SCOPING MEETING REPORT

Wilton IV Wind Energy Center
Environmental Impact Statement

Western Area Power Administration

October 2011

This page intentionally left blank.

Introduction

Wilton Wind IV, LLC, a subsidiary of NextEra Energy Resources, LLC (NextEra), proposes to construct the Wilton IV Wind Energy Center (Project), a 99-megawatt (MW) wind energy generation facility in Burleigh County, North Dakota. The Project would connect to a Western Area Power Administration (Western) transmission line. Because of this federal nexus, the Project requires review under the National Environmental Policy Act (NEPA). Additionally, NextEra is proposing to operate its three existing wind energy projects – Wilton Wind I Energy Center (formerly known as Burleigh County Wind), Wilton Wind II Energy Center, and the Baldwin Wind Energy Center (collectively the Existing Projects) – at levels exceeding their administrative cap of 50 average annual megawatts (MW). Western has decided to proceed with an Environmental Impact Statement (EIS) to evaluate the environmental effects of the Project.

Western is serving as the lead agency for the environmental review process. The scoping process for the Project began on July 20, 2011 when Western published a notice of intent (NOI) in the Federal Register to conduct a public scoping meeting and prepare an EIS for the Project in accordance with ENPA. In addition to the NOI, a letter was sent to representatives of agencies, tribes, and interested parties to solicit input on the Project and invite them to the meeting. The public scoping meeting was held near the proposed Project at Wilton Memorial Hall in Wilton, North Dakota, on July 26, 2011. The meeting was held in an open house format from 5:00 pm to 8:00 pm.

Several agencies were invited to the meeting (Appendix 1) and advertisements were placed in the Bismarck Tribune from Monday, July 11 through Wednesday, July 20, 2011 (Appendix 2). The meeting was also included in the public service announcements for the following six radio stations in the Bismarck area from Tuesday, July 19, 2011 through Tuesday, July 26, 2011: KQDY, KFYR, KBMR, ROCK 101, Y93 and ESPN. Western published a Notice of Intent (NOI) to prepare an EIS in the Federal Register on July 20, 2011 (Appendix 2).

Approximately 50 members of the public attending the meeting. Each attendee was asked to sign in, and was given a Project Fact Sheet and a comment sheet (Appendix 3). Maps displayed throughout the room illustrated the Project boundary (dated July 2011), the turbine layout, and aerial photography base (Appendix 4). A flowchart illustrating the NEPA process and a couple of posters describing the reason for the open house were also displayed (see photos in Appendix 5).

The following people were available to describe the Project and answer questions: Matt Marsh, Mark Wieringa, Western; Scott Scovill, Allen Wynn, Casey Wollschlager, NextEra Energy; Tracey Dubuque, Tetra Tech.

Because the meeting was held as an open house format, there was no formal presentation. Attendees received a Project Fact Sheet and a Comment Sheet (Appendix 3). Attendees were able to walk around the room to review the displays (Appendix 4 and Appendix 5) and discuss the Project with representatives from Western and NextEra Energy. Photos from the meeting are found in Appendix 5.

The period to receive written comments was open until August 20, 2011. As a result of the scoping process, 18 comments were received from seven agencies, one non-governmental organization, and 10 individuals (Appendix 6).

Appendices

Appendix 1 – Invitations
Appendix 2 – Public Notices
Appendix 3 – Sign in Sheet and Handouts
Appendix 4 – Project Map
Appendix 5 – Photos
Appendix 6 – Public Scoping Comments

Appendix 1 - Invitations

JUL 20 2011

B0401.BL

Dear Customers and Interested Parties:

Western Area Power Administration (Western) is announcing the scoping period for the Wilton IV Wind Energy Center Environmental Impact Statement (EIS). The proposed project is a 99-megawatt (MW) wind energy facility in Burleigh County, North Dakota (see attached figure). The proposed project would interconnect with Western's transmission line. Western is preparing an EIS in order to comply with the National Environmental Policy Act (NEPA), which requires Western to take into account the environmental impacts that could result from an action. NEPA also requires that federal agencies seek public input on proposed projects.

The principal components of the facility will include: 62 wind turbine generators, an underground power collection system, a connector road system, and an operations and maintenance facility. Wind turbine towers would be approximately 426 feet tall, from the tip of the blade to the base. The wind turbine rotors would be 328 feet in diameter. Electrical power from the proposed facility would interconnect into Western's existing Hilken Switching Station near Wilton, North Dakota. Construction of the Wilton IV Wind Energy Center is proposed to begin in summer of 2012.

The scoping period provides an opportunity for the public and federal, state, local agencies, and tribal governments to identify issues or alternatives that should be addressed in the EIS. The public scoping period begins on July 20, 2011, and ends on August 20, 2011. One public scoping meeting will be held to provide an opportunity for the public to submit scoping comments on the proposal in person, talk to staff working on the project, and to resource specialists. The scoping meeting will be held on July 26, 2011, between 5:00 p.m. and 8:00 p.m. at the Wilton Memorial Hall, 105 Dover Avenue, Wilton, North Dakota, 58579.

Comments will be accepted at the scoping meeting, by letter to me at the above address, or by e-mailing me at mmarsh@wapa.gov. Please refer to the Wilton IV Wind Energy Facility in your correspondence. Send all comments by close of business August 20, 2011.

Sincerely,

/S/ Matt Marsh

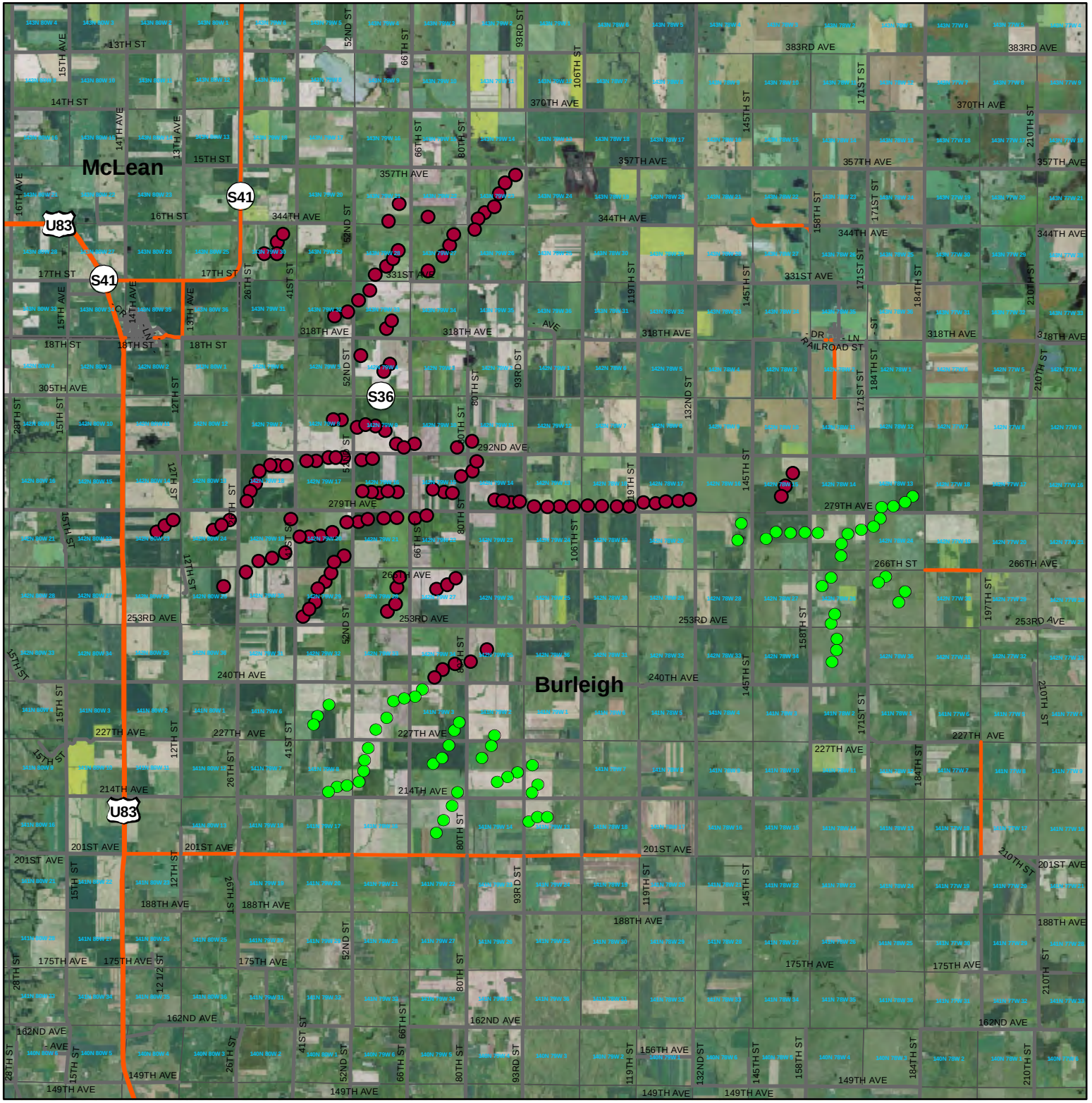
Matt Marsh
Environmental Protection Specialist

B0401.BL:mm:db:7/20/11:R:\Groups\Environmental\Letters to Customers\Scoping Meeting for Wilton Wind Project.docx

WAPA F 1400.59a
(5-93)

OFFICIAL FILE COPY

CONCURRENCES	
RTG. SYMBOL	B0401
SIGNATURE	MM
DATE	7-20-11
RTG. SYMBOL	B6002
SIGNATURE	
DATE	7/20/11
RTG. SYMBOL	
SIGNATURE	
DATE	
RTG. SYMBOL	
SIGNATURE	
DATE	
RTG. SYMBOL	
SIGNATURE	
DATE	
RTG. SYMBOL	
SIGNATURE	
DATE	
RTG. SYMBOL	
SIGNATURE	
DATE	
RTG. SYMBOL	
SIGNATURE	
DATE	
RTG. SYMBOL	
SIGNATURE	
DATE	



Wilton IV Turbine Layout NAIP 1m Imagery

Burleigh County, ND

JULY 2011

Legend

- Wilton IV Wind Turbine
- Existing Wind Turbine
- Local Road
- Major Road
- PLSS Section Boundary
- County Boundary
- State Boundary

Sources: ND DOT Roads, NAIP 1m Imagery

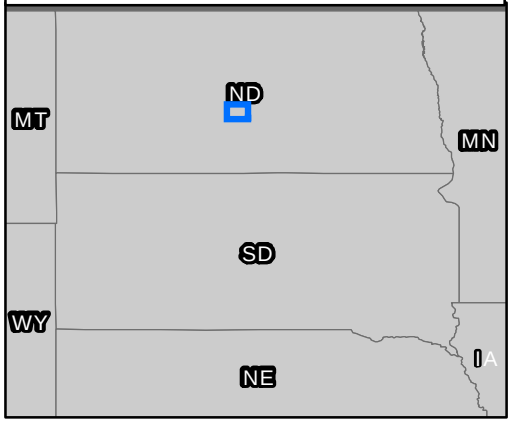
N

0 3

Miles

File: P:\FPL Energy\Dakotas\Contract XXXX - Wilton IV\GIS\Spatial\MXD\WiltonIV_ProjectBoundary_Turbines_Aerial_20110720.mxd
Coordinate System: NAD 1983 StatePlane North Dakota South FIPS 3302 Feet

