*Polyodon spathula*
pallid sturgeon	*Scaphirhynchus albus*
silver chub	*Macrhybopsis storeriana*
northern redbelly dace	*Phoxinus eos*
flathead chub	*Platygobio gracilis*
trout-perch	*Percopsis omiscomaycus*
threeridge	*Amblema plicata*
wabash pigtoe	*Fusconaia flava*
mapleleaf	*Quadrula quadrula*
black sandshell	*Ligumia recta*
creek heelsplitter	*Lasmigona compressa*
pink heelsplitter	*Potamilus alatus*

Appendix C. Comprehensive Wildlife Conservation Strategy: 100 species.

Common Name	Scientific Name
Level-III Species	
whooping crane	*Grus americana*
peregrine falcon	*Falco peregrinus*
Brewer's sparrow	*Spizella breweri*
McCown's longspur	*Calcarius mccownii*
smooth softshell turtle	*Apalone mutica*
false map turtle	*Graptemys pseudogeographica*
northern prairie skink	*Eumeces septentrionalis*
northern sagebrush lizard	*Sceloporus graciosus*
arctic shrew	*Sorex arcticus*
western small-footed bat	*Myotis ciliolabrum*
long-eared bat	*Myotis evotis*
long-legged bat	*Myotis volans*
plains pocket mouse	*Perognathus flavescens*
hispid pocket mouse	*Chaetodipus hispidus*
sagebrush vole	*Lemmiscus curtatus*
eastern spotted skunk	*Spilogale putoris*
gray wolf	*Canis lupis*
chestnut lamprey	*Ichthyomyzon castaneus*
silver lamprey	*Ichthyomyzon unicuspis*
central stoneroller	*Campostoma anomalum*
hornyhead chub	*Nocomis biguttatus*
pugnose shiner	*Notropis anogenus*
blacknose shiner	*Notropis heterolepis*
rosyface shiner	*Notropis rubellus*
finescale dace	*Phoxinus neogaeus*
yellow bullhead	*Ameiurus natalis*
flathead catfish	*Pylodictis olivaris*
logperch	*Percina caprodes*
river darter	*Percina shumardi*
pink papershell	*Potamilus ohiensis*

Appendix D. Publically Available Source Documents for Wind Energy Facilities that Have Reported Bat Fatalities (Table 6)

Appendix D. Publically available source documents for wind energy facilities that have reported bat fatalities (Table 6).

Project, Location	Reference	Project, Location	Reference
Alite, CA	Chatfield et al. 2010	Maple Ridge, NY (06)	Jain et al. 2007
Barton Chapel, TX	WEST 2011	Maple Ridge, NY (07)	Jain et al. 2008
Big Horn, WA	Kronner et al. 2008	Maple Ridge, NY (08)	Jain et al. 2009c
Biglow Canyon, OR (Phase I; 08)	Jeffrey et al. 2009a	Marengo I, WA (09)	URS Corporation 2010b
Biglow Canyon, OR (Phase I; 09)	Enk et al. 2010	Marengo II, WA (09)	URS Corporation 2010c
Biglow Canyon, OR (Phase II; 2009/2010)	Enk et al. 2010	Mars Hill, ME (07)	Stantec 2008a
Blue Sky Green Field, WI	Gruver et al. 2009	Mars Hill, ME (08)	Stantec 2009a
Buena Vista, CA	Insignia 2009	McBride, Alb. (04)	Brown and Hamilton 2004
Buffalo Gap I, TX	Tierney 2007	Meyersdale, PA	Kerns and Kerlinger 2004, Arnett et al. 2005
Buffalo Gap II, TX	Tierney 2009	Moraine II, MN	Derby et al. 2010d
Buffalo Mountain, TN (00-03)	Nicholson et al. 2005	Mount Storm, WV (Fall 08)	Young et al. 2009b
Buffalo Mountain, TN (05)	Fiedler et al. 2007	Mount Storm, WV (09)	Young et al. 2009a, 2010a
Buffalo Ridge I, SD	Derby et al. 2010b	Mount Storm, WV (10)	Young et al. 2010b, 2011
Buffalo Ridge, MN (Phases I; 96)	Johnson et al. 2000a	Mountaineer, WV	Kerns and Kerlinger 2004
Buffalo Ridge, MN (Phase II; 01)	Johnson et al. 2003a	Munnsville, NY	Stantec 2008b
Buffalo Ridge, MN (Phase III; 01)	Johnson et al. 2003a	Nine Canyon, WA	Erickson et al. 2003b
Cassleman, PA (Spring and Fall 08)	Arnett et al. 2009	Noble Bliss, NY (08)	Jain et al. 2009d
Castle River, Alb.(02)	Brown and Hamilton 2006a	Noble Bliss, NY (09)	Jain et al. 2010a
Cedar Ridge, WI (09)	BHE Environmental 2010	Noble Clinton, NY (08)	Jain et al. 2009b
Cedar Ridge, WI (10)	BHE Environmental 2011	Noble Clinton, NY (09)	Jain et al. 2010b
Cohocton/Dutch Hill, NY	Stantec 2010	Noble Ellenburg, NY (08)	Jain et al. 2009a
Combine Hills, OR	Young et al. 2006	Noble Ellenburg, NY (09)	Jain et al. 2010c
Condon, OR	Fishman 2003	NPPD Ainsworth, NE	Derby et al. 2007
Crescent Ridge, IL	Kerlinger et al. 2007	Oklahoma Wind Energy Center, OK	Piorkowski and O'Connell 2010
Crystal Lake II, IA	Derby et al. 2010a	Pebble Springs, OR	Gritski and Kronner 2010b
Diablo, CA	WEST 2006, 2008	Pine Tree, CA	BioResource Consultants 2010
Dillon, CA	Chatfield et al. 2009	Prairie Winds (Minot), ND	Derby et al. 2011

Appendix D. Publically available source documents for wind energy facilities that have reported bat fatalities (Table 6).