LOCATION MAP



«First Name»	«Last Name»	«Job Title»	«Company/agency»	«Address 1»	«Address 2»	«City»	«State»	«Zip»
John	Fowler	Executive Director	Advisory Council on Historic Preservation	Old Post Office Building, Suite 803	1100 Pennsylvania Avenue, NW	Washington	DC	20004
Brian	Bitner	Chairman	Burleigh County Commission		751 80th St SE	Bismarck	ND	58504
Mark	Armstrong	Commissioner	Burleigh County Commission		618 West Boulevard Avenue	Bismarck	ND	58501
Doug	Schonert	Vice Chairman	Burleigh County Commission		14600 201st Ave NE	Baldwin	ND	58521
Jerry	Woodcox	Commissioner	Burleigh County Commission		449 E Brandon Dr	Bismarck	ND	58503
Jim	Peluso	Commissioner	Burleigh County Commission		6131 Ponderosa Ave	Bismarck	ND	58503
Linn	Berg	Chair	Burleigh County Soil Conservation District		6700 366th Street NE	Sterling	ND	58572
Dale	Coleman	Chairperson of Board of Supervisers	Burleigh County, Crofte Township		PO Box 134	Baldwin	ND	58521
Randy	Schafer	Chairman of Board of Supervisers	Burleigh County, Ecklund Township		1741 292nd Ave NE	Wilton	ND	58579
David	Coleman	Chairperson of Board of Supervisers	Burleigh County, Ghylin Township		25751 158th St NE	Wilton	ND	58579
Dave	Peterson	Chairperson of Board of Supervisers	Burleigh County, Painted Woods Township		7351 292nd Ave NW	Wilton	ND	58579
Rosemary	Hanson	Chairperson of Board of Supervisers	Burleigh County, Rockland Township		24151 223rd St NE	Wing	ND	58494
Ronald	Peck	Mayor	City of Wilton		121 Dakota Avenue	Wilton	ND	58579
Lawrence & Amy	Igl	President	Dakota Prairie Audubon Society		1514 Skyline Lane	Jamestown	ND	58401
Steve	Adair	Regional Director	Ducks Unlimited Great Plains Regional Office		2525 River Road	Bismarck	ND	58503-9011
Jean	Schoenhard	County Executive Director	Farm Service Agency	Burleigh County Farm Service Agency	916 East Interstate Avenue	Bismarck	ND	58503-0548
Barry	Cooper	Regional Administrator	Federal Aviation Administration, Great Lakes Region	O'Hare Lake Office Center	2300 East Devon Avenue	Des Plaines	IL	60018
Steve	Hardegen	Regional Environmental Officer	Federal Emergency Management Agency Region VIII	Environmental & Historic Preservation	Denver Federal Center, Building 710, Box 25267	Denver	CO	80225-0267
Jeff	Wright	Director	Federal Energy Regulatory Commission	Office of Energy Projects	888 First Street, NE	Washington	DC	20426
Wendall	Meyer	Division Administrator	Federal Highway Administration	North Dakota Division	1471 Interstate Loop	Bismarck	ND	58503-0567
Jack	Russel	Acting State Conservationist	Natural Resources Conservation Service	North Dakota State Office	220 East Rosser Ave, Federal Building, Rm 270	Bismarck	ND	58501
Jay	Fuhrer	District Conservationist	Natural Resources Conservation Service	Bismarck Field Office	916 E. Interstate Ave, Suite 6	Bismarck	ND	58503
Doug	Goehring	Agriculture Commissioner	North Dakota Department of Agriculture		600 East Boulevard Avenue, Dept 602	Bismarck	ND	58505-0020
Paul	Lucy	Director	North Dakota Department of Commerce	Economic Development and Finance Division	PO Box 2057	Bismarck	ND	58502-2057
Kevin	Levi	District Engineer	North Dakota Department of Transportation	Bismarck District	218 South Airport Road	Bismarck	ND	58504-6003
Terry	Steinwand	Director	North Dakota Game and Fish Department		100 N. Bismarck Expressway	Bismarck	ND	58501-5095
Jeff	Delzer	Representative	North Dakota House of Representatives	District 8	2919 Fifth Street NW	Underwood	ND	58576-9603
Dwight	Wrangham	Representative	North Dakota House of Representatives	District 8	301 52nd Street SE	Bismarck	ND	58501-8604
Duane	DeKrey	Representative	North Dakota House of Representatives	District 14	4323 27th Street SE	Tappen	ND	58487-9398
Robin	Weisz	Representative	North Dakota House of Representatives	District 14	50 Highway 3 South	Hurdsfield	ND	58451-9009
Scott	Davis	Executive Director	North Dakota Indian Affairs Commission	600 East Boulevard Avenue	1st Floor Judicial Wing, Rm 117	Bismarck	ND	58505
Mark	Zimmerman	Director	North Dakota Parks and Recreation Department		1600 E. Century Ave, Suite 3	Bismarck	ND	58503
Darrell	Nitschke	Executive Secretary	North Dakota Public Service Commission		600 E. Boulevard Avenue, Dept 408	Bismarck	ND	58505-0480
Fern	Swenson	Deputy State Historic Preservation Officer	North Dakota State Historic Preservation Office					
Lance	Gaebe	Land Commissioner	North Dakota State Land Department	1707 North 9th Street	PO Box 5523	Bismarck	ND	58506-5523
Jack	Dalrymple	Governor	Office of the Governor		600 East Boulevard Avenue	Bismarck	ND	58505-0001
			Pheasants Forever, Inc.	Chapter #47 - Burleigh County	1783 Buerkle Circle	St. Paul	MN	55110
Blaine	Nordwall	Chairperson	Sierra Club	North Dakota Office	311 East Thayer Ave, Suite 113	Bismarck	ND	58501
Merlan	Paaverud, Jr.	Director	State Historic Society of North Dakota	State Historic Preservation Office	612 East Bouleavard Avenue	Bismarck	ND	58505
Bob	Paulson	Western Dakotas Program Director	The Nature Conservancy		822 Main Street	Rapid City	SD	57701
Daniel	Cimarosti	Regulatory Program Manager	U.S. Army Corps of Engineers, Omaha District	ND Regulatory Office	1513 South 12th Street	Bismarck	ND	58504-6640
Matthew	Ponish	National Environmental Compliance	U.S. Department of Agriculture		1400 Independence Ave., SW STOP 0513	Washington	DC	20250
Willie	Taylor, Ph.D.	Director	U.S. Department of the Interior	Office of Environmental Policy and Compliance	1849 C Street, NW MS 2462	Washington	DC	20240
Larry	Svoboda	Director	U.S. Environmental Protection Agency	NEPA Program	1595 Wynkoop St., 8EPR-N Mail Code	Denver	CO	80202-1129
James	Martin	Regional Administrator	U.S. Environmental Protection Agency, Region 8		1595 Wynkoop St., 8EPR-N Mail Code	Denver	CO	80202-1129
Jeff	Towner	Field Supervisor	U.S. Fish & Wildlife Service	North Dakota Field Office	3425 Miriam Avenue	Bismarck	ND	58501-7926
Ed	Meendering	Wetland Manager	U.S. Fish & Wildlife Service	Long Lake Wetland Management District	12000 353rd St. SE	Moffit	ND	58560-9704
Max	Ethridge	Acting Central Regional Director	U.S. Geological Survey	Central Region	Denver Federal Center, Building 810, Mail Stop 150	Denver	CO	80225-0046
Rick	Berg	Congressman	United States House of Representatives	220 East Rosser Avenue	328 Federal Building	Bismarck	ND	58501
Kent	Conrad	U.S. Senator	United States Senate		530 Hart Senate Office Building	Washington	DC	20510
John	Hoeven	U.S. Senator	United States Senate		120 Russel Senate Office Building	Washington	DC	20510
Craig	Johnson	Superintendent	Wilton School District		PO Box 249	Wilton	ND	58579

Appendix 2 – Public Notices

was preferred over other alternatives because it represented the best capacity for meeting current and reasonably foreseeable national security requirements.

Comment 9. The Y–12 Final SWEIS wrongly declares that the demolition/disposal of existing facilities arising from relocation of operations to a new UPF is ''not ripe.''

Response. The Integrated Facility Disposition Program (IFDP) is DOE's program for disposing of legacy materials and facilities at the Oak Ridge National Laboratory (ORNL) and Y–12. The IFDP includes both existing excess facilities (*e.g.,* facilities not required for DOE's needs or the discharge of its responsibilities) and newly identified excess (or soon to be excess) facilities. Under the IFDP, the decontamination and decommissioning (D&D) of approximately 188 facilities at ORNL, 112 facilities at Y–12, and remediation of soil and groundwater contamination would occur over the next 30 to 40 years. The IFDP will be conducted as a remedial action under the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA). Cleanup and D&D activities conducted under CERCLA are reviewed through the CERCLA process, which incorporates NEPA values. The potential impacts of the IFDP are analyzed in the cumulative impacts section of the SWEIS in chapter 6 (See comment-response 12.P on page 3–44 of Volume II of the Y–12 Final SWEIS). Although IFDP D&D activities are expected to commence within the next three to five years, the major IFDP D&D activities would not take place for many years (*e.g.,* most likely any D&D activities associated with the action alternatives in this SWEIS would not take place prior to approximately 2018). These major D&D activities are to be resolved under the provisions of CERCLA and are beyond the planning basis for this SWEIS (See Section 5.16 on page 5–100 of Volume I of the Y–12 Final SWEIS). NNSA believes that the Y–12 Final SWEIS includes an analysis of all reasonable alternatives and all cleanup/waste management actions that are required to be included in a NEPA analysis.

Comment 10. The Tennessee Division of Radiological Health is not listed as a consulting agency. They should be given an opportunity, and time, to comment on the Y–12 Final SWEIS before any ROD is issued.

Response. During the Y–12 SWEIS process, NNSA specifically invited TDEC to be a cooperating agency in the preparation of the SWEIS and also requested that other agencies express their interest in being designated as a cooperating agency in the preparation of the Y–12 SWEIS (see 70 FR 71270, November 28, 2005). The Tennessee Division of Radiological Health is part of TDEC. TDEC comments on the Draft Y–12 SWEIS are contained on page 2–123 of Volume II of the Y–12 Final SWEIS.

Comment 11. Commentors stated that an article in the Knoxville News-Sentinel on March 31, 2011, casts new light on the seismic conditions of current facilities and underscores OREPA's concerns, first raised in 1994 and repeatedly in the succeeding years, about the structural integrity of facilities at Y–12 including building 9212. The Y–12 Final SWEIS does not include a thorough assessment of risks associated with ongoing operations at Y–12 in the ''No Action Alternative,'' and provides an inadequate evaluation in its accident scenarios.

Response. The Y–12 Final SWEIS considers potential impacts that could be caused by earthquakes and other natural phenomena such as wind, rain/snow, tornadoes and lightning (see Section D.9). Criticality is also considered. Table D.9.3–1 identifies the accidents that were considered for the major operations at Y–12. As shown in that table, the SWEIS considered potential impacts from earthquakes and other natural phenomena, including wind, flood, and lightning. The impacts associated with accidents analyzed in detail for the Y–12 Final SWEIS bound any impacts that would be associated with earthquakes and other natural phenomena. This is due to the fact that the accidents analyzed in detail in the SWEIS would be expected to result in greater radiological releases than reasonably foreseeable accidents caused by natural phenomena at Y–12.

With respect to potential accidents associated with existing/old facilities, as discussed in Section 5.14.1.1, the Y–12 Final SWEIS accident analysis process began with a review of all Y–12 facilities, including Building 9212, with emphasis on building hazard classification, radionuclide inventories, including type, quantity, and physical form, and storage and use conditions. For each of these facilities, the next step was to identify the most current documentation describing and quantifying the risks associated with its operation. Current safety documentation was obtained for all of these facilities. From these documents, potential accident scenarios and source terms (release rates and frequencies) associated with those facilities were identified. (See comment-response 12.M.1 on page 3–39 of Volume II of the Y–12 Final SWEIS).

[FR Doc. 2011–18312 Filed 7–19–11; 8:45 am]

BILLING CODE 6450–01–P

DEPARTMENT OF ENERGY

Western Area Power Administration

[DOE/EIS–0469]

Notice of Intent To Prepare an Environmental Impact Statement and to Conduct Scoping Meetings; Proposed Wilton IV Wind Energy Center Project, North Dakota

AGENCY: Western Area Power Administration, DOE.

ACTION: Notice.

SUMMARY: NextEra Energy Resources (NextEra) applied to interconnect its proposed 99-megawatt (MW) Wilton IV Wind Energy Center Project (Project) with Western Area Power Administration's (Western) existing Hilken Switching Station in Burleigh County, North Dakota. The proposed Project would consist of up to 62 1.6-MW wind turbine generators and associated infrastructure located across approximately 15,725 acres of land in Burleigh County, about 20 miles north of Bismarck. In addition to constructing and operating the above proposed Project, NextEra has requested to operate its nearby existing Wilton I (also known as Burleigh), Wilton II, and Baldwin Wind Energy Center projects at levels exceeding 50 average annual MW, when wind conditions warrant. Western will prepare an environmental impact statement (EIS) on NextEra's proposal to interconnect their Project and to operate its existing projects above 50 average annual MW in accordance with the National Environmental Protection Act (NEPA), U.S. Department of Energy (DOE) NEPA Implementing Procedures, and the Council on Environmental Quality (CEQ) regulations for implementing NEPA. Portions of NextEra's proposed Project may affect floodplains and wetlands, so this Notice of Intent (NOI) also serves as a notice of proposed floodplain or wetland action in accordance with DOE floodplain and wetland environmental review requirements.

DATES: A public scoping meeting will be held on July 26, 2011, from 5 to 8 p.m. in Wilton, North Dakota. Local notification of this meeting has been made through direct mailings to affected parties and by advertising in local media to ensure at least 15 days of prior notice. The public scoping period starts with the publication of this notice and ends on September 6, 2011. Western will consider all comments on the scope of the EIS received or postmarked by that date. The public is invited to submit comments on the proposed Project at any time during the EIS process.

ADDRESSES: Western will host a public scoping meeting at the Wilton Memorial Hall, 105 Dover Avenue, Wilton, North Dakota, to provide information on the Project and gather comments on the proposal. Oral or written comments may be provided at the public scoping meeting or mailed or e-mailed to Matt Marsh, Upper Great Plains Regional Office, Western Area Power Administration, P.O. Box 35800, Billings, MT 59107–5800, e-mail *MMarsh@wapa.gov,* telephone (800) 358–3415.

FOR FURTHER INFORMATION CONTACT: For additional information on the proposed Project, the EIS process, or to receive a copy of the Draft EIS when it is published, contact Matt Marsh at the

addresses above. For general information on the DOE's NEPA review process, contact Carol M. Borgstrom, Director of NEPA Policy and Compliance, GC–54, U.S. Department of Energy, 1000 Independence Avenue, SW., Washington, DC 20585–0119, telephone (202) 586–4600 or (800) 472–2756, facsimile (202) 586–7031.

SUPPLEMENTARY INFORMATION: Western is a Federal power marketing agency within the DOE that markets and delivers Federal wholesale electric power (principally hydroelectric power) to municipalities, rural electric cooperatives, public utilities, irrigation districts, Federal and State agencies, and Native American tribes in 15 western and central states. NextEra's proposed Project would be located within Western's Upper Great Plains Region, which operates in North and South Dakota, most of Montana, and portions of Iowa, Minnesota, and Nebraska. Western will prepare an EIS on NextEra's application to interconnect their proposed Wilton IV Wind Project and their proposal to operate its three existing projects above 50 average annual MW, when feasible, in accordance with NEPA (42 U.S.C. 4321–4347); DOE NEPA Implementing Procedures (10 CFR part 1021), and the CEQ regulations for implementing NEPA (40 CFR Parts 1500–1508).[1] Projects generating more than 50 average annual MW normally require the preparation of an EIS under DOE NEPA regulations.

Western will coordinate with appropriate Federal, State, and local agencies and potentially affected Native American tribes during the preparation of the EIS. While there are no designated cooperating agencies at this time, cooperating agencies could be identified at a later date.

Purpose and Need for Agency Action

Western's need for agency action is precipitated by NextEra's application to interconnect its proposed Wilton IV Wind Project with Western's power transmission system, and its intention of operating the three existing wind energy center projects at a level exceeding 50 average annual MW. Western needs to consider NextEra's interconnection request under Western's Open Access Transmission Service Tariff (Tariff), which provides for interconnection to its transmission system if there is available transmission capacity.

This EIS will address Western's Federal action of interconnecting NextEra's proposed Project with its Hilken Switching Station. As part of its normal interconnection analysis, Western determines if any changes within the substation or any system modifications are needed to accommodate the interconnection. In this case the physical interconnection is already in place and operating at Hilken, and preliminary studies indicate that the power system can accommodate the proposed interconnection without negatively affecting system reliability or power deliveries to existing customers. However, final system studies could still determine that network and/or transmission system upgrades are required. Any such upgrades would be funded by NextEra as a condition of the interconnection.

NextEra's proposal to operate the existing Wilton I, Wilton II, and Baldwin Wind Energy Center projects at levels exceeding 50 average annual MW creates the need for Western to revisit the interconnection agreements prepared for each of these projects. Projects generating over 50 average annual MW normally require the preparation of an EIS under DOE NEPA regulations, and the existing interconnection agreements call for curtailing generation, or completing an EIS prior to generating above that cap. None of the environmental assessments[2] originally prepared for these projects identified potential significant impacts resulting from the construction, operation, and maintenance of the three wind energy projects.

Proposed Action

In compliance with the provisions of the Tariff, and considering the environmental impacts of NextEra's proposed Project as identified by the EIS process, Western will consider NextEra's interconnection request. If approved, any necessary system changes would be made to accomplish the interconnection, and power generated by the proposed Project would use Western's transmission system to reach the market. Western will contact the U.S. Fish and Wildlife Service under section 7 of the Endangered Species Act and the North Dakota State Historic Preservation Office under section 106 of the National Historic Preservation Act. Section 7 and 106 consultations were completed in 2010 on some of the proposed wind turbine locations as part of the Baldwin project, and additional coordination with these agencies will build off of these previous consultations.

Alternatives

Western must respond to NextEra's proposed Project as it is described in their application for interconnection, and make a decision on the interconnection request based on that application. NextEra's interconnection request essentially results in an increase in the amount of power entering Western's transmission system through existing facilities; no physical modifications to Western's facilities or the transmission system are anticipated at this time. Under the no action alternative, Western would not approve the interconnection request, and NextEra would not be able to export the generation from its proposed Project over Western's transmission system.

The current interconnection agreements for the Wilton I, Wilton II, and Baldwin Wind Energy Center projects contain language that prevent these projects from exceeding 50 average annual MW. Western would remove this language under the proposed action. Under the no action alternative, the existing language would remain in force, and NextEra would be unable to operate any of these three projects above the 50 average annual MW cap.

Applicant's Proposed Project

NextEra proposes to construct 62 1.6-MW wind turbine generators in Crofte, Ecklund, Ghylin, Painted Woods, and Rocky Hill townships in Burleigh County, North Dakota, approximately 20 miles north of Bismarck. Each turbine would be up to 426 feet tall from tip of blade to base, and about 260 feet tall from the ground to the hub. The three-bladed rotors would have a diameter of approximately 328 feet, or 100 meters. The proposed Project would also include all-weather access roads to each turbine location, and underground power collection lines linking the turbines to Central Power Electric Cooperative's existing 4.4-mile 230-kilovolt (kV) generation tie-line that terminates at Western's Hilken Switching Station. The Western interconnection point for NextEra's proposed Project would be at the Hilken Switchyard. The Hilken Switching Station is located on Western's Garrison—Bismarck 230-kV transmission line.

NextEra's proposed Project would be an expansion of its three existing wind

[1] On October 4, 1999, DOE's Assistant Secretary for Environmental, Safety and Health delegated to Western's Administrator the authority to approve EISs for integrating transmission facilities with Western's transmission grid.

[2] Burleigh County Wind Energy Center, Burleigh County, North Dakota [Wilton I], DOE/EA–1542, 2006; EA Supplement to DOE/EA–1542 [Wilton II], 2009; Baldwin Wind Energy Center Project, Burleigh County, North Dakota, DOE/EA–1698, 2010.

energy projects in the area. Of the 62 proposed Wilton IV Wind Project wind turbines, 37 are located in a 10,000-acre area within Crofte Township, adjacent to and immediately to the west of NextEra's existing wind energy projects. These 37 wind turbine sites were considered as alternate locations for the Baldwin Project, and were analyzed for potential environmental impacts in the Baldwin environmental assessment. The wind turbines would be arrayed in several strings, generally oriented southwest to northeast, in an area roughly six miles square. Cultural resources and biological resources field surveys were accomplished for these wind turbine locations during the NEPA process for the Baldwin Project, which was completed in 2010. The remaining 25 wind turbines would be located in Ecklund, Ghylin, Painted Woods, and Rocky Hill townships within a 5,725-acre area. These turbine strings would be generally oriented east to west over approximately 4 miles immediately east of NextEra's existing wind energy projects. The potential environmental impacts of these 25 turbines will be analyzed as part of this EIS, and cultural and biological surveys will be conducted on these sites and any other potentially disturbed areas not already included in the Baldwin environmental assessment.

The proposed Project would generate about 99 nameplate MW on the two separate areas totaling approximately 15,725 acres. The proposed wind energy project would be located entirely on private lands; no Federal or State land would be affected.

In addition to constructing and operating the proposed Project as described above, NextEra has requested to operate its nearby existing Wilton I, Wilton II, and Baldwin Wind Energy Center projects at levels exceeding 50 average annual MW, when wind conditions warrant. Projects generating more than 50 average annual MW normally require the preparation of an EIS under DOE NEPA regulations (10 CFR Part 1021). These projects were originally analyzed in environmental assessments based in part on their anticipated output being under 50 average annual MW, and the interconnection agreements include a cap at that generation level unless an EIS is prepared. NextEra now believes that wind conditions may allow operation of the three wind projects above 50 average annual MW, and would like to generate above the cap, if possible. NextEra's proposal to potentially operate above the 50 average annual MW level creates the need for Western to revisit the existing interconnection agreements that include this limitation. No physical modifications to the existing wind generation projects are proposed; the requested interconnection agreement amendments would simply allow for more hours of generation if wind conditions are favorable but still within the stated nameplate capacity.

Western's Federal action is to consider the interconnection request, any resultant impact to the transmission system, and the change in operating parameters for the other three existing projects; however, the EIS will also identify and review the environmental impacts of constructing, operating, maintaining, and decommissioning NextEra's proposed Wilton IV Project. NextEra would be responsible for completing necessary coordination with State and local agencies to permit its proposed Project.

Floodplain or Wetland Involvement

Floodplains and wetlands are common in this part of North Dakota. Since the proposed Project may involve action in floodplains or wetlands, this NOI also serves as a notice of proposed floodplain or wetland action. The EIS will include an assessment of impacts to floodplains and wetlands, and floodplain statement of findings following DOE regulations for compliance with floodplain and wetlands environmental review (10 CFR Part 1022).

Environmental Issues

The location of NextEra's proposed Project is in a relatively sparsely populated portion of southcentral North Dakota. The area is characterized by extensive agriculture and pasture with scattered farmsteads on section line roads. NextEra has secured leases with willing landowners for its wind generation turbines and related facilities. Available overview information and the results of the NEPA analyses on the existing three wind projects indicates this area has a relatively low probability of substantial natural resources conflicts. NextEra's siting process for the wind turbine strings and associated facilities considered sensitive resources, and the proposed Project was designed to avoid these areas. The EIS will review the environmental information collected on the Project area, including that already collected as part of the Baldwin project, and evaluate the level of impact the interconnection and NextEra's proposed Project would have on environmental resources within the approximately 15,725-acre site. Modifications to NextEra's proposed Project may be made to avoid or minimize resource impacts. While no substantive resource conflicts have been identified thus far, the EIS will analyze the potential impacts on the full range of potentially affected environmental resources. Wind farm projects are generally known to have visual and noise effects, and may affect birds and bats.

Public Participation

Interested parties are invited to participate in the scoping process to help define the scope of the EIS, significant resources, and issues to be analyzed in depth, and to eliminate from detailed study issues that are not pertinent. The scoping process will involve all interested agencies (Federal, State, county, and local), Native American tribes, public interest groups, businesses, affected landowners, and individual members of the public.

Western has previously consulted with potentially affected or interested tribes to jointly evaluate and address the potential effects on cultural resources, traditional cultural properties, or other resources important to the tribes in the proposed Project area. Western will contact previously identified interested tribes and inform them that NextEra now intends to expand its wind energy projects in this area. Any nation-to-nation consultations will be conducted in accordance with Executive Order 13175, Consultation and Coordination with Indian Tribal Governments (65 FR 67249), the President's memorandum of April 29, 1994, Government-to-Government Relations with Native American Tribal Governments (59 FR 22951), DOE-specific guidance on tribal interactions, and applicable natural and cultural resources laws and regulations.

A public scoping meeting will be held as described under **DATES** and **ADDRESSES** above. The meeting will be informal, and attendees will be able to speak directly with Western and NextEra representatives about the proposed Project. The public is encouraged to provide information and comments on issues it believes Western should address in the EIS. Comments may be broad in nature or restricted to specific areas of concern. After gathering comments on the scope of the EIS, Western will address those issues raised in the EIS. Comments on Western's proposed action and NextEra's proposed Project will be accepted at any time during the EIS process, and may be directed to Western as described under **ADDRESSES** above.

Western's EIS process will include this NOI and public scoping meetings; consultation and coordination with appropriate Federal, State, county, and

local agencies and tribal governments; involvement with affected landowners; distribution of and public review and comment on the Draft EIS; a formal public hearing or hearings on the Draft EIS; distribution of a published Final EIS; and publication of Western's Record of Decision in the **Federal Register.**

Dated: July 7, 2011.

Timothy J. Meeks,

Administrator.

[FR Doc. 2011–17997 Filed 7–19–11; 8:45 am]

BILLING CODE 6450–01–P

ENVIRONMENTAL PROTECTION AGENCY

[EPA–HQ–OPPT–2011–0566; FRL–8881–3]

Certain New Chemicals; Receipt and Status Information

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: Section 5 of the Toxic Substances Control Act (TSCA) requires any person who intends to manufacture (defined by statute to include import) a new chemical (i.e., a chemical not on the TSCA Chemical Substances Inventory (TSCA Inventory)) to notify EPA and comply with the statutory provisions pertaining to the manufacture of new chemicals. Under TSCA sections 5(d)(2) and 5(d)(3), EPA is required to publish in the **Federal Register** a notice of receipt of a premanufacture notice (PMN) or an application for a test marketing exemption (TME), and to publish in the **Federal Register** periodic status reports on the new chemicals under review and the receipt of notices of commencement (NOC) to manufacture those chemicals. This document, which covers the period from May 23, 2011 to June 5, 2011, and provides the required notice and status report, consists of the PMNs and TMEs, both pending or expired, and the NOC to manufacture a new chemical that the Agency has received under TSCA section 5 during this time period.

DATES: Comments identified by the specific PMN number or TME number, must be received on or before August 19, 2011.

ADDRESSES: Submit your comments, identified by docket identification (ID) number EPA–HQ–OPPT–2011–0566, and the specific PMN number or TME number for the chemical related to your comment, by one of the following methods:

- *Federal eRulemaking Portal: http://www.regulations.gov.* Follow the on-line instructions for submitting comments.
- *Mail:* Document Control Office (7407M), Office of Pollution Prevention and Toxics (OPPT), Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460–0001.
- *Hand Delivery:* OPPT Document Control Office (DCO), EPA East Bldg., Rm. 6428, 1201 Constitution Ave., NW., Washington, DC. The DCO is open from 8 a.m. to 4 p.m., Monday through Friday, excluding legal holidays. The telephone number for the DCO is (202) 564–8930. Such deliveries are only accepted during the DCO's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions: EPA's policy is that all comments received will be included in the docket without change and may be made available on-line at *http://www.regulations.gov,* including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through regulations.gov or e-mail. The regulations.gov Web site is an ''anonymous access'' system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through regulations.gov, your e-mail address will be automatically captured and included as part of the comment that is placed in the docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD–ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses.

Docket: All documents in the docket are listed in the docket index available at *http://www.regulations.gov.* Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available electronically at *http://www.regulations.gov,* or, if only available in hard copy, at the OPPT Docket. The OPPT Docket is located in the EPA Docket Center (EPA/DC) at Rm. 3334, EPA West Bldg., 1301 Constitution Ave., NW., Washington, DC. The EPA/DC Public Reading Room hours of operation are 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number of the EPA/DC Public Reading Room is (202) 566–1744, and the telephone number for the OPPT Docket is (202) 566–0280. Docket visitors are required to show photographic identification, pass through a metal detector, and sign the EPA visitor log. All visitor bags are processed through an X-ray machine and subject to search. Visitors will be provided an EPA/DC badge that must be visible at all times in the building and returned upon departure.

FOR FURTHER INFORMATION CONTACT: *For technical information contact:* Bernice Mudd, Information Management Division (7407M), Office of Pollution Prevention and Toxics, Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460–0001; telephone number: (202) 564–8951; fax number: (202) 564–8955; e-mail address: *mudd.bernice@epa.gov.*

For general information contact: The TSCA–Hotline, ABVI–Goodwill, 422 South Clinton Ave., Rochester, NY 14620; telephone number: (202) 554–1404; e-mail address: *TSCA-Hotline@epa.gov.*

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this Action Apply to Me?

This action is directed to the public in general. As such, the Agency has not attempted to describe the specific entities that this action may apply to. Although others may be affected, this action applies directly to the submitter of the PMNs addressed in this action. If you have any questions regarding the applicability of this action to a particular entity, consult the person listed under **FOR FURTHER INFORMATION CONTACT**.