Project, Location	Reference	Project, Location	Reference
Dry Lake, AZ	Thompson et al. 2011	Red Canyon, TX	Miller 2008
Elkhorn, OR	Jeffrey et al. 2009b	Ripley, Ont. (08)	Jacques Whitford 2009
Elm Creek, MN	Derby et al. 2010c	Ripley, Ont. (09)	Golder Associates 2010
Foote Creek Rim, WY (Phase I; 01-02)	Young et al. 2003	Shiloh I. CA	Kerlinger et al. 2010
Forward Energy Center, WI	Grodsky and Drake 2011	SMUD Solano, CA	Erickson and Sharp 2005
Goodnoe, WA	URS Corporation 2010a	Stateline, OR/WA (03)	Erickson et al. 2004
Grand Ridge, IL	Derby et al. 2010g	Stateline II, OR/WA (06)	Erickson et al. 2007
Hay Canyon, OR	Gritski and Kronner 2010a	Stetson Mountain, ME	Stantec 2009b
High Winds, CA (05)	Kerlinger et al. 2006	Summerview (06)	Brown and Hamilton 2006b
Hopkins Ridge, WA (06)	Young et al. 2007a	Summerview, Alb. (08)	Baerwald 2008
Hopkins Ridge, WA (08)	Young et al. 2009c	Top of Iowa, IA (04)	Jain 2005
Judith Gap, MT	TRC 2008	Tuolumne (Windy Point I), WA	Enz and Bay 2010
Kewaunee County, WI	Howe et al. 2002	Vansycle, OR	Erickson et al. 2000
Klondike, OR	Johnson et al. 2003b	Wessington Springs, SD	Derby et al. 2010f
Klondike II, OR	NWC and WEST 2007	White Creek, WA (09)	Gritski et al. 2009c
Klondike III, OR	Gritski et al. 2009a	Wild Horse, WA	Erickson et al. 2008
Klondike IIIa, OR	Gritski et al. 2009b	Winnebago, IA	Derby et al. 2010e
Leaning Juniper, OR	Kronner et al. 2007	Wolfe Island, Ont. (Report 1: May-June 09)	Stantec Ltd. 2010a
Lempster, NH (09)	Tidhar et al. 2010	Wolfe Island, Ont. (Report 2: July-December 09)	Stantec Ltd. 2010b
Lempster, NH (09)	Tidhar et al. 2011	Wolfe Island, Ont. (Report 3: Jan-June 10)	Stantec Ltd. 2011
Madison, NY	Kerlinger 2002		

One *Myotis evotis* was reported by Anderson et al. (2004).
Indiana bat fatalities reported by USFWS (2011a)

Appendix B

Agency Letters

From: Haupt, Michael L.
To: Daniel S. Flo
Subject: Allete Clean Energy ACE 1 Wind Energy Project - ND School Trust Land - SW4 36-141-88 Mercer County
Date: Thursday, December 01, 2011 2:16:54 PM

Daniel,

Good afternoon! The North Dakota School Trust owns surface in the SW4 of section 36, T141N, R88W, Mercer County. If there are any proposed tower locations or right of ways on this property please submit an on line application on our web site at http://www.land.nd.gov/surface/row/ for review. Submitting an application does not guarantee approval. Let me know if you have questions. Thanks.

Michael L. Haupt
Land Management Professional, CPRM
North Dakota Department of Trust lands
PO Box 5523, Bismarck ND 58506-5523
701-328-1916
mhaupt@nd.gov

North Dakota Department of Transportation

Francis G. Ziegler, P.E.
Director

Jack Dalrymple
Governor

November 30, 2011

Daniel Flo
Environmental Scientist
Barr Engineering Co.
4700 West 77th Street, Suite 200
Minneapolis, MN 55435

ALLETE CLEAN ENERGY TO CONSTRUCT A WIND ENERGY CONVERSION FACILITY, MORTON AND MERCER COUNTIES, BISMARCK, NORTH DAKOTA

We have reviewed your November 15, 2011, letter.

This project should have no adverse effect on the North Dakota Department of Transportation highways.

However, if because of this project any work needs to be done on highway right-of-way, appropriate permits and risk management documents will need to be obtained from the Department of Transportation District Engineer, Kevin Levi at 701-328-6955.

Robert Fode

ROBERT A. FODE, P.E., DIRECTOR – OFFICE OF PROJECT DEVELOPMENT

57/raf/js
c: Kevin Levi, Bismarck District Engineer

"VARIETY IN HUNTING AND FISHING"

NORTH DAKOTA GAME AND FISH DEPARTMENT

100 NORTH BISMARCK EXPRESSWAY BISMARCK, NORTH DAKOTA 58501-5095 PHONE 701-328-6300 FAX 701-328-6352

December 12, 2011

Daniel Flo
Environmental Scientist
Barr Engineering Co.
4700 West 77th Street – Suite 200
Minneapolis, MN 55435

Dear Mr. Flo:

RE: ACE 1 Wind Energy Center – Morton & Mercer Counties, North Dakota
Allete Clean Energy

The North Dakota Game and Fish Department has reviewed this project for wildlife concerns.

Our primary concern with wind power development is the disturbance of native prairie associated with construction of turbines, access roads, and other associated facilities. We ask that work within native prairie be avoided to the extent possible. This could include micro-siting turbines onto adjacent previously disturbed land, locating access roads on existing section line trails rather than across undisturbed native prairie, etc.

The National Wetland Inventory indicates various wetlands within the proposed project area. We recommend that any unavoidable wetland impacts be replaced in kind, above-ground appurtenances not be placed in wetland areas, and no alterations be made to existing drainage patterns.

The department has no data available regarding grouse lek locations within the project area, but we recommend lek surveys be conducted as the project is situated within the primary range for sharp-tailed grouse in North Dakota.

We also recommend that routine monitoring for avian and bat mortality be included as part of the facility maintenance plan for the life of the project. We would appreciate being kept informed as this project progresses, and if possible, we would like the GPS coordinates for each turbine after the site has been established.

Sincerely,

Greg Link
Chief
Conservation & Communication Division

js

North Dakota Geological Survey

Edward C. Murphy - State Geologist

Department of Mineral Resources

Lynn D. Helms - Director

North Dakota Industrial Commission

https://www.dmr.nd.gov/ndgs/

November 21, 2011

Mr. Daniel Flo
Barr Engineering Co.
4700 West 77th Street, Suite 200
Minneapolis, Minnesota 55435

RE: Allete Clean Energy's ACE 1 Wind Energy Project

Dear Mr. Flo:

Our department has mapped one mineable coal deposit within Allete Clean Energy's ACE 1 wind energy site. The Wilson Creek North coal deposit is located within T.140N, R.88W, sections 7, 18 and T.140N, R.89W, sections 12, 13. It covers approximately 160 acres and contains 2.8 million tons of mineable coal. https://www.dmr.nd.gov/ndgs/Coalmaps/pdf/24k/glnu_ne_c.pdf

Please contact me if you have any questions.

Sincerely,

Edward C. Murphy
State Geologist

600 E Boulevard Ave - Dept 405, Bismarck, North Dakota 58505-0840 Phone (701)328-8000 Fax (701)328-8010

JOB SERVICE North Dakota
jobsnd.com

Jack Dalrymple, Governor • Maren L. Daley, Executive Director

PO Box 5507 • Bismarck, ND 58506-5507

November 18, 2011

Mr. Daniel Flo
Environmental Scientist
Barr Engineering Co.
4700 West 77th Street, Suite 200
Minneapolis, MN 55435

RE: Allete Clean Energy's ACE 1 Wind Energy Project
Morton and Mercer Counties, North Dakota

Dear Mr. Flo:

Job Service North Dakota administers the employment service and unemployment insurance programs.

We have no comments regarding the proposed project and have no applicable permits that are required from Job Service North Dakota.

Sincerely,

Maren L. Daley
Executive Director

North Dakota State Water Commission

900 EAST BOULEVARD AVENUE, DEPT 770 • BISMARCK, NORTH DAKOTA 58505-0850
701-328-2750 • TDD 701-328-2750 • FAX 701-328-3696 • INTERNET: http://swc.nd.gov

November 29, 2011

Daniel Flo
Barr Engineering
4700 West 77th Street, STE 200
Minneapolis, MN 55435

Dear Mr. Flo:

This is in response to your request for review of environmental impacts associated with the Allete Clean Energy's ACE Wind Energy Project in Morton and Mercer Counties, ND.

The proposed project has been reviewed by State Water Commission staff and the following comments are provided:

- The property is not located in an identified floodplain and it is believed the project will not affect an identified floodplain.

- It is the responsibility of the project sponsor to ensure that local, state and federal agencies are contacted for any required approvals, permits, and easements.

- All waste material associated with the project must be disposed of properly and not placed in identified floodway areas.

- No sole-source aquifers have been designated in ND.

There are no other concerns associated with this project that affect State Water Commission or State Engineer regulatory responsibilities.

Thank you for the opportunity to provide review comments. If you have any questions, please call me at 328-4967.

Sincerely,

Linda Weispfenning
Water Resource Planner

LW:dp/1570

NORTH DAKOTA
DEPARTMENT of HEALTH

ENVIRONMENTAL HEALTH SECTION
Gold Seal Center, 918 E. Divide Ave.
Bismarck, ND 58501-1947
701.328.5200 (fax)
www.ndhealth.gov

November 28, 2011

Mr. Daniel Flo
Environmental Scientist
Barr Engineering Company
4700 West 77th Street, Suite 300
Minneapolis, MN 55435

Re: Allete Clean Energy's ACE 1 Wind Energy Project
Morton and Mercer Counties in North Dakota

Dear Mr. Flo:

This department has reviewed the information concerning the above-referenced project submitted under date of November 15, 2011, with respect to possible environmental impacts.

This department believes that environmental impacts from the proposed construction will be minor and can be controlled by proper construction methods. With respect to construction, we have the following comments:

1. All necessary measures must be taken to minimize fugitive dust emissions created during construction activities. Any complaints that may arise are to be dealt with in an efficient and effective manner.

2. Care is to be taken during construction activity near any water of the state to minimize adverse effects on a water body. This includes minimal disturbance of stream beds and banks to prevent excess siltation, and the replacement and revegetation of any disturbed area as soon as possible after work has been completed. Caution must also be taken to prevent spills of oil and grease that may reach the receiving water from equipment maintenance, and/or the handling of fuels on the site. Guidelines for minimizing degradation to waterways during construction are attached.

3. Projects disturbing one or more acres are required to have a permit to discharge storm water runoff until the site is stabilized by the reestablishment of vegetation or other permanent cover. Further information on the storm water permit may be obtained from the Department's website or by calling the Division of Water Quality (701-328-5210). Also, cities may impose additional requirements and/or specific best management practices for construction affecting their storm drainage system. Check with the local officials to be sure any local storm water management considerations are addressed.

4. Noise from construction activities may have adverse effects on persons who live near the construction area. Noise levels can be minimized by ensuring that construction equipment is equipped with a

recommended muffler in good working order. Noise effects can also be minimized by ensuring that construction activities are not conducted during early morning or late evening hours.

The department owns no land in or adjacent to the proposed improvements, nor does it have any projects scheduled in the area. In addition, we believe the proposed activities are consistent with the State Implementation Plan for the Control of Air Pollution for the State of North Dakota.

These comments are based on the information provided about the project in the above-referenced submittal. The U.S. Army Corps of Engineers may require a water quality certification from this department for the project if the project is subject to their Section 404 permitting process. Any additional information which may be required by the U.S. Army Corps of Engineers under the process will be considered by this department in our determination regarding the issuance of such a certification.

If you have any questions regarding our comments, please feel free to contact this office.

Sincerely,

L. David Glatt, P.E., Chief
Environmental Health Section

LDG:cc
Attach.

NORTH DAKOTA
DEPARTMENT of HEALTH

ENVIRONMENTAL HEALTH SECTION
Gold Seal Center, 918 E. Divide Ave.
Bismarck, ND 58501-1947
701.328.5200 (fax)
www.ndhealth.gov

Construction and Environmental Disturbance Requirements

These represent the minimum requirements of the North Dakota Department of Health. They ensure that minimal environmental degradation occurs as a result of construction or related work which has the potential to affect the waters of the State of North Dakota. All projects will be designed and implemented to restrict the losses or disturbances of soil, vegetative cover, and pollutants (chemical or biological) from a site.

Soils

Prevent the erosion of exposed soil surfaces and trapping sediments being transported. Examples include, but are not restricted to, sediment dams or berms, diversion dikes, hay bales as erosion checks, riprap, mesh or burlap blankets to hold soil during construction, and immediately establishing vegetative cover on disturbed areas after construction is completed. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, or land resources will be protected against compaction, vegetation loss, and unnecessary damage.

Surface Waters

All construction which directly or indirectly impacts aquatic systems will be managed to minimize impacts. All attempts will be made to prevent the contamination of water at construction sites from fuel spillage, lubricants, and chemicals, by following safe storage and handling procedures. Stream bank and stream bed disturbances will be controlled to minimize and/or prevent silt movement, nutrient upsurges, plant dislocation, and any physical, chemical, or biological disruption. The use of pesticides or herbicides in or near these systems is forbidden without approval from this Department.

Fill Material

Any fill material placed below the high water mark must be free of top soils, decomposable materials, and persistent synthetic organic compounds (in toxic concentrations). This includes, but is not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing of fill materials. All temporary fills must be removed. Debris and solid wastes will be removed from the site and the impacted areas restored as nearly as possible to the original condition.

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
P.O. Box 1458
Bismarck, ND 58502-1458

December 8, 2011

Daniel Flo
BARR Engineering Co.
4700 West 77th Street, Suite 200
Minneapolis, MN 55435

RE: Allete Clean Energy's ACE 1 Wind Energy Project

Dear Mr. Flo:

The Natural Resources Conservation Service (NRCS) has reviewed your letter dated November 15, 2011, concerning the construction of a wind energy conversion facility called the ACE 1 Wind Energy Project in Morton and Mercer Counties, North Dakota.