B. What Should I Consider as I Prepare My Comments for EPA?

1. *Submitting CBI.* Do not submit this information to EPA through regulations.gov or e-mail. Clearly mark the part or all of the information that you claim to be CBI. For CBI information in a disk or CD–ROM that you mail to EPA, mark the outside of the disk or CD–ROM as CBI and then identify electronically within the disk or CD–ROM the specific information that is claimed as CBI. In addition to one

Kit 'n' Carlyle

ACROSS
1 Jetty
5 Monsieur's wine
8 "Ben-Hur" studio
11 Coat rack
12 Boulevard liners
14 Job-ad letters
15 Lee of cakedom
16 Get dizzy
17 Large vat
18 Parliament members
20 "Kubla Khan"
43 Potpie veggie
44 Greeted warmly
46 Scratchy
49 Ms. Longoria
50 Cut, as logs
52 Hull bottom
54 Journey stage
55 Horse's gait
56 Thus
57 – -game show
58 Afternoon social
59 Hounds

Answer to Previous Puzzle

G	A	S		F	A	S	T		J	U	N	K
A	L	E		E	L	S	E		E	L	I	E
D	O	C	T	R	I	N	E		A	N	N	A
S	U	T	U	R	E		M	I	L	A	N	
			B	A	N	S		N	O	S	Y	
R	I	P	E	R		K	U	D	U			
O	R	E		I	S	A	K		S	A	N	D
T	A	C	O		R	T	E	S		L	T	D
			B	R	I	E		L	A	T	H	S
W	I	L	Y		D	R	O	P				
A	D	I	E	U		O	P	P	O	S	E	
S	T	A	G		H	E	S	I	T	A	N	T
A	C	H	E		O	D	I	N		K	I	T
M	H	O	S		H	O	N	G		S	P	A

NASA (hyph.) 39 Jell

402 Agriculture/ Farm Equipment

Rowse Hay Rake 24' w/hitch, hydraulic 222-1902 Evenings

WC ALLIS Chalmers, new paint & tires, runs great! $2350. Call 701-400-7701

WD 45 Allis Chalmers, good running tractor, 3 pt hitch. $2950.00. Call 701-400-7701

406 Horses/ Supplies

FLYING D ARENA HORSE BOARDING
16 YRS EXPERIENCE!!
Heated indoor facility w/outdoor pens & plenty of trails to ride! Riding Lessons, trainer, roping weekly & professionally staffed. 701-221-2433

408 Seed/Feed/Hay

HAY WANTED: Large Square bales Alfalfa Hay. Large Quantities, $$ up front, top dollar, will pickup on your farm. 308-991- 3432

452 Free Stuff

3 TYPEWRITERS from early 60's. One manual, two electric. 701-221-0502.

GIVE-A-WAY: GOOD condition RETRO 70's couch, end tables, 8 track stereo console. 701-516-3768

KITCHEN SINK cut outs and scrap plywood. Call 527-6903.

OLD UPRIGHT Bush & Gertz piano beautiful sound. Call 701-426-1233

458 Antiques/ Collectibles

1978 CORVETTE Go Cart, Official Race Car, one Five

468 Cameras/ TVs/VCRs

NEW RCA Analog to Digital TV Converter; Universal Remote, watch HD broad- cast channels on old TV's. First $50 Cash... 255-1351

470 Electronics

Sony cassette-CD- radio $35.00 cash only Call 223-6531 Please do not call after 5pm Fri. or on Saturdays.

VCR, $30.00 cash only Call 223-6531 Please do not call after 5pm Fri. or on Saturdays.

474 Household Items/Furniture

BED: QUEEN size mattress & box brand new, still in plastic, never used $175. Also brand new King PT set $395. Call 221-3011 or 400-9157.

478 Pets/Supplies

4 year old male neutered cat for giveaway! Oreo needs a home. I'm allergic and can't have him anymore. Loves to sit and talk. More of an adult person type cat, but loves kids too. Please call 223-1531, leave message if not home.

CAVALIER PUPPIES, Reg. $500. Ready. 701-212-2030 www.ridgeviewkennels.com

For Giveaway: Male, neutered, tricolored 6yr.old Cavilier spaniel, great with kids and adults. Call 202-5175

Give-a-way: 2 F Beagles, **found 2 wks ago.** Need a good home, must go together. 701-597- 3243, lv msg.

Give-a-way: Cross female dog, to a good home. "Jenny" Spayed 2 yrs old, approx. 60lb., Includes doghouse. Call after 5pm 391-3110, or 202-4497

LOST! MALE Shish Tzu on 7-4-11 in NE Bismarck off Saregprice over pickup. Asking $68. Call 226-1114.

490 Sporting Goods

2 ladies golf bags-both with club dividers and putter holder. Very good condition. 223-1943 $50 for both.

EZ-GO GOLF Car Dealer. Full service, parts & Trojan batteries, new/used, electric, gas & utility vehicles in stock. JR Repair, Inc. Garrison, ND 701-463-2054 or 337-6000

Used Golf Cars! Yamaha, EZ Go & Club Car. Gas or Electric. Financing Available We take trades! See our inventory and pics at webergolfcars.com Jim Weber Ford 701-452-4288 Cell 701-226-6360 Wishek, ND.

492 Guns

AIR PUMP rifle- Dart Gun Model 178B. Great for distributing medicine to cattle, $250 OBO. Call 220-5933

494 Tools/ Machinery

We are a debt relief agency.

518 Announcements

CHAP. 7/13 BANKRUPTCY COLES LAW FIRM
Over 30 yrs exp. We are a Debt Relief Agency. We help people file for Bankruptcy Relief under the Bankruptcy Code. Flat fee in most cases. **Call 701-222-8131 coleslaw@btinet.net**

Criminal Defense Injuries/Accidents
*Free Initial Consultation In All Cases
Bolinske Law Firm
Robert. V. Bolinske, Jr.
Learn more at: bolinskelawfirm.com
255-3410
Thousand of cases successfully resolved

Criminal Defense Injuries/Accidents
*Free Initial Consultation In All Cases
Bolinske Law Firm
Robert. V. Bolinske, Jr.
Learn more at: bolinskelawfirm.com
255-3410
Thousand of cases successfully resolved

520 Lost

Call 701-280-0759

552 Money to Lend

A simple reminder: Just as it is important to use caution when replying to suspicious offers in email or on the phone, you should also use caution when replying to classified advertisements that require advance payment. The North Dakota Attorney Generals' Consumer Protection Division is available to offer assistance and answer questions if you think an offer or company is questionable. If you have any questions, you can reach them at 701-328-3404 or 1-800-472-2600.

Rentals

602-646

608 Central Bismarck Apartments F/R

HUD SUBSIDIZED 1 bdrm. apts avail for senior citizens with low & moderate income. Call Patterson Place Apts 701-255-6067.

610 NE Bismarck Apartments F/R

2 BDRM, private entry, off-st prkg. Call 223-8568

NICE USED MOBILE HOMES FOR RENT. Call 663-9219 or 391-0633

642 Office/Business Space F/R

Professional Building
5th & Rosser
ph. 258-4000

EQUAL HOUSING OPPORTUNITY

In accordance with the federal Fair Housing Act, we do not accept for publication any real estate listing that indicates any preference, limitation, or discrimination based on race, color, religion, sex, disability, family status, or national origin. If you believe a published listing states such a preference, limitation, or discrimination, please notify this publication at fairhousing@fee.net.

EQUAL HOUSING OPPORTUNITY

In accordance with the federal Fair Housing Act, we do not accept for publication any real estate listing that indicates any preference, limitation, or discrimination based on race, color, religion, sex, disability, family status, or national origin. If you believe a published listing states such a preference, limitation, or discrimination, please notify this publication at fairhousing@fee.net.

3	4		9	6	8			
	9			7			6	
			5	4	1		9	2
	6			3	5	8		9
7						5	3	4
	3					6		

Wednesday
More Intermediate Puzzle

Thursday
Challenging Puzzle

Friday
Tough Puzzle

Saturday
Super Tough Puzzle

Sunday
More Easy Puzzle

Solution to last Sudoku puzzle

5	8	1	4	6	3	7	9	2
7	9	2	5	8	1	4	6	3
4	6	3	7	9	2	5	8	1
1	5	8	3	2	4	6	7	9
6	4	7	1	5	9	3	2	8
3	2	9	8	7	6	1	5	4
9	1	5	6	3	8	2	4	7
8	7	4	2	1	5	9	3	6
2	3	6	9	4	7	8	1	5

Solution, tips and computer program at www.krazydad.com/sudoku/
© Puzzles by Krazydad.com

The Bismarck Tribune
www.bismarcktribune.com

We need your input!

We need your comments to help us define the scope and alternatives for an environmental impact statement on a proposal by NextEra Energy Resources to expand its wind energy facilities in Burleigh County, southeast of Wilton, and northeast of Baldwin, North Dakota. The proposed Wilton IV Wind Energy Center will include up to 62 wind turbine generators, an underground power collection system, and access roads. Construction of the Wilton IV Wind Energy Center is proposed to begin in Summer 2012.

Western Area Power Administration will host a public scoping meeting to help define the scope of the Wilton IV Wind Energy Center Environmental Impact Statement. The meeting location is handicapped accessible.

Please join us to learn more about this project and to share your ideas:
5 to 8 pm, Tuesday, July 26, 2011
Wilton Memorial Hall
105 Dover Avenue, Wilton, ND 58579

Need more info?

For more information or to be added to the project mailing list, contact:

Matt Marsh, Environmental Protection Specialist
Western Area Power Administration
PO Box 35800, Billings, MT 59107-5800
Phone: 1-800-358-3415, Fax: (406) 255-2900
Email: mmarsh@wapa.gov

Wilton IV Wind Energy Center Scoping Meeting Radio Ad

Western Area Power Administration will host a public scoping meeting to help define the scope of an Environmental Impact Statement for the Wilton IV Wind Energy Center.

The proposed project is an expansion of an existing facility in Burleigh County and will include 62 wind turbine generators, an underground power collection system, and access roads. Construction of the project is proposed to begin in Summer 2012.

The meeting will be held on Tuesday, July 26th from 5 to 8 PM at the Wilton Memorial Hall.

Appendix 3 – Sign in Sheet and Handouts

Wilton IV Wind Energy Center Open House

July 26, 2011, 5-8 PM Wilton Memorial Hall

Please Print Clearly

SIGN IN SHEET

NAME	ADDRESS	POSTAL CODE	PHONE #	ADD TO MAILING LIST	
Toby Sheldon	Confidential Information			YES	NO
Gerald & Arlis Walth				YES	NO
MARC LAURIE				YES	NO
Roy Weld				YES	NO
				YES	NO
				YES	NO
				YES	NO
				YES	NO
				YES	NO

Wilton IV Wind Energy Center Open House

July 26, 2011, 5-8 PM Wilton Memorial Hall

Please Print Clearly

SIGN IN SHEET

NAME	ADDRESS	POSTAL CODE	PHONE #	ADD TO MAILING LIST	
Ed Wint Donna Whatham	Confidential Information			YES	NO
Watson Johnson Ruth Johnson				YES	NO
				YES	NO
Wilhelm O. Meyer				YES	NO
Clare Fricke Howard Fricke				YES	NO
Kerry & Debbie Pearson				YES	NO
David Coleman				YES	NO
Terry Vesey				YES	NO
Gene and Vivian Hilker				YES	NO

Wilton IV Wind Energy Center Open House

July 26, 2011, 5-8 PM Wilton Memorial Hall

Please Print Clearly

SIGN IN SHEET

NAME	ADDRESS	POSTAL CODE	PHONE #	ADD TO MAILING LIST	
Tom Aichele				YES	NO
Kolleen Kopringer				YES	NO
[illegible]				YES	NO
[illegible]				YES	NO
[illegible]				YES	NO
Doug Schoen T				YES	NO
Larry Falkenstein				YES	NO
[illegible]				YES	NO
David Spitzer				YES	NO

Confidential Information

Wilton IV Wind Energy Center Open House

July 26, 2011, 5-8 PM Wilton Memorial Hall

Please Print Clearly

SIGN IN SHEET

NAME	ADDRESS	POSTAL CODE	PHONE #	ADD TO MAILING LIST	
Steve Bauer Kelly Bauer	Confidential Information			YES	NO
Betty Tallentire				YES	NO
Sharon + Wayne Narum				YES	NO
Dean Goetz				YES	NO
Earl Aune				YES	NO
Rod Backman				YES	NO
MAX Sorch				YES	NO
Bob Sorch				YES	NO
KYLE HERB				YES	NO

Wilton Wind IV Energy Center

Overview

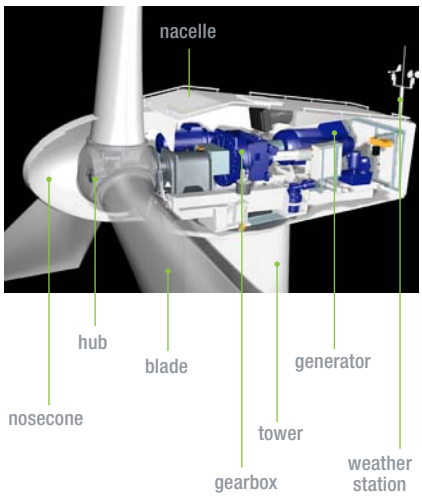
» Located in Burleigh County, North Dakota
» Built, owned, and operated by a subsidiary of NextEra™ Energy Resources
» up to 99-megawatt wind generation plant
» up to 62 1.6-megawatt GE turbines that will be capable of generating enough electricity to power more than 24,000 homes
» Each turbine will be approximately 262 feet tall from the ground to the hub in the center of the blades
» Commercial operation began in 2012

Benefits

» Expected to employ a staff of 5
» Adds tax base to Burleigh County in property taxes
» Provides economic stimulus of landowner lease payments
» Creates no air or water pollution
» Uses no water in the generation of electricity
» Allows land to remain in agricultural use

About NextEra Energy Resources

» A leading clean energy provider operating wind, natural gas, solar, hydroelectric and nuclear power plants across the nation
» Over 18,000 megawatts of generating capacity in 26 states and 3 provinces in Canada
» The largest wind generator in North America with facilities in 17 states
» A subsidiary of NextEra Energy, Inc. with headquarters in Juno Beach, Florida



How It Works

Wind turbines work on the same principle as a child's pinwheel. When you blow on a pinwheel, the blades of the pinwheel spin around—same with a wind turbine.

When the wind blows against the blades of the wind turbine, the blades slowly rotate. The blades are connected to a drive shaft inside the large box (called a nacelle) seen on the top of the tower. The drive shaft turns the generator, which makes the electricity. Each wind turbine operates independently of the others. Each is, essentially, an individual power plant.

The turbine has a weather station on the top that tells it the wind speed and wind direction. That information is sent to the turbine's computer, which moves the top of the turbine (the nacelle and blades) so that the blades are always facing into the wind. The nacelle can turn 360 degrees.

The electricity is carried in cables from the generator down the inside of the tower, then underground to the site's substation. That power then goes into the offsite transmission lines and is used by the local utility to serve its customers in the region.

Wilton IV Wind Energy Center Open House

July 26, 2011, 5-8 PM Wilton Memorial Hall

COMMENT SHEET

After reviewing all of the exhibits and speaking with project representatives, please share your comments with us regarding the Wilton IV Wind Energy Center Environmental Impact Statement.

Comments:

To receive more information regarding the Environmental Impact Statement for the Wilton IV Wind Energy Center, please provide us your contact information.

Name: _____

Address: _____

City, State, Zip: _____

Phone Number: _____

Email: _____

Representing (organization, company, etc.) _____

After completing the comment form, please submit it in the comment box, or mail/fax to:
Matt Marsh, Environmental Protection Specialist, Western Area Power Administration
PO Box 35800, Billings, MT 59107-5800, Fax: (406) 255-2900. You may also submit your comments via phone at (800) 358-3415 or via email to mmarsh@wapa.gov. **Your comments are important to us and will be accepted through August 20, 2011.**

Thank you for your participation.

Wilton IV Wind Open House
July 26, 2011, 5-8 PM Wilton Memorial Hall
Public Comment Meeting
Environmental Impact Statement (EIS)

Thank you for your interest in the proposed Wilton IV Wind EIS. Please complete the appropriate sections of this form to be included on the EIS mailing list and/or to provide comments. Written comments can be submitted at the Scoping Meeting, faxed to (406) 255-2900, mailed to Mr. Matt Marsh, Western Area Power Administration, Upper Great Plains Customer Service Office, P.O. Box 35800, Billings, MT 59107-5800 or sent to **mmarsh@wapa.gov.** To be included in our public comment process, please ensure your comments are postmarked or turned in by **August 20, 2011.**

☐ I would like a paper copy of the Draft EIS when it becomes available.
☐ I would like a Compact Disk (CD) of the EIS when it becomes available.
☐ Just email me the web link to the EIS when it becomes available. (Quickest and Preferred method)

Please Print Contact Info Below

Name:	Organization:
E-mail address:	Daytime Phone No. (*optional):*
Street Address:	City / State / Zip Code:

Please indicate any questions, comments or concerns you have about the proposed project in the comment section below (continue on separate sheet if necessary).

_____

_____

_____

_____

_____

_____

_____

_____

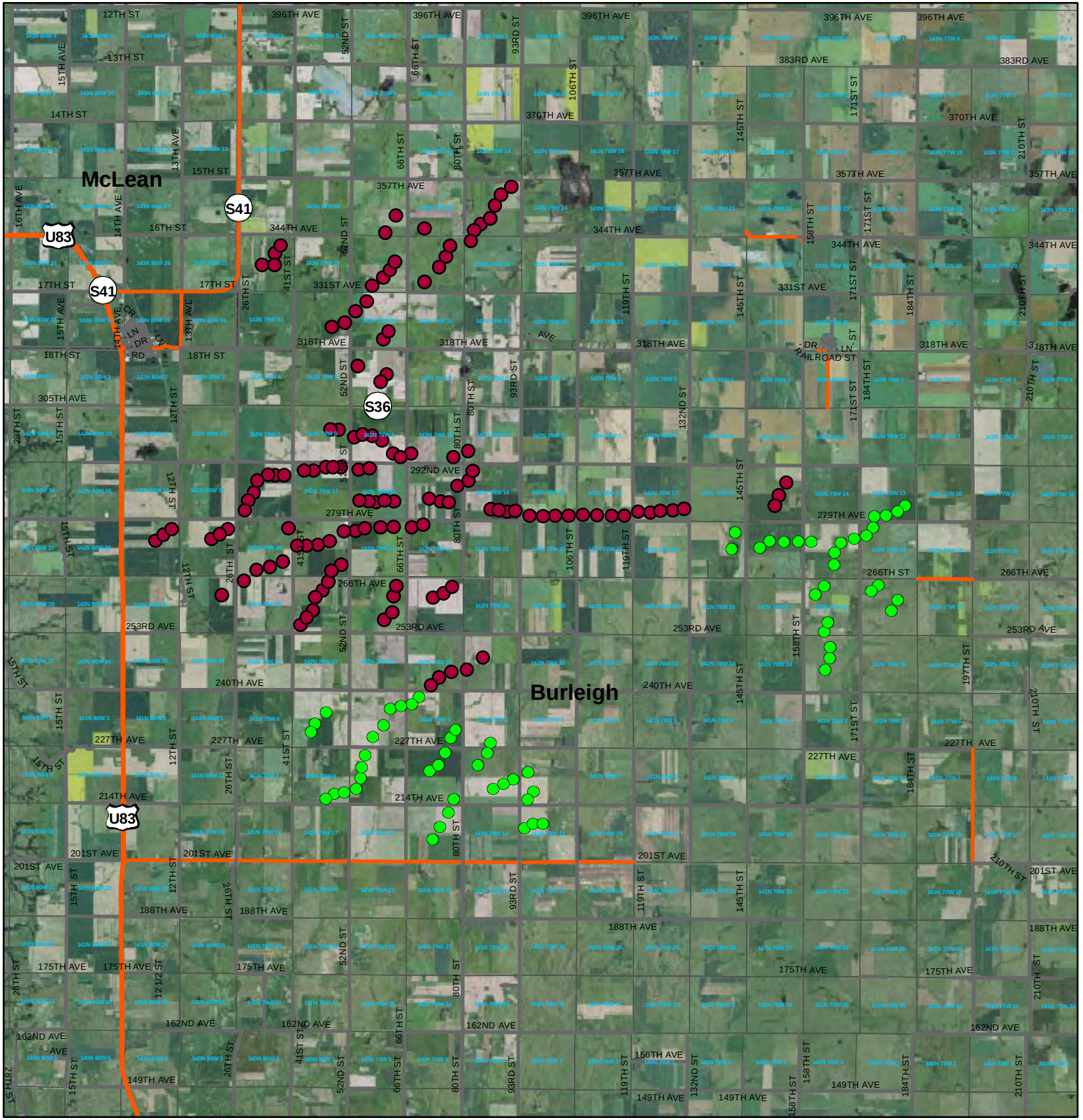
Thank you for your time and interest.

Please fold in thirds and tape

Place postage here

Mr. Matt Marsh
Western Area Power Administration
Upper Great Plains Region
P.O. Box 35800
Billings, MT 59107-5800

Appendix 4 – Project Map



Wilton IV Turbine Layout

Burleigh County, ND

JULY 2011

Legend

- Wilton IV Wind Turbine
- Existing Wind Turbine
- Local Road
- Major Road
- PLSS Section Boundary
- County Boundary
- State Boundary

Sources: ND DOT Roads, NAIP 1m Imagery

N

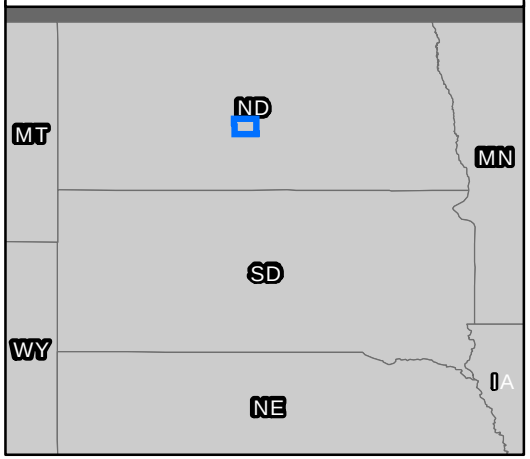
0 3

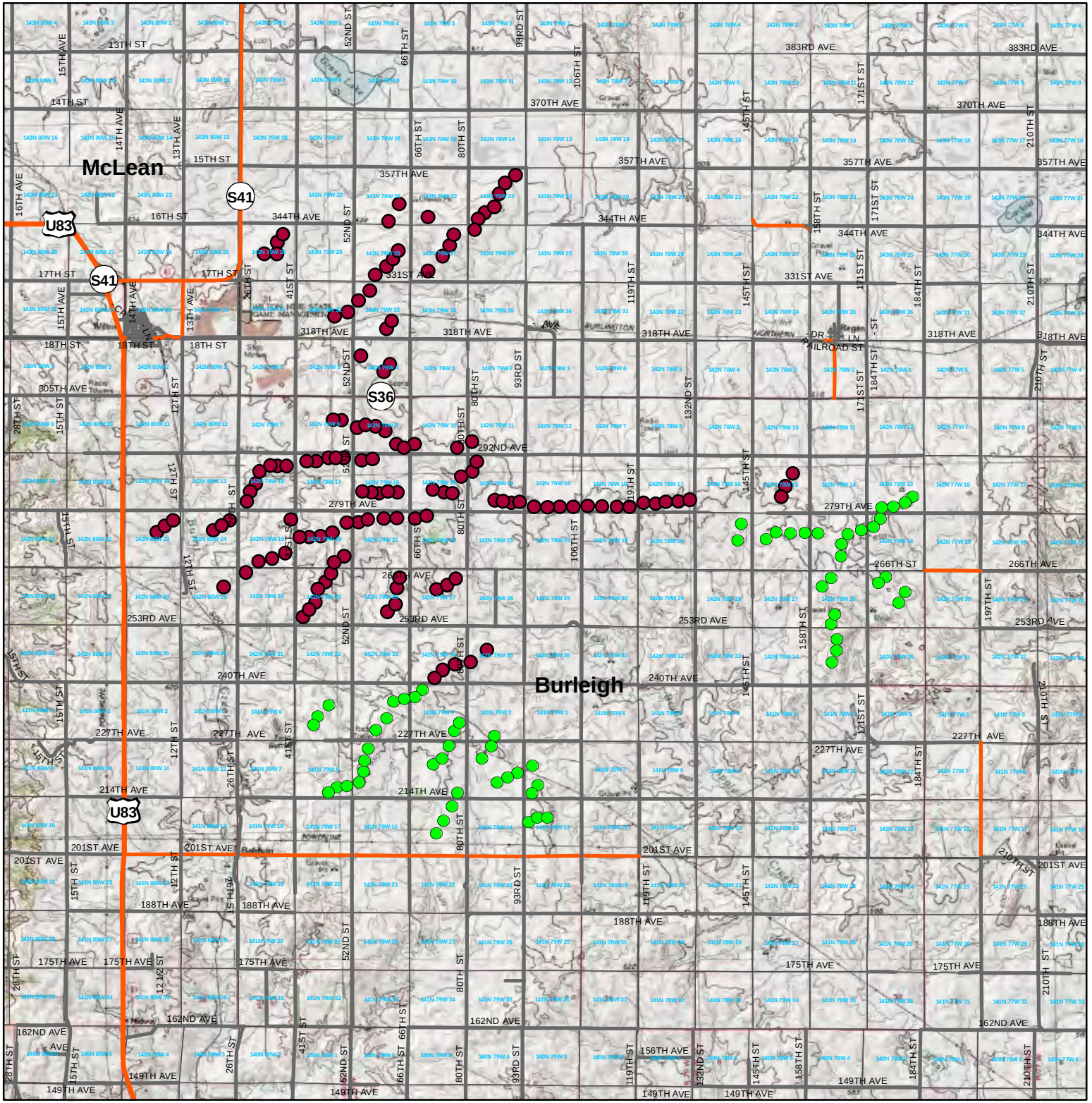
Miles

File: P:\FPL Energy\Dakotas\Contract XXXX - Wilton IV\GIS\Spatial\MXD\WiltonIV_ProjectBoundary_Turbines_Aerial_20110720.mxd

Coordinate System: NAD 1983 StatePlane North Dakota South FIPS 3302 Feet

LOCATION MAP





Wilton IV Turbine Layout

Burleigh County, ND

JULY 2011

Western Area Power Administration

NEXTera Energy Resources

Legend

- Wilton IV Wind Turbine
- Existing Wind Turbine
- Local Road
- Major Road
- PLSS Section Boundary
- County Boundary
- State Boundary

Sources: ND DOT Roads, ESRI Topo

N

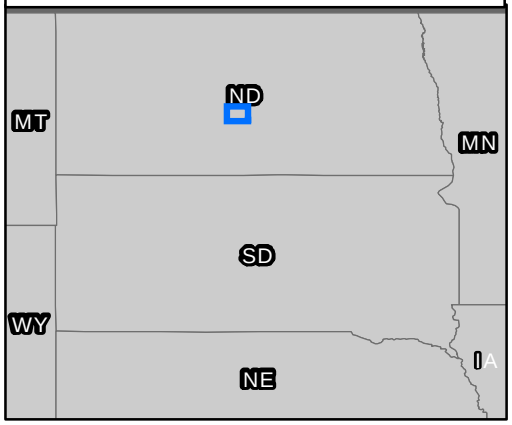
0 3

Miles

File: P:\FPL Energy\Dakotas\Contract XXXX - Wilton IV\GIS\Spatial\MXD\WiltonIV_ProjectBoundary_Turbines_Topo_v2_20110720.mxd