Important Farmlands - NRCS has a major responsibility with Farmland Protection Policy Act (FPPA) in documenting conversion of farmland (i.e., prime, statewide, and local importance) to non-agricultural use when the project utilizes federal funds. FPPA may apply under certain circumstances. Activities such as installing over head power lines, substations and wind turbines, etc.; will enact FPPA and the Form AD-1006 must be completed. Below are instructions for completing the Form AD-1006.

Enclosed is a Form AD-1006 or you may utilize a fillable, web based form at http://www.nrcs.usda.gov/Programs/fppa/pdf_files/AD1006.PDF to record the following. Complete Part I and Part III. We will also need a map of the site at an appropriate scale so we can accurately assess the area (e.g., 1:20,000 or 1:24,000). If the farmland (i.e., prime, statewide, and local importance) is determined to be subject to the FPPA, we will then complete Parts II and IV. NRCS will measure the relative value of the site as farmland on a scale of 0 to 100, according to the information sources listed in CFR, Sec. 658.5(a). If FPPA applies to this site, Form AD-1006 will be returned to your agency for completion of Part VI, Site Assessment Criteria.

Wetlands – The Wetland Conservation Provisions of the 1985 Food Security Act, as amended, provide that if a USDA participant converts a wetland for the purpose of, or to have the effect of, making agricultural production possible, loss of USDA benefits could occur. NRCS has developed the following guidelines for the installation of buried utilities. If these guidelines are followed, the impacts to the wetland(s) will be considered minimal allowing USDA participants to continue to receive USDA benefits. Following are the requirements: 1) Disturbance to the wetland(s) must be temporary, 2) no drainage of the wetland(s) is allowed (temporary or permanent), 3) mechanized landscaping necessary for installation is kept to a minimum and preconstruction contours are maintained, 4) temporary side cast material must be placed in such a manner not to be dispersed in the wetland, and 5) all trenches must be backfilled to the original wetland bottom elevation.

NRCS would recommend that impacts to wetlands be avoided. If the alignment of the project requires passage through a wetland, NRCS can complete a certified wetland determination, if requested by the landowner/operator.

If you have additional questions pertaining to FPPA, please contact Steve Sieler, State Soil Liaison, NRCS, Bismarck, North Dakota (701-530-2019).

Sincerely,

Steven J Sieler acs.

JEROME M. SCHAAR
State Soil Scientist/MO 7 Leader

Enclosure

* U.S. GOVERNMENT PRINTING OFFICE: 1984-451-159/1324

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request
Name Of Project	Federal Agency Involved
Proposed Land Use	County And State
PART II *(To be completed by SCS)*	Date Request Received By SCS

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply – do not complete additional parts of this form).* Yes ☐ No ☐	Acres Irrigated	Average Farm Size
Major Crop(s)	Farmable Land In Govt. Jurisdiction Acres: %	Amount Of Farmland As Defined in FPPA Acres: %
Name Of Land Evaluation System Used	Name Of Local Site Assessment System	Date Land Evaluation Returned By SCS

PART III *(To be completed by Federal Agency)*	Alternative Site Rating Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly				
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site				
PART IV *(To be completed by SCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value				
PART V *(To be completed by SCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*				

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points				
1. Area In Nonurban Use					
2. Perimeter In Nonurban Use					
3. Percent Of Site Being Farmed					
4. Protection Provided By State And Local Government					
5. Distance From Urban Builtup Area					
6. Distance To Urban Support Services					
7. Size Of Present Farm Unit Compared To Average					
8. Creation Of Nonfarmable Farmland					
9. Availability Of Farm Support Services					
10. On-Farm Investments					
11. Effects Of Conversion On Farm Support Services					
12. Compatibility With Existing Agricultural Use					
TOTAL SITE ASSESSMENT POINTS	160				
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100				
Total Site Assessment *(From Part VI above or a local site assessment)*	160				
TOTAL POINTS *(Total of above 2 lines)*	260				

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

STATE HISTORICAL SOCIETY OF NORTH DAKOTA

November 21, 2011

Mr. Daniel Flo
Environmental Scientist
Barr Engineering Co.
4700 West 77th Street, Suite 200
Minneapolis MN 55435

ND SHPO REF: 12-0189 PSC/Allete Clean Energy, a subsidiary of ALLETE, Inc. Wind Energy Conversion Facility – ACE 1 Wind Energy Project in Morton and Mercer Counties, North Dakota

Dear Mr. Flo,

We reviewed your preliminary information on ND SHPO REF: 12-0189 PSC/Allete Clean Energy, a subsidiary of ALLETE, Inc. Wind Energy Conversion Facility – ACE 1 Wind Energy Project in Morton and Mercer Counties North Dakota. There is potential for unrecorded and recorded cultural resource properties in a variety of physiographic settings in the overall project area. If the project requires permits issued by a federal and/or state agency (e.g., WAPA, RUS, COE, USFWS, BOR, PSC) then the respective agencies are to be consulted regarding their recommendations on the project. As a potential federal undertaking, we encourage agency consultation as part of the review process. Consultation should also include tribal nations, North Dakota Indian Affairs, ND DOT regarding any Scenic Byways, and managers or owners of properties maintained for recreational or scenic value.

We recommend a Class I Cultural Resource Inventory (file and records search with project maps) submittal. A Class II (reconnaissance) survey is warranted for standing structures in the visual Area of Potential Effect (APE). Class III (pedestrian) surveys will be warranted for all areas directly impacted by the project, including crane paths, access roads, transmissions lines and turbine pads. We encourage that tribal monitors be invited to survey the APE. As part of the Class III Inventory, NDCRS site updates should be submitted on all sites resurveyed.

Thank you for the opportunity to review this project to date. We look forward to further review of cultural resource surveys and site forms. If you have any questions please contact Paul Picha, Chief Archaeologist (701) 328-3574 or Susan Quinnell, Review and Compliance Coordinator at (701) 328-3576, e-mail squinnell@nd.gov

Sincerely,

Merlan E. Paaverud, Jr.
State Historic Preservation Officer (North Dakota) and
Director, State Historical Society of North Dakota

C: Patrick Fahn, PSC

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
NORTH DAKOTA REGULATORY OFFICE
1513 SOUTH 12TH STREET
BISMARCK ND 58504-6640

REPLY TO
ATTENTION OF

November 29, 2011

North Dakota Regulatory Office

Barr Engineering Co.
Attn: Daniel Flo, Environmental Scientist
4700 West 77th Street, Suite 200
Minneapolis Minnesota 55435

Dear Mr. Flo:

This is in response to a letter received November 18, 2011 requesting Department of the Army, U.S. Army Corps of Engineers (Corps) comments on behalf of ALLETE, Inc. regarding the Ace 1 Wind Energy Project in Morton and Mercer Counties in North Dakota.