Coordinate System: NAD 1983 StatePlane North Dakota South FIPS 3302 Feet

LOCATION MAP



Appendix 5 – Photos

Wilton IV Scoping Meeting Photos
July 26, 2011

Photo 1 Poster Boards on Display

Photo 2 Attendees Reviewing Handouts

Wilton IV Scoping Meeting Photos
July 26, 2011

Photo 3 Project Area Maps on Display

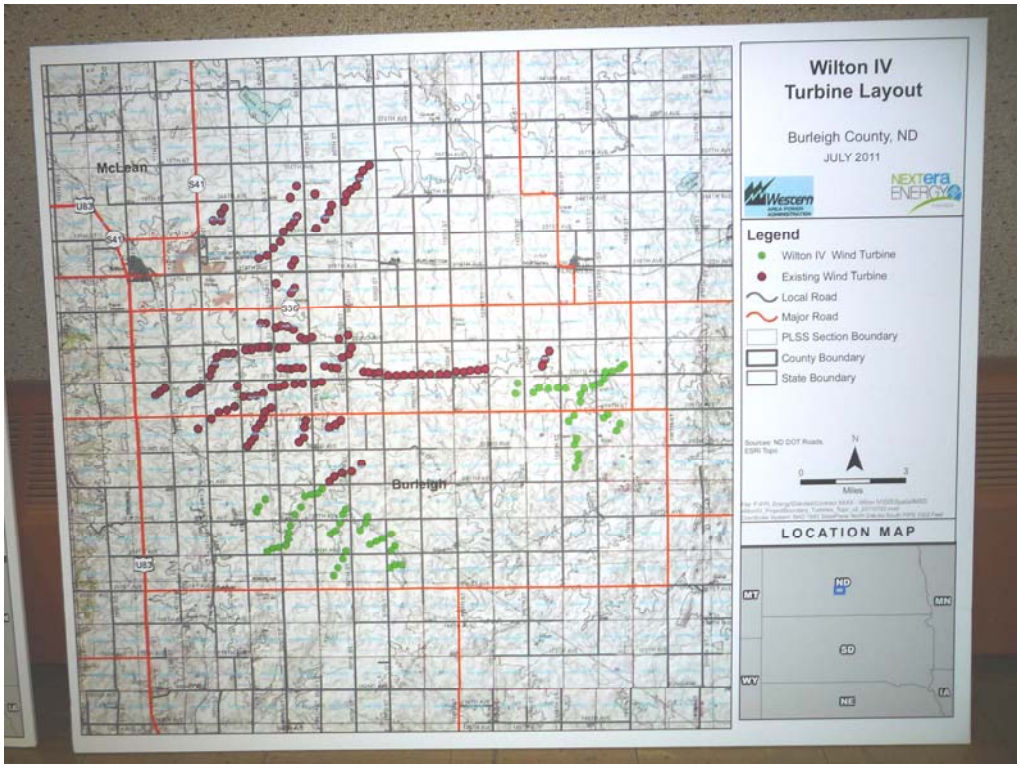


Photo 4 Project Area Map on Display

Wilton IV Scoping Meeting Photos
July 26, 2011

Photo 5 Project Proponents Answering Questions

Photo 6 Attendees Reviewing Project Map

Wilton IV Scoping Meeting Photos
July 26, 2011

Photo 7 Attendees Reviewing Information Posters

Photo 8 Attendees Filling Out Comment Sheets

Appendix 6 – Public Scoping Comments

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

July 20, 2011

North Dakota Regulatory Office

Department of Energy
Western Area Power Administration
Attn: Mr. Matt Marsh, Environmental Protection Specialist
PO Box 35800
Billings, Montana 58402-2035

Dear Mr. Marsh:

This is in response to a letter received July 22, 2011 requesting Department of the Army, U.S. Army Corps of Engineers (Corps) comments regarding the scoping period for the Wilton IV Wind Energy Center Environmental Impact Statement. The proposed project is a 99-megawatt wind energy facility in Burleigh County, 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

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 Latitude: °N Longitude: °W	City - State- Zip-

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.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
3425 Miriam Avenue
Bismarck, North Dakota 58501

AUG 25 2011

Mr. Matt Marsh
Western Area Power Administration
Upper Great Plains Customer Service Region
P.O. Box 35800
Billings, Montana 59107-5800

Dear Mr. Marsh:

This is in response to your July 20, 2011, request for environmental information in relation to public scoping for the preparation of an Environmental Impact Statement (EIS) for the proposed Wilton IV Wind Energy Center. The proposed project, a 99 megawatt (MW) wind energy facility located in Burleigh County, North Dakota, would interconnect with Western Area Power Administration's (Western) transmission line. Therefore, Western is the lead Federal agency for the proposed action. The proposed project would consist of 62 wind turbine generators, an underground power collection system, a connector road system, and an operations and maintenance facility. The wind turbine towers would be approximately 426 feet tall, from the tip of the blade to the base of the tower. The wind turbine rotors would be 328 feet in diameter. Electrical power from the proposed facility would interconnect into Western's existing Hilken Switching Station near Wilton, North Dakota. Construction of the Wilton IV Wind Energy Center is proposed to begin in the summer of 2012.

We offer the following comments under the authority of and in accordance with the Migratory Bird Treaty Act (16 U.S.C. 703 et seq.), Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668-668d, 54 Stat. 250), Executive Order 11990 "Protection of Wetlands", Executive Order 13186 "Responsibilities of Federal Agencies to Protect Migratory Birds", the Endangered Species Act (ESA) (16 U.S.C. 1531 et seq.), the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57), and the National Environmental Policy Act (NEPA) (Pub. L. 91-190, 42 U.S.C. 4321-4347, January 1, 1970, as amended).

General Comments

The U.S. Fish and Wildlife Service (Service) holds certain resources in trust and manages them for the benefit of the American people. These resources include migratory birds, interjurisdictional fish, federally listed threatened and endangered species of plants and animals and their habitats, and units of the National Wildlife Refuge system. One goal of Service policy is that conservation of fish and wildlife resources receive equal consideration with other features of resource development, and that conservation actions are coordinated with those other forms of

development. Another goal is to conserve, protect, and enhance fish and wildlife and their habitats to facilitate the balanced development of the Nation's natural resources.

Adequate consideration for avian and other wildlife resources early in the site evaluation process can help to minimize impacts and facilitate project review. Informed site selection is possibly the most important step in avoiding and minimizing impacts to wildlife. Although current wind turbine technology and proper siting can help to minimize the incidence of avian and bat deaths due to blade, aerial line, and turbine strikes, the potential for direct mortality of some migratory birds and bats will remain. Wind power developers, in concert with the Service, can help to ensure that projects proceed with as little impact to migratory birds as possible. This can be accomplished by gathering information on avian resources as they relate to project siting and by implementing measures to minimize impacts to migratory birds from the construction and operation of the wind facility. The Service's Interim Wind Turbine Siting Guidelines are enclosed to assist in project planning (enclosure 1). We encourage the project proponents to conduct a Potential Impact Index (PII) analysis on several potential sites within wind resource areas to assist in the selection of a wind power site that minimizes the potential to impact migratory birds. Please inform this office whether or not you plan to use the Service's 2003 Guidelines in selecting your site and if not, whether you intend to use a different method to assess potential impacts to avian and other wildlife resources, and if so, what that method consists of.

Migratory Birds

The MBTA prohibits the taking, killing, possession, and transportation, (among other actions) of migratory birds, their eggs, parts, and nests, except when specifically permitted. While the Act has no provision for allowing unintentional take, the Service realizes that some birds may be killed during wind project construction and operation even if all known reasonable and effective measures to protect birds are used. The Service's Office of Law Enforcement (OLE) carries out its mission to protect migratory birds through investigations and enforcement, as well as by fostering relationships with individuals, companies, and agencies that have taken effective steps to avoid take of migratory birds and by encouraging others to implement measures to avoid take of migratory birds. It is not possible to absolve individuals, companies, or agencies from liability even if they implement bird mortality avoidance or other similar protective measures. However, OLE focuses its resources on investigating and prosecuting individuals, companies, and agencies that take migratory birds without identifying and implementing all reasonable, prudent and effective measures to avoid that take. Companies are encouraged to work closely with Service biologists to identify available protective measures when developing project plans and/or avian protection plans, and to implement those measures prior to/during project construction and operation.

The Service has coordinated with the Avian Power Line Interaction Committee (APLIC) to develop guidelines to assist companies in formulating Avian Protection Plans (APP). The guidelines can be accessed from APLIC's website at http://www.aplic.org/. These plans are utility specific and designed to reduce operational risks that result from avian interactions with electric utility facilities, but we suggest they may be adapted to wind energy facilities. Wind

energy projects have the potential to negatively affect bats as well as avian species. Therefore, we encourage project developers to formulate an Avian and Bat Protection Plan (ABPP) if bats migrate through or may be present in the project area.

Some of the things that the Service looks for in an APP or ABPP are typically: a statement of company policy confirming the company's commitment to work cooperatively towards the protection of migratory birds and bats; identification of the process under which the company will obtain and comply with all necessary permits, including, but not limited to, nest relocation, temporary possession, depredation, salvage/disposal, and scientific collection; discussion of the company's plan for monitoring and reporting all incidents of avian or bat injury or mortality; a commitment to make all reasonable efforts to construct and modify infrastructure to reduce the incidence of avian and bat mortality; a mechanism to review existing practices, ensuring quality control and allowing for adaptive management; and a plan for providing adequate training for all appropriate utility personnel. An APP or ABPP reporting system is important to help the company pinpoint areas of concern by tracking both the specific locations where mortalities may be occurring, as well as the extent of such mortalities and the remedial actions taken/planned to address identified problem areas. Following the 2003 voluntary Guidelines and involving the Service prior to selecting a project site are key components to obtaining prosecutorial discretion in the event of bird injuries and mortalities due to project construction and operation.

To minimize the electrocution hazard to birds, the Service, with support from the Rural Utilities Service, recommends that new or updated overhead power lines be constructed in accordance with the current guidelines for preventing raptor electrocutions. The recommended guidelines can be found in "2006 Suggested Practices for Avian Protection on Power Lines". To increase power line visibility and reduce bird fatalities resulting from collisions with power lines, the Service recommends all new power lines that cross or run adjacent to rivers or large wetlands be modified according to "Mitigating Bird Collisions with Power Lines: The State of the Art in 1994". Both publications can be obtained by writing or calling the Edison Electric Institute, P.O. Box 266, Waldorf, Maryland 20604-0266, (1-800-334-5453) or visiting their website at www.eei.org.

To the extent practicable, construction should be scheduled for late summer or fall/early winter so as not to disrupt waterfowl or other wildlife during the breeding season (February 1 to July 15). If work is proposed to take place during the breeding season or at any other time which may result in the take of migratory birds, their eggs, or active nests, the Service recommends that the project proponent take all practicable measures to avoid and minimize take, such as maintaining adequate buffers, to protect the birds until the young have fledged. The Service further recommends that if field surveys for nesting birds are contemplated, that survey plans be shared and coordinated with this office and that if surveys are conducted with the intent of avoiding take, that any documentation of the presence of migratory birds, eggs, and active nests, along with information regarding the qualifications of the biologist(s) performing the surveys, and any avoidance measures implemented at the project site be maintained. Should surveys or other available information indicate a significant impact to migratory birds, the Service requests that this office be contacted for further consultation on the extent of the impact and the long-term implications of the intended use of the project on migratory bird populations.

Bald and Golden Eagles

The BGEPA prohibits anyone without a permit issued by the Secretary of the Interior from taking bald or golden eagles, including their parts, nests, or eggs. The Act provides criminal and civil penalties for persons who take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle or any golden eagle, alive or dead, or any part, nest, or egg thereof. The Act defines take as pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb. "Disturb" means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available; 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior. In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously-used nest site during a time when eagles are not present, if, upon the eagles return, such alterations agitate or bother an eagle to a degree that injures an eagle or substantially interferes with normal breeding, feeding, or sheltering habits and causes, or is likely to cause, a loss of productivity or nest abandonment. A permit is required for any take of bald or golden eagles or their nests. Permits to take eagles or their nests are available only for legitimate emergencies or as part of a program to protect eagles.

Threatened, Endangered, and Candidate Species

A list of federally threatened and endangered species, and candidate species that may occur within the proposed project's potential area of influence is enclosed, i.e. a list of threatened, endangered, and candidate species for Burleigh County (enclosure 2). This list fulfills requirements of the Service under the ESA.

If a Federal agency (Western) authorizes, funds, or carries out a proposed action, the responsible Federal agency, or its delegated agent, is required to evaluate whether the action "may affect" listed species or critical habitat. If the Federal agency or its designated agent determines the action "may affect, is likely to adversely affect" listed species or result in destruction or adverse modification of critical habitat, the responsible Federal agency shall request formal section 7 consultation with this office. If the evaluation shows a "no effect" determination for listed species or critical habitat, further consultation is not necessary. If a private entity receives Federal funding for a construction project, or if any Federal permit or license is required, the Federal agency may designate the fund recipient or permittee as its agent for purposes of informal section 7 consultation. The funding, permitting, or licensing Federal agency is responsible to ensure that its actions comply with the ESA, including obtaining concurrence from the Service for any action that may affect a threatened or endangered species or designated critical habitat.

The Aransas Wood Buffalo Population (AWBP) of whooping cranes is the only self sustaining migratory population of whooping cranes remaining in the wild. These birds breed in the wetlands of Wood Buffalo National Park in Alberta and the Northwest Territories of northern

Canada, and overwinter on the Texas coast. Whooping cranes in the AWBP annually migrate through North Dakota during their spring and fall migrations.

Endangered whooping cranes have been documented using stopover habitat throughout North Dakota. The proposed project site is located within the whooping crane migration corridor that includes 95% of all confirmed whooping crane sightings in North Dakota (enclosure 3). Wind energy projects in this wind resource area have the potential to affect whooping cranes during their annual spring and fall migrations. Potential effects may be direct (e.g. collision mortality) or indirect (e.g. avoidance of the site resulting in cranes seeking alternate habitat). The best available information indicates that whooping cranes generally avoid stopover habitat that is developed with wind energy appurtenances, particularly wind turbines. This avoidance may deny them the use of important habitat, and thus may result in an adverse effect in the form of harm by significant habitat modification. Whooping cranes use migration stopover habitat opportunistically and may not use the same stopovers annually. Whooping cranes often stop wherever they happen to be late in the day when they find conditions no longer suitable for migration. This tendency can make for a very unpredictable pattern of stopover use, depending on daily weather conditions. The loss of such habitat due to the presence of wind turbines is a substantial indirect impact that is anticipated to increase with the growth in wind energy development in the whooping crane migration corridor.

The interactions of whooping cranes with wind turbines and wind facilities are currently not fully known, although it is expected that these large birds with relatively low maneuverability are susceptible to mortality via collisions with turbines. Other species of large birds such as raptors, white pelicans, and sandhill cranes have been documented colliding with wind turbine blades. Direct mortality or injury of whooping cranes may occur as they encounter turbines in bad weather or low-light conditions at the beginning or end of migration flights, or when flying between roosts and foraging areas at stopover sites. The highest known source of direct mortality to fledged whooping cranes is from striking power lines. Currently, collisions with power lines have accounted for the death or serious injury of at least 46 whooping cranes since 1956.

Fish and Wildlife Service Property Interests

The Service administers Waterfowl Production Areas owned in fee title, as well as wetland and grassland easements throughout North Dakota. A review of Service realty records for the proposed project area indicates no Service property interests are located in the proposed project area.

High-Value Habitat Avoidance

High-value wildlife habitat types in North Dakota include native prairie, wetlands, wooded draws and riparian forests. We recommend that construction of wind towers and appurtenant facilities in these habitat types be avoided whenever possible.

Our review of NWI maps indicates that wetland areas are located within the project area. NWI data can be accessed directly by visiting their website at (wetlands.fws.gov). Section 404 of the Clean Water Act regulates placement of fill materials in certain wetlands. A Corps of Engineers' 404 permit may be required if fill material will be placed in aquatic sites including wetlands. The project proponent should contact Mr. Dan Cimarosti, Regulatory Office, Corps of Engineers, 1513 South 12th Street, Bismarck, North Dakota 58504 (701-255-0015), to determine their permit requirements. If a 404 permit is required, the Service will also provide recommendations on this project to the Corps.

Research, Monitoring, and Assessment

We recommend project proponents, in coordination with the Service, implement pre-construction wildlife surveys to quantify bird and bat use of the project area. Up to 3 years of post-construction collision monitoring studies are recommended (based on the level of risk identified during pre-construction surveys) to determine the effect of several factors, such as site selection, turbine designs, the layout of wind plants, wind plant operations, habitat alteration, and changes in available perching and nesting sites, on bird and bat deaths. Annual reports outlining the results of these monitoring studies should be submitted to this office. The Avian Subcommittee of the National Wind Coordinating Committee (NWCC) has developed a guidance document to assist wind energy developers in designing studies that will produce credible and comparable results of avian interaction with wind power plants. The NWCC document, "Studying Wind Energy/Bird Interactions: A Guidance Document. Metrics and methods for determining or monitoring potential impacts on birds at existing and proposed wind energy sites" can be obtained by contacting the National Wind Coordination Committee, c/o RESOLVE, 1255 23rd Street, Suite 275, Washington, D.C. 20037, or by visiting their website at (www.nationalwind.org).

Thank you for the opportunity to provide comments. If you have any questions, please contact Terry Ellsworth of my staff or myself at (701) 250-4481, or at the letterhead address.

Sincerely,

for Jeffrey K. Towner
Field Supervisor
North Dakota Field Office

Enclosures (3)

cc: N. Dakota Public Service Commission
North Dakota Game and Fish Department (Attn: John Schumacher)

FEDERAL THREATENED, ENDANGERED, AND CANDIDATE SPECIES
AND DESIGNATED CRITICAL HABITAT FOUND IN
BURLEIGH COUNTY, NORTH DAKOTA

ENDANGERED SPECIES

Birds

Interior least tern (Sterna antillarum): Nests along midstream sandbars of the Missouri and Yellowstone Rivers.

Whooping crane (Grus Americana): Aransas-Wood Buffalo Population (264 birds) occurs in North Dakota counties during spring and fall migration between breeding and wintering areas. Whooping cranes prefer to roost overnight in shallow open water wetland habitat with good visibility during migration stopovers.

Fish

Pallid sturgeon (Scaphirhynchus albus): Known only from the Missouri and Yellowstone Rivers. No reproduction has been documented in 15 years.

Mammals

Gray wolf (Canis lupus): Occasional visitor in North Dakota. Most frequently observed in the Turtle Mountains area.

THREATENED SPECIES

Birds

Piping plover (Charadrius melodus): Nests on midstream sandbars of the Missouri and Yellowstone Rivers and along shorelines of saline wetlands. More nest in North Dakota than any other state.

CANDIDATE SPECIES

Birds

Sprague's Pipit (Anthus spragueii): Nests in native and planted grassland. Prefers patches of grassland at least 72 acres (29 hectares).

DESIGNATED CRITICAL HABITAT

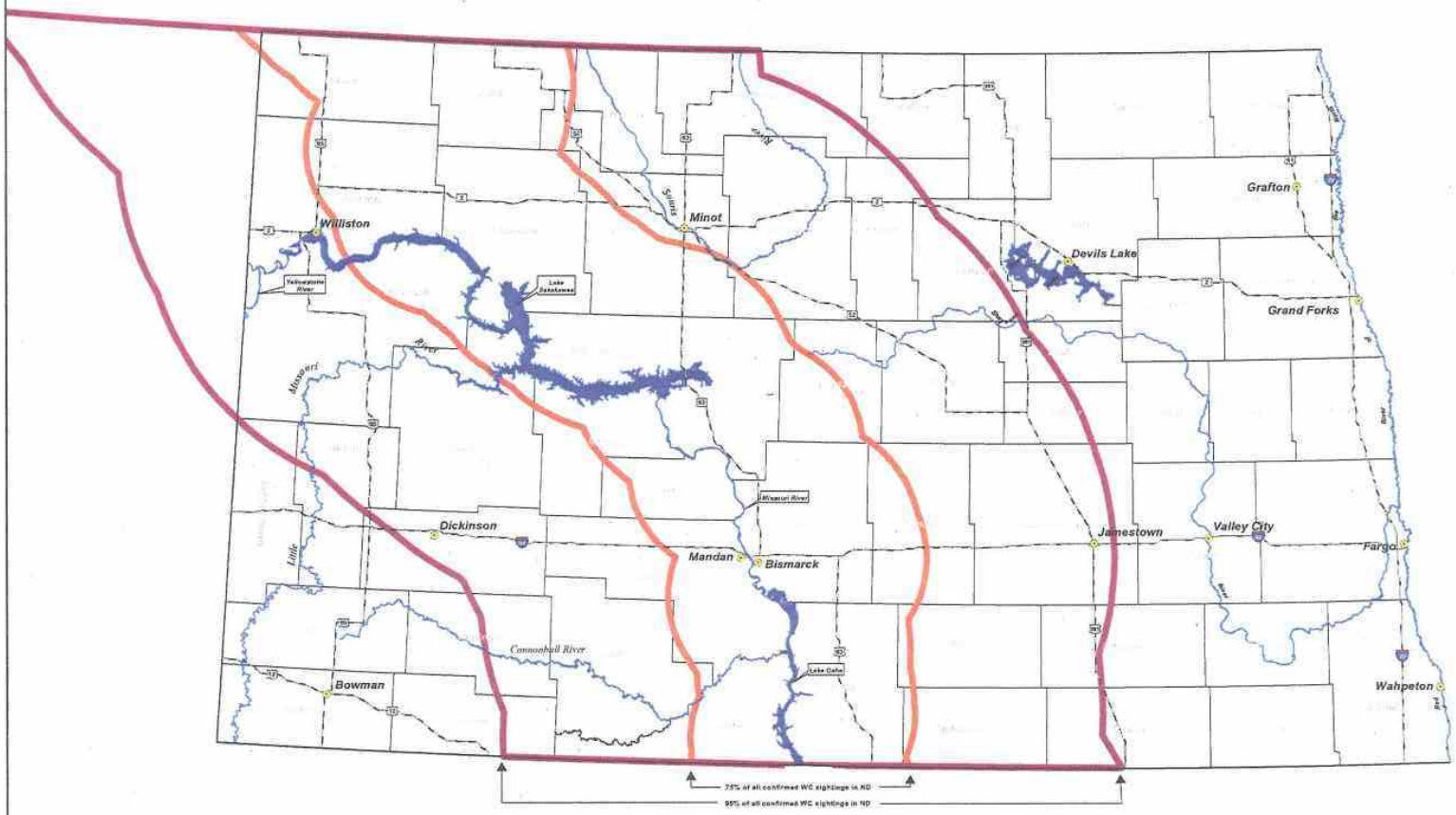
Birds

Piping Plover - Alkali Lakes and Wetlands - Critical habitat includes: (1) shallow, seasonally to permanently flooded, mixosaline to hypersaline wetlands with sandy to gravelly, sparsely vegetated beaches, salt-encrusted mud flats, and/or gravelly salt flats; (2) springs and fens along edges of alkali lakes and wetlands; and (3) adjacent uplands 200 feet (61 meters) above the high water mark of the alkali lake or wetland.

Piping Plover - Missouri River - Critical habitat includes sparsely vegetated channel sandbars, sand and gravel beaches on islands, temporary pools on sandbars and islands, and the interface with the river.

Piping Plover - Lake Sakakawea and Oahe - Critical habitat includes sparsely vegetated shoreline beaches, peninsulas, islands composed of sand, gravel, or shale, and their interface with the water bodies.

North Dakota
Whooping Crane Migration Corridor



N
W E
S

DISCLAIMER:

The USFWS makes no claim as to the accuracy or completeness of the displayed information. Species occurrence and habitat information is provided for illustrative purposes only. Federal action agencies and project proponents should contact the USFWS North Dakota Field Office for more detailed species information and technical assistance in evaluating potential project impacts to fish and wildlife resources.

Map produced 04/21/2010 by USFWS Ecological Services, Bismarck, ND.

75% Whooping Crane Migration Corridor

95% Whooping Crane Migration Corridor

0 12.5 25 50 75 100
Miles

INTERIM GUIDELINES TO AVOID AND MINIMIZE WILDLIFE IMPACTS FROM WIND TURBINES

Introduction

Wind-generated electrical energy is renewable, produces no emissions, and is generally considered to be an environmentally friendly technology. Development of wind energy is strongly endorsed by the Secretary of the Interior, as expressed in the Secretary's Renewable Energy on Public Lands Initiative (May 2002). However, wind energy facilities can adversely impact wildlife, especially birds (e.g., Orloff and Flannery 1992, Leddy et al. 1999, Woodward et al. 2001, Braun et al. 2002, Hunt 2002) and bats (Keeley et al. 2001, Johnson et al. 2002, Johnson et al. 2003). As more facilities with larger turbines are built, the cumulative effects of this rapidly growing industry may initiate or contribute to the decline of some wildlife populations (Manes et al. 2002, Johnson et al. 2002, Manville 2003). The potential harm to these populations from an additional source of mortality or adverse habitat impacts makes careful evaluation of proposed facilities essential. Due to local differences in wildlife concentration and movement patterns, habitats, area topography, facility design, and weather, each proposed development site is unique and requires detailed, individual evaluation.

The following guidance was prepared by the U.S. Fish and Wildlife Service (Service). Like the Service's voluntary guidance addressing the siting, construction, operation, and decommissioning of communication towers (http://migratorybirds.fws.gov/issues/towers/comtow.html) and the voluntary guidance developed in cooperation with the electric utility industry to minimize bird strikes and electrocutions (APLIC 1994, APLIC 1996), this guidance is intended to assist the wind energy industry in avoiding or minimizing impacts to wildlife and their habitats. This is accomplished through: (1) proper evaluation of potential Wind Resource Areas (WRAs), (2) proper location and design of turbines and associated structures within WRAs selected for development, and (3) pre- and post-construction research and monitoring to identify and/or assess impacts to wildlife. These guidelines are based on current science and will be updated as new information becomes available. They are voluntary, and interim in nature. They will be evaluated over a two-year period, and then modified as necessary based on their performance in the field, on comments from the public, and on the latest scientific and technical discoveries developed in coordination with industry, states, academic researchers, and other Federal agencies. After this period, the Service plans to develop a complete operations manual for evaluation, site selection, design, construction, operation, and monitoring of wind energy facilities in both terrestrial and aquatic environments.

Data on wildlife use and mortality collected at one wind energy facility are not necessarily applicable to others; each site poses its own set of possibilities for negative effects on wildlife. In addition, the wind industry is rapidly expanding into habitats and regions that have not been well studied. The Service therefore suggests a precautionary approach to site selection and development, and will employ this approach in making recommendations and assessing impacts of wind energy developments. We encourage the wind energy industry to follow these guidelines and, in cooperation with the Service, to conduct scientific research to provide additional information on the impacts of wind energy development on wildlife. We further encourage the industry to look for opportunities to promote bird and other wildlife conservation when planning wind energy facilities (e.g., voluntary habitat acquisition or conservation easements).

The Service is guided by the Fish and Wildlife Service Mitigation Policy (Federal Register 46 (15), January 1981) in evaluating modifications to or loss of habitat caused by development. This policy follows the sequence of steps recommended in the Council on Environmental Quality's Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA) in seeking to avoid, minimize, or compensate for negative impacts. Mitigation can involve (1) avoiding the impact of an activity by taking no action; (2) minimizing impacts by limiting the degree of activity; (3) rectifying an impact by repairing, rehabilitating, or restoring an affected environment; (4) reducing or eliminating an impact by conducting activities that preserve and maintain the resources; or (5) compensating for an impact by replacing or providing substitute resources or environments. Any mitigation recommended by the Service

for wind energy development would be voluntary on the part of the developer unless made a condition of a Federal license or permit. Mitigation does not apply to "take" of species under the Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, or Endangered Species Act. The goal of the Service under these laws is the elimination of loss of migratory birds and endangered and threatened species due to wind energy development. The Service will actively expand partnerships with regional, national, and international organizations, States, tribes, industry, and environmental groups to meet this goal.

Projects with Federal involvement may require additional analysis under the National Environmental Policy Act (http://www.fws.gov/r9esnepa), Endangered Species Act (http://endangered.fws.gov), or National Wildlife Refuge System Administration Act (http://www.fws.gov/policyMakers/mandates/index.html#adminact). This includes projects on federally-owned lands (e.g., National Wildlife Refuges, National Forests), lands where a Federal permit is required for development (e.g., BLM-administered lands), or lands where Federal funds were used for purchase or improvement (some State Wildlife Management Areas).