Corps regulatory offices administer Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Section 10 of the Rivers and Harbors Act regulates work impacting navigable waters. Work over, in, or under navigable waters is considered to have an impact. Section 404 of the Clean Water Act regulates the discharge of dredge or fill material (temporarily or permanently) in waters of the United States. Waters of the United States may include, but are not limited to, rivers, streams, ditches, coulees, lakes, ponds, and their adjacent wetlands. Fill material includes, but is not limited to, rock, sand, soil, clay, plastics, construction debris, wood chips, overburden from mines or other excavation activities and materials used to create any structure or infrastructure in the waters of the United States.

Please submit a location map and completed Corps permit application (copy enclosed) describing all proposed work and construction methodology, to the letterhead address if a Section 10/404 permit is required.

Do not hesitate to contact this office by letter or telephone (701-255-0015) if we can be of further assistance.

Sincerely,

Daniel E. Cimarosti
Regulatory Program Manager
North Dakota

Enclosure

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
NORTH DAKOTA REGULATORY OFFICE
1513 SOUTH 12TH STREET
BISMARCK ND 58504-6640

REPLY TO
ATTENTION OF

November 29, 2011

North Dakota Regulatory Office

Barr Engineering Co.
Attn: Daniel Flo, Environmental Scientist
4700 West 77th Street, Suite 200
Minneapolis Minnesota 55435

Dear Mr. Flo:

This is in response to a letter received November 18, 2011 requesting Department of the Army, U.S. Army Corps of Engineers (Corps) comments on behalf of ALLETE, Inc. regarding the Ace 1 Wind Energy Project in Morton and Mercer Counties in North Dakota.

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Please submit a location map and completed Corps permit application (copy enclosed) describing all proposed work and construction methodology, to the letterhead address if a Section 10/404 permit is required.

Do not hesitate to contact this office by letter or telephone (701-255-0015) if we can be of further assistance.

Sincerely,

Daniel E. Cimarosti
Regulatory Program Manager
North Dakota

Enclosure

Instructions for Preparing a
Department of the Army Permit Application

Blocks 1 through 4. To be completed by Corps of Engineers.

Block 5. Applicant's Name. Enter the name and the E-mail address of the responsible party or parties. If the responsible party is an agency, company, corporation, or other organization, indicate the name of the organization and responsible officer and title. If more than one party is associated with the application, please attach a sheet with the necessary information marked Block 5.

Block 6. Address of Applicant. Please provide the full address of the party or parties responsible for the application. If more space is needed, attach an extra sheet of paper marked Block 6.

Block 7. Applicant Telephone Number(s). Please provide the number where you can usually be reached during normal business hours.

Blocks 8 through 11. To be completed, if you choose to have an agent.

Block 8. Authorized Agent's Name and Title. Indicate name of individual or agency, designated by you, to represent you in this process. An agent can be an attorney, builder, contractor, engineer, or any other person or organization. Note: An agent is not required.

Blocks 9 and 10. Agent's Address and Telephone Number. Please provide the complete mailing address of the agent, along with the telephone number where he / she can be reached during normal business hours.

Block 11. Statement of Authorization. To be completed by applicant, if an agent is to be employed.

Block 12. Proposed Project Name or Title. Please provide name identifying the proposed project, e.g., Landmark Plaza, Burned Hills Subdivision, or Edsall Commercial Center.

Block 13. Name of Waterbody. Please provide the name of any stream, lake, marsh, or other waterway to be directly impacted by the activity. If it is a minor (no name) stream, identify the waterbody the minor stream enters.

Block 14. Proposed Project Street Address. If the proposed project is located at a site having a street address (not a box number), please enter it here.

Block 15. Location of Proposed Project. Enter the latitude and longitude of where the proposed project is located. If more space is required, please attach a sheet with the necessary information marked Block 15.

Block 16. Other Location Descriptions. If available, provide the Tax Parcel Identification number of the site, Section, Township, and Range of the site (if known), and / or local Municipality that the site is located in.

Block 17. Directions to the Site. Provide directions to the site from a known location or landmark. Include highway and street numbers as well as names. Also provide distances from known locations and any other information that would assist in locating the site. You may also provide description of the proposed project location, such as lot numbers, tract numbers, or you may choose to locate the proposed project site from a known point (such as the right descending bank of Smith Creek, one mile downstream from the Highway 14 bridge). If a large river or stream, include the river mile of the proposed project site if known

Block 18. Nature of Activity. Describe the overall activity or project. Give appropriate dimensions of structures such as wing walls, dikes (identify the materials to be used in construction, as well as the methods by which the work is to be done), or excavations (length, width, and height). Indicate whether discharge of dredged or fill material is involved. Also, identify any structure to be constructed on a fill, piles, or float-supported platforms.

The written descriptions and illustrations are an important part of the application. Please describe, in detail, what you wish to do. If more space is needed, attach an extra sheet of paper marked Block 18.

Block 19. Proposed Project Purpose. Describe the purpose and need for the proposed project. What will it be used for and why? Also include a brief description of any related activities to be developed as the result of the proposed project. Give the approximate dates you plan to both begin and complete all work.

Block 20. Reasons for Discharge. If the activity involves the discharge of dredged and/or fill material into a wetland or other waterbody, including the temporary placement of material, explain the specific purpose of the placement of the material (such as erosion control).

Block 21. Types of Material Being Discharged and the Amount of Each Type in Cubic Yards. Describe the material to be discharged and amount of each material to be discharged within Corps jurisdiction. Please be sure this description will agree with your illustrations. Discharge material includes: rock, sand, clay, concrete, etc.

Block 22. Surface Areas of Wetlands or Other Waters Filled. Describe the area to be filled at each location. Specifically identify the surface areas, or part thereof, to be filled. Also include the means by which the discharge is to be done (backhoe, dragline, etc.). If dredged material is to be discharged on an upland site, identify the site and the steps to be taken (if necessary) to prevent runoff from the dredged material back into a waterbody. If more space is needed, attach an extra sheet of paper marked Block 22.

Block 23. Description of Avoidance, Minimization, and Compensation. Provide a brief explanation describing how impacts to waters of the United States are being avoided and minimized on the project site. Also provide a brief description of how impacts to waters of the United States will be compensated for, or a brief statement explaining why compensatory mitigation should not be required for those impacts.

Block 24. Is Any Portion of the Work Already Complete? Provide any background on any part of the proposed project already completed. Describe the area already developed, structures completed, any dredged or fill material already discharged, the type of material, volume in cubic yards, acres filled, if a wetland or other waterbody (in acres or square feet). If the work was done under an existing Corps permit, identity the authorization, if possible.

Block 25. Names and Addresses of Adjoining Property Owners, Lessees, etc., Whose Property Adjoins the Project Site. List complete names and full mailing addresses of the adjacent property owners (public and private) lessees, etc., whose property adjoins the waterbody or aquatic site where the work is being proposed so that they may be notified of the proposed activity (usually by public notice). If more space is needed, attach an extra sheet of paper marked Block 24.

Information regarding adjacent landowners is usually available through the office of the tax assessor in the county or counties where the project is to be developed.

Block 26. Information about Approvals or Denials by Other Agencies. You may need the approval of other federal, state, or local agencies for your project. Identify any applications you have submitted and the status, if any (approved or denied) of each application. You need not have obtained all other permits before applying for a Corps permit.

Block 27. Signature of Applicant or Agent. The application must be signed by the owner or other authorized party (agent). This signature shall be an affirmation that the party applying for the permit possesses the requisite property rights to undertake the activity applied for (including compliance with special conditions, mitigation, etc.).

DRAWINGS AND ILLUSTRATIONS

General Information.

Three types of illustrations are needed to properly depict the work to be undertaken. These illustrations or drawings are identified as a Vicinity Map, a Plan View or a Typical Cross-Section Map. Identify each illustration with a figure or attachment number.

Please submit one original, or good quality copy, of all drawings on 8½ x11 inch plain white paper (electronic media may be substituted). Use the fewest number of sheets necessary for your drawings or illustrations.

Each illustration should identify the project, the applicant, and the type of illustration (vicinity map, plan view, or cross-section). **While illustrations need not be professional (many small, private project illustrations are prepared by hand), they should be clear, accurate, and contain all necessary information.**

U.S. ARMY CORPS OF ENGINEERS

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT

(33 CFR 325)

OMB APPROVAL NO. 0710-0003
EXPIRES: 31 AUGUST 2012

Public reporting for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of the collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required)
First - Middle - Last -	First - Middle - Last -
Company -	Company -
E-mail Address -	E-mail Address -
6. APPLICANT'S ADDRESS:	9. AGENT'S ADDRESS:
Address-	Address-
City - State - Zip - Country -	City - State - Zip - Country -
7. APPLICANT'S PHONE NOs. w/AREA CODE	10. AGENTS PHONE NOs. w/AREA CODE
a. Residence b. Business c. Fax	a. Residence b. Business c. Fax

STATEMENT OF AUTHORIZATION

11. I hereby authorize, _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

_____ _____
SIGNATURE OF APPLICANT DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)

13. NAME OF WATERBODY, IF KNOWN (if applicable)	14. PROJECT STREET ADDRESS (if applicable)
	Address
15. LOCATION OF PROJECT	City - State- Zip-
Latitude: °N Longitude: °W	

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)

State Tax Parcel ID Municipality

Section - Township - Range -

17. DIRECTIONS TO THE SITE

18. Nature of Activity (Description of project, include all features)

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres

or

Linear Feet

23. Description of Avoidance, Minimization, and Compensation (see instructions)

24. Is Any Portion of the Work Already Complete? ☐ Yes ☐ No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address-

City - State - Zip -

b. Address-

City - State - Zip -

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT DATE SIGNATURE OF AGENT DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

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November 15, 2011

Mr. Daniel Cimarosti
U.S. Army Corps of Engineers
North Dakota Regulatory Office
1513 S. 12th St.
Bismarck, ND 58504

Re: Allete Clean Energy's ACE 1 Wind Energy Project

Dear Mr. Cimarosti:

Allete Clean Energy, a subsidiary of ALLETE, Inc., is planning to construct a wind energy conversion facility—the ACE 1 Wind Energy Project—in Morton and Mercer Counties in North Dakota. Allete Clean Energy has retained Barr Engineering Co. (Barr) to assist with the environmental permitting process for the project.

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Allete Clean Energy will seek a Certificate of Site Compatibility from the North Dakota Public Service Commission (Commission) pursuant to Chapter 49-22 of the North Dakota Century Code and Article 69-06 of the North Dakota Administrative Code. Allete Clean Energy plans to file the Certificate application in December, 2011 in order to obtain Commission approval by March, 2012. Allete Clean Energy plans to begin construction in the second quarter of 2012.

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If you have comments regarding this proposed project, you are encouraged to contact Daniel Flo at Barr at the address listed below, by e-mail (dflo@barr.com), or by phone (952-832-2975).

Sincerely,

Daniel Flo
Environmental Scientist

Enclosure: Project Overview Map

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Mercer	141N	88W	27, 28, 32, 33, 34, 35, 36

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November 15, 2011

Mr. Jeffrey Towner
U.S. Fish and Wildlife Service
North Dakota Field Office
3425 Miriam Ave.
Bismarck, ND 58501-7926

Re: Allete Clean Energy's ACE 1 Wind Energy Project

Dear Mr. Towner:

Allete Clean Energy, a subsidiary of ALLETE, Inc., is planning to construct a wind energy conversion facility—the ACE 1 Wind Energy Project—in Morton and Mercer Counties in North Dakota. Allete Clean Energy has retained Barr Engineering Co. (Barr) to assist with the environmental permitting process for the project.

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November 15, 2011

U.S. Bureau of Reclamation
Dakotas Area Office
304 E. Broadway Ave.
Bismarck, ND 58501

Re: Allete Clean Energy's ACE 1 Wind Energy Project

To Whom It May Concern:

Allete Clean Energy, a subsidiary of ALLETE, Inc., is planning to construct a wind energy conversion facility—the ACE 1 Wind Energy Project—in Morton and Mercer Counties in North Dakota. Allete Clean Energy has retained Barr Engineering Co. (Barr) to assist with the environmental permitting process for the project.

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November 15, 2011

U.S. Bureau of Land Management
North Dakota Field Office
99 23rd Ave. W., Suite A
Dickinson, ND 58601

Re: Allete Clean Energy's ACE 1 Wind Energy Project

To Whom It May Concern:

Allete Clean Energy, a subsidiary of ALLETE, Inc., is planning to construct a wind energy conversion facility—the ACE 1 Wind Energy Project—in Morton and Mercer Counties in North Dakota. Allete Clean Energy has retained Barr Engineering Co. (Barr) to assist with the environmental permitting process for the project.

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November 15, 2011

Mr. Jerome Schaar
Natural Resources Conservation Service
North Dakota State Office
220 East Rosser Avenue
Federal Building, Rm. 270
Bismarck, ND 58501

Re: Allete Clean Energy's ACE 1 Wind Energy Project

Dear Mr. Schaar:

Allete Clean Energy, a subsidiary of ALLETE, Inc., is planning to construct a wind energy conversion facility—the ACE 1 Wind Energy Project—in Morton and Mercer Counties in North Dakota. Allete Clean Energy has retained Barr Engineering Co. (Barr) to assist with the environmental permitting process for the project.

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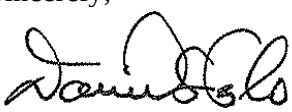

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Environmental Scientist

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November 15, 2011

North Dakota Farm Service Agency
1025 28th St S
Fargo, ND 58103

Re: Allete Clean Energy's ACE 1 Wind Energy Project

To Whom It May Concern:

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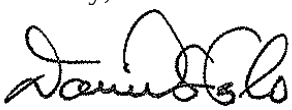

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November 15, 2011

Mr. Jerry Lein
North Dakota Public Service Commission
600 E. Boulevard, Dept. 408
Bismarck, ND 58505-0480

Re: Allete Clean Energy's ACE 1 Wind Energy Project

Dear Mr. Lein:

Allete Clean Energy, a subsidiary of ALLETE, Inc., is planning to construct a wind energy conversion facility—the ACE 1 Wind Energy Project—in Morton and Mercer Counties in North Dakota. Allete Clean Energy has retained Barr Engineering Co. (Barr) to assist with the environmental permitting process for the project.

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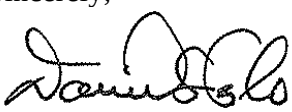

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Environmental Scientist

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November 15, 2011

North Dakota Aeronautics Commission
PO Box 5020
Bismarck, ND 58502-5020

Re: Allete Clean Energy's ACE 1 Wind Energy Project

To Whom It May Concern:

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November 15, 2011

North Dakota Attorney General
State Capitol
600 E. Boulevard Ave., Dept. 125
Bismarck, ND 58505

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November 15, 2011

North Dakota Dept. of Agriculture
600 E. Boulevard Ave., Dept. 602
Bismarck ND 58505-0020

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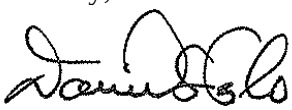

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		89W	1, 2, 11, 12, 13, 14
Mercer	141N	88W	27, 28, 32, 33, 34, 35, 36

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BARR

November 15, 2011

North Dakota Dept. of Health
600 East Boulevard Avenue
Bismarck, N.D. 58505-0200

Re: Allete Clean Energy's ACE 1 Wind Energy Project

To Whom It May Concern:

Allete Clean Energy, a subsidiary of ALLETE, Inc., is planning to construct a wind energy conversion facility—the ACE 1 Wind Energy Project—in Morton and Mercer Counties in North Dakota. Allete Clean Energy has retained Barr Engineering Co. (Barr) to assist with the environmental permitting process for the project.

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If you have comments regarding this proposed project, you are encouraged to contact Daniel Flo at Barr at the address listed below, by e-mail (dflo@barr.com), or by phone (952-832-2975).

Sincerely,

Daniel Flo
Environmental Scientist

Enclosure: Project Overview Map

Table: Sections within the ACE 1 Wind Energy Project Boundary

County	Township	Range	Section
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Mercer	141N	88W	27, 28, 32, 33, 34, 35, 36

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November 15, 2011

North Dakota Dept. of Human Services
600 East Boulevard Avenue, Dept 325
Bismarck N.D. 58505-0250

Re: Allete Clean Energy's ACE 1 Wind Energy Project

To Whom It May Concern:

Allete Clean Energy, a subsidiary of ALLETE, Inc., is planning to construct a wind energy conversion facility—the ACE 1 Wind Energy Project—in Morton and Mercer Counties in North Dakota. Allete Clean Energy has retained Barr Engineering Co. (Barr) to assist with the environmental permitting process for the project.

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BARR

November 15, 2011

North Dakota Dept. of Labor
600 East Boulevard Avenue, Dept 406
Bismarck ND 58505-0340

Re: Allete Clean Energy's ACE 1 Wind Energy Project

To Whom It May Concern:

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November 15, 2011

North Dakota Dept. of Career and Technical Education
600 East Boulevard Avenue, Dept. 270
Bismarck, ND 58505-0610

Re: Allete Clean Energy's ACE 1 Wind Energy Project

To Whom It May Concern:

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November 15, 2011

North Dakota Dept. of Commerce
Economic Development and Finance
1600 E. Century Ave., Suite 2
Bismarck, ND 58503

Re: Allete Clean Energy's ACE 1 Wind Energy Project

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November 15, 2011

North Dakota Energy Development Impact Office
PO Box 5523
Bismarck, ND 58506-5523

Re: Allete Clean Energy's ACE 1 Wind Energy Project

To Whom It May Concern:

Allete Clean Energy, a subsidiary of ALLETE, Inc., is planning to construct a wind energy conversion facility—the ACE 1 Wind Energy Project—in Morton and Mercer Counties in North Dakota. Allete Clean Energy has retained Barr Engineering Co. (Barr) to assist with the environmental permitting process for the project.

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November 15, 2011

Mr. Paul Schadewald
North Dakota Game and Fish Dept.
100 N. Bismarck Expressway
Bismarck, ND 58501-5095

Re: Allete Clean Energy's ACE 1 Wind Energy Project

Dear Mr. Shadewald:

Allete Clean Energy, a subsidiary of ALLETE, Inc., is planning to construct a wind energy conversion facility—the ACE 1 Wind Energy Project—in Morton and Mercer Counties in North Dakota. Allete Clean Energy has retained Barr Engineering Co. (Barr) to assist with the environmental permitting process for the project.

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Environmental Scientist

Enclosure: Project Overview Map

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November 15, 2011

North Dakota Geological Survey
600 East Boulevard Ave.
Bismarck, ND 58505-0840

Re: Allete Clean Energy's ACE 1 Wind Energy Project

To Whom It May Concern:

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November 15, 2011

Office of the Governor
State of North Dakota
600 East Boulevard Ave.
Bismarck, ND 58505-0001

Re: Allete Clean Energy's ACE 1 Wind Energy Project

To Whom It May Concern:

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BARR

November 15, 2011

Mr. Ronald Henke
North Dakota Dept. of Transportation
608 East Boulevard Ave.
Bismarck, ND 58505-0700

Re: Allete Clean Energy's ACE 1 Wind Energy Project

Dear Mr. Henke:

Allete Clean Energy, a subsidiary of ALLETE, Inc., is planning to construct a wind energy conversion facility—the ACE 1 Wind Energy Project—in Morton and Mercer Counties in North Dakota. Allete Clean Energy has retained Barr Engineering Co. (Barr) to assist with the environmental permitting process for the project.

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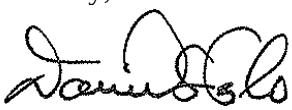

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November 15, 2011

Mr. Merlan Paaverud, Jr.
State Historical Society of North Dakota
State Historic Preservation Office
612 East Boulevard Ave.
Bismarck, ND 58505

Re: Allete Clean Energy's ACE 1 Wind Energy Project

Dear Mr. Paaverud:

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November 15, 2011

North Dakota Indian Affairs Commission
600 East Boulevard Ave.
1st Floor, Room #117
Bismarck, ND 58505

Re: Allete Clean Energy's ACE 1 Wind Energy Project

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BARR

November 15, 2011

Job Service of North Dakota
PO Box 5507
Bismarck, ND 58506-5507

Re: Allete Clean Energy's ACE 1 Wind Energy Project

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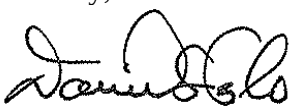

Daniel Flo
Environmental Scientist

Enclosure: Project Overview Map

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		89W	1, 2, 11, 12, 13, 14
Mercer	141N	88W	27, 28, 32, 33, 34, 35, 36

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November 15, 2011

Mr. Michael Haupt
North Dakota State Land Dept.
P.O. Box 5523
Bismarck, ND 58506-5523

Re: Allete Clean Energy's ACE 1 Wind Energy Project

Dear Mr. Haupt:

Allete Clean Energy, a subsidiary of ALLETE, Inc., is planning to construct a wind energy conversion facility—the ACE 1 Wind Energy Project—in Morton and Mercer Counties in North Dakota. Allete Clean Energy has retained Barr Engineering Co. (Barr) to assist with the environmental permitting process for the project.

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November 15, 2011

Jesse Hanson
North Dakota Parks and Recreation Dept.
1600 E. Century Ave., Suite 3
Bismarck, ND 58503

Re: Allete Clean Energy's ACE 1 Wind Energy Project

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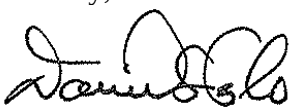

Daniel Flo
Environmental Scientist

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November 15, 2011

North Dakota Dept. of Commerce
Division of Community Services
PO Box 2057
Bismarck, ND 58502-2057

Re: Allete Clean Energy's ACE 1 Wind Energy Project

To Whom It May Concern:

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November 15, 2011

North Dakota State Soil Conservation Committee
NDSU Extension Service, Dept. 7000
P.O. Box 6050
Fargo, ND 58108-6050

Re: Allete Clean Energy's ACE 1 Wind Energy Project

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November 15, 2011

Mr. Larry Knudtson
North Dakota State Water Commission
900 East Boulevard Avenue, Dept 770
Bismarck, ND 58505-0850

Re: Allete Clean Energy's ACE 1 Wind Energy Project

Dear Mr. Knudtson:

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November 15, 2011

Morton County Courthouse
ATTN: Morton County Emergency Services
210 2nd Ave. NW
Mandan, ND 58554

Re: Allete Clean Energy's ACE 1 Wind Energy Project

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November 15, 2011

Morton County Courthouse
ATTN: Morton County Park Board
210 2nd Ave. NW
Mandan, ND 58554

Re: Allete Clean Energy's ACE 1 Wind Energy Project

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November 15, 2011

Morton County Courthouse
ATTN: Morton County Highway Dept.
210 2nd Ave. N
Mandan, ND 58554

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November 15, 2011

Morton County Courthouse
ATTN: Morton County Planning and Zoning Administrator
210 2nd Ave. NW
Mandan, ND 58554

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BARR

November 15, 2011

Morton County Courthouse
ATTN: Morton County Auditor
210 2nd Ave. NW
Mandan, ND 58554

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November 15, 2011

Morton County Courthouse
ATTN: Morton County Water Resource District
210 2nd Ave. NW
Mandan, ND 58554

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November 15, 2011

Mercer County Emergency Services
1021 Arthur Street
Stanton, ND 58571

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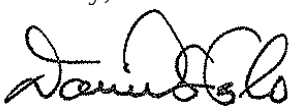

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November 15, 2011

Mercer County Highway Dept.
1809 7th St NE
Beulah, ND 58523

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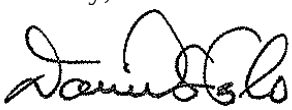
Enclosed is a map of the proposed ACE 1 Wind Energy Project location. The table on Page 2 includes the townships, ranges, and sections encompassed within the ACE 1 project boundary. The ACE 1 Wind Energy Project will interconnect with a proposed Minnesota Power substation in Mercer County, and then a proposed 230 kV transmission line that will connect with Minnesota Power's existing 230 kV Bison – Square Butte Line No. 84 to interconnect at the Square Butte 230 kV Substation. The wind-generated electricity will then be transmitted to Minnesota Power's transmission system via an existing 250kV DC Line and existing AC transmission system as available.

Allete Clean Energy will seek a Certificate of Site Compatibility from the North Dakota Public Service Commission (Commission) pursuant to Chapter 49-22 of the North Dakota Century Code and Article 69-06 of the North Dakota Administrative Code. Allete Clean Energy plans to file the Certificate application in December, 2011 in order to obtain Commission approval by March, 2012. Allete Clean Energy plans to begin construction in the second quarter of 2012.

The purpose of this letter is to inform your organization of the proposed ACE 1 Wind Project and to seek your comments regarding environmental permits and approvals that may be required. Copies of all correspondence received in response to this letter will be included with the Certificate application for the Commission's records. Therefore, we would greatly appreciate receiving your comments in writing by December 15, 2011.

If you have comments regarding this proposed project, you are encouraged to contact Daniel Flo at Barr at the address listed below, by e-mail (dflo@barr.com), or by phone (952-832-2975).

Sincerely,



Daniel Flo
Environmental Scientist

Enclosure: Project Overview Map

Table: Sections within the ACE 1 Wind Energy Project Boundary

County	Township	Range	Section
Morton	140N	88W	3, 4, 5, 6, 7, 8, 9, 10, 16, 17, 18
		89W	1, 2, 11, 12, 13, 14
Mercer	141N	88W	27, 28, 32, 33, 34, 35, 36

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November 15, 2011

Mercer County Planning and Zoning Administrator
Mercer County Courthouse
P.O. Box 39
Stanton, ND 58571

Re: Allete Clean Energy's ACE 1 Wind Energy Project

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November 15, 2011

Mercer County Water Resource Board
206 Central Avenue North
Hazen, ND 58545

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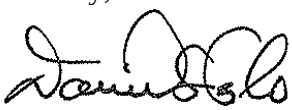

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