These guidelines are not intended nor shall they be construed to limit or preclude the Service from exercising its authority under any law, statute, or regulation, and to take enforcement action against any individual, company, or agency, or to relieve any individual, company, or agency of its obligations to comply with any applicable Federal, State, or local laws, statutes, or regulations.

The guidelines contain a site evaluation process with checklists for pre-development evaluations of potential terrestrial wind energy development sites (Appendix 1). Use of this process allows comparison of one site with another with respect to the impacts that would occur to wildlife if the area were developed. The evaluation area for a potential development site should include the "footprint" encompassing all of the turbines and associated structures planned for that proposed facility, and the adjacent wildlife habitats which may be affected by the proximity of the structures, but excluding transmission lines extending outside the footprint. All potential development sites within a geographic area should be evaluated before a site is selected for development.

Pre-development evaluations should be conducted by a team that includes Federal and/or State agency wildlife professionals with no vested interest (e.g., monetary or personal business gain) in the sites selected. Teams may also include academic and industry wildlife professionals as available. Any site evaluations conducted by teams that do not include Federal and/or State agency wildlife professionals will not be considered valid evaluations by the Service.

The pre-development evaluation may also identify additional studies needed prior to and after development. Post-construction monitoring to identify any wildlife impacts is recommended at all developed sites. Pre- and post-development studies and monitoring may be conducted by any qualified wildlife biologist without regard to his/her affiliation or interest in the site.

Additional information relevant to these guidelines is appended as follows:

Appendix 2 – Definitions Related to Wind Energy Development and Evaluation
Appendix 3 – Wildlife Laws Relevant to Wind Power Development Projects
Appendix 4 - Research Needs on the Impacts of Wind Power Development on Wildlife
Appendix 5 – Procedures for Endangered Species Evaluations and Consultations
Appendix 6 – Guidelines for Considering Wind Turbine Siting on Easement Lands Administered as Part of the National Wildlife Refuge System in Region 6 (CO, KS, MT, NE, ND, SD, UT, WY)
Appendix 7 – Known and Suspected Impacts of Wind Turbines on Wildlife
Appendix 8 – Literature Cited

Site Evaluation

The site evaluation protocol presented in Appendix 1 was developed by a team of Federal, State, university, and wind energy industry biologists to rank potential terrestrial wind energy development sites by their potential impacts on wildlife. There are two steps to follow:

1. Identify and evaluate reference sites, preferably within the general geographic area of the proposed facility. Reference sites are high-quality wildlife areas where wind development would result in the maximum negative impact on wildlife (i.e., sites selected to have the highest possible rank using the protocol). Reference sites are used to determine the comparative risks of developing other potential sites.

2. Evaluate potential development sites to determine risk to wildlife and rank sites against each other using the highest-ranking reference site as a standard. Although high-ranking sites are generally less desirable for wind energy development, a high rank does not necessarily preclude development of a site, nor does a low rank automatically eliminate the need to conduct pre-development assessments of wildlife resources or post-development assessments of impacts.

Studies to Assess and Monitor Wildlife Impacts

While ranking potential development sites, the site evaluation team referenced above may identify pre-development studies that are needed to better assess potential negative impacts to wildlife. Ranking may also suggest the extent and duration of study required. Developers are encouraged to conduct any studies suggested by the team in coordination with Service and other agency wildlife biologists.

Post-development mortality studies should be a part of any site development plan in order to determine if or to what extent mortality occurs. As with pre-development studies, ranking may suggest the extent and duration of study needed. Studies should be designed in coordination with Federal and other agency biologists.

Site Development Recommendations

The following recommendations apply to locating turbines and associated structures within WRAs selected for development of wind energy facilities:

1. Avoid placing turbines in documented locations of any species of wildlife, fish, or plant protected under the Federal Endangered Species Act.

2. Avoid locating turbines in known local bird migration pathways or in areas where birds are highly concentrated, unless mortality risk is low (e.g., birds present rarely enter the rotor-swept area). Examples of high concentration areas for birds are wetlands, State or Federal refuges, private duck clubs, staging areas, rookeries, leks, roosts, riparian areas along streams, and landfills. Avoid known daily movement flyways (e.g., between roosting and feeding areas) and areas with a high incidence of fog, mist, low cloud ceilings, and low visibility.

3. Avoid placing turbines near known bat hibernation, breeding, and maternity/nursery colonies, in migration corridors, or in flight paths between colonies and feeding areas.

4. Configure turbine locations to avoid areas or features of the landscape known to attract raptors (hawks, falcons, eagles, owls). For example, Golden Eagles, hawks, and falcons use cliff/rim edges extensively; setbacks from these edges may reduce mortality. Other examples include not locating turbines in a dip or pass in a ridge, or in or near prairie dog colonies.

5. Configure turbine arrays to avoid potential avian mortality where feasible. For example, group turbines rather than spreading them widely, and orient rows of turbines parallel to known bird movements, thereby decreasing the potential for bird strikes. Implement appropriate storm water management practices that do not create attractions for birds, and maintain contiguous habitat for area-sensitive species (e.g., Sage Grouse).

6. Avoid fragmenting large, contiguous tracts of wildlife habitat. Where practical, place turbines on lands already altered or cultivated, and away from areas of intact and healthy native habitats. If not practical, select fragmented or degraded habitats over relatively intact areas.

7. Avoid placing turbines in habitat known to be occupied by prairie grouse or other species that exhibit extreme avoidance of vertical features and/or structural habitat fragmentation. In known prairie grouse habitat, avoid placing turbines within 5 miles of known leks (communal pair formation grounds).

8. Minimize roads, fences, and other infrastructure. All infrastructure should be capable of withstanding periodic burning of vegetation, as natural fires or controlled burns are necessary for maintaining most prairie habitats.

9. Develop a habitat restoration plan for the proposed site that avoids or minimizes negative impacts on vulnerable wildlife while maintaining or enhancing habitat values for other species. For example, avoid attracting high densities of prey animals (rodents, rabbits, etc.) used by raptors.

10. Reduce availability of carrion by practicing responsible animal husbandry (removing carcasses, fencing out cattle, etc.) to avoid attracting Golden Eagles and other raptors.

Turbine Design and Operation Recommendations

1. Use tubular supports with pointed tops rather than lattice supports to minimize bird perching and nesting opportunities. Avoid placing external ladders and platforms on tubular towers to minimize perching and nesting. Avoid use of guy wires for turbine or meteorological tower supports. All existing guy wires should be marked with recommended bird deterrent devices (Avian Power Line Interaction Committee 1994).

2. If taller turbines (top of the rotor-swept area is >199 feet above ground level) require lights for aviation safety, the minimum amount of pilot warning and obstruction avoidance lighting specified by the Federal Aviation Administration (FAA) should be used (FAA 2000). Unless otherwise requested by the FAA, only white strobe lights should be used at night, and these should be the minimum number, minimum intensity, and minimum number of flashes per minute (longest duration between flashes) allowable by the FAA. Solid red or pulsating red incandescent lights should not be used, as they appear to attract night-migrating birds at a much higher rate than white strobe lights.

3. Where the height of the rotor-swept area produces a high risk for wildlife, adjust tower height where feasible to reduce the risk of strikes.

4. Where feasible, place electric power lines underground or on the surface as insulated, shielded wire to avoid electrocution of birds. Use recommendations of the Avian Power Line Interaction Committee (1994, 1996) for any required above-ground lines, transformers, or conductors.

5. High seasonal concentrations of birds may cause problems in some areas. If, however, power generation is critical in these areas, an average of three years monitoring data (e.g., acoustic, radar, infrared, or observational) should be collected and used to determine peak use dates for specific sites. Where feasible, turbines should be shut down during periods when birds are highly concentrated at those sites.

6. When upgrading or retrofitting turbines, follow the above guidelines as closely as possible. If studies indicate high mortality at specific older turbines, retrofitting or relocating is highly recommended.

Appendix 1

PROTOCOL TO RANK POTENTIAL TERRESTRIAL WIND ENERGY DEVELOPMENT SITES BY IMPACTS ON WILDLIFE

This protocol was developed by a team of Federal, State, university, and industry biologists to rank potential wind development sites in Montana by their potential for impacts on wildlife (USFWS 2002). It has been modified to apply nationwide. The protocol allows the user to evaluate potential development sites and rank them against a reference site. Objectives are to: (1) assist developers in deciding whether to proceed with development; (2) provide a procedure to determine pre-construction study needs to verify use of potential sites by wildlife; and (3) provide recommendations for monitoring potential sites post-construction to identify, quantify, or verify actual impacts (or lack thereof).

Although this protocol focuses on impacts to wildlife, potential impacts to fish, other aquatic life, and plants should be considered as well. Surveys for rare, threatened, or endangered plants known or suspected to occur in the geographic area should be conducted at all proposed terrestrial development sites having suitable habitat.

This protocol is intended to provide a conceptual framework for initial steps in investigating a site. It is not intended to be all-inclusive relative to objectives, methods, and analysis nor to serve as the definitive reference or directive for any step in wind power related investigations. The Physical Attributes, Species Occurrence and Status, and Ecological Attractiveness groupings in this protocol should serve as a model framework; the terrain features, species, and conditions used in these groupings will be dictated by local conditions and should be developed by wildlife biologists familiar with the region in which this protocol is being used.

Potential Impact Index (PII)

The Potential Impact Index represents a "first cut" analysis of the suitability of a site proposed for development. It does so by estimating use of the site by selected wildlife species as an indicator of potential impact. Emphasis of the PII is on initial site evaluation and is intended to provide more objectivity than simple reconnaissance surveys.

There are two steps to follow in ranking sites by their potential impact on wildlife:

1. Identify and evaluate reference sites within the general geographic area of Wind Resource Areas (WRA's) being considered for development of a facility. Reference sites are areas where wind development would result in the maximum negative impact on wildlife, resulting in a high PII score. Reference sites are used to determine the comparative risks of developing other potential sites.

2. Evaluate potential development sites to determine risk to wildlife, and rank sites against each other using the highest-ranking reference site as a standard. While high-ranking sites are generally less desirable for wind development, a high rank does not necessarily preclude development of a site, not does a low rank automatically eliminate the need to conduct pre-development assessments of wildlife use and impact potential.

The following assumptions are implicit in the PII process:

1. All WRA sites, regardless of turbine design, configuration, placement, or operation present some hazard and risk to wildlife from both an individual and population perspective.

2. Certain sites present less hazard and risk to wildlife than others.

3. No adequate and defensible information exists regarding the appropriateness of the proposed WRA site being evaluated relative to impacts to wildlife.

4. Evaluations will be conducted by qualified biologists without competitive interest in site selection, including those from State and Federal agencies who are familiar with local and regional wildlife.

The PII is designed primarily to evaluate potential impacts on aerial wildlife from collision with turbines and infrastructure. The PII is derived from the results of three checklists (forms are attached). These checklists should be developed and applied as follows:

A. The PHYSICAL ATTRIBUTE checklist considers topographic, meteorological, and site characteristics that may influence bird and bat occurrence and movements.

B. The SPECIES OCCURRENCE AND STATUS checklist includes: Birds of Conservation Concern at the Bird Conservation Region level (http://migratorybirds.fws.gov/reports/reports.html); all federally-listed Endangered, Threatened, and Candidate Species (http://endangered.fws.gov); bird species of high recreational or other value (e.g., waterfowl, prairie grouse); State Endangered, Threatened, and Species of Management Concern; and any additional species of concern listed by State Natural Heritage Programs.

C. The ECOLOGICAL ATTRACTIVENESS checklist evaluates the presence and influence of ecological magnets and other conditions that would draw birds or bats to the site or vicinity.

Each checklist has boxes to be checked for a particular attribute or species found at an evaluation site. The number of boxes in each checklist will vary from region to region due to variations in the number of physical attributes and species of concern in that region. Keep in mind that all boxes in a checklist are very unlikely to be checked at a single evaluation site, because all species and ecological physical conditions potentially occurring in the region would not exist at one site.

Each checklist should be assigned a divisor, which is developed by dividing the number of boxes in a checklist by the total number of boxes in all three checklists. This expands the spread of index values and more dramatically displays the magnitude of differences among sites. For example, if the PHYSICAL ATTRIBUTE checklist has 36 boxes and the total number of boxes in all three checklists is 144, divide 36 by 144 = 0.25, the divisor.

You can change the number of boxes in any of the checklists to fit your geographic area, habitat type, or other selected region (e.g., a state or portion of a state). Remember to recalculate the divisor if you change the number of boxes.

Boxes in a checklist are checked if the condition or species is known or strongly suspected to occur. Criteria for checklist conditions marked with an asterisk (*) are explained on the following page. Conditions that are self-explanatory are not included. Conditions are not weighted. Boxes are checked in the SPECIES OCCURRENCE AND STATUS checklist if presence of the species is unconfirmed but strongly suspected (i.e., WRA is within the range and habitat of the species). This permits more liberal assignment of potential impact, reduces the probability of missing impacts on specific species due to lack of empirical data, and focuses future study and monitoring effort. Totals for each checklist are simple column sums. The PII is calculated from the checklist totals. A completed example from Montana is provided at the end of this Appendix.

Determining Checklist Scores

Checklist scores are determined as follows:

1. Place a check in each box for which an attribute, species, or condition is present or strongly suspected.

2. After completing the three checklists for each site, add the total number of checks in a checklist for an ending sum (each box checked equals one).

Determining PII Score

The Potential Impact Index score is determined as follows:

1. Place the sums from each of the three checklists in the POTENTIAL IMPACT INDEX table sum boxes (Σ column) in the appropriate category.

2. Divide each checklist sum by the previously calculated divisor to adjust the sum for disproportionate numbers of conditions in each checklist, and place this adjusted sum in the Σ/p boxes for each checklist.

3. Add the adjusted checklist sums (Σ/p column) to produce the PII score.

Include any questions, statements, comments, or concerns regarding any checklist cell or category on the SITE SPECIFIC COMMENTS sheet. These comments are critical to determining pre-construction study needs. They will also help identify and refine questions and objectives to be addressed by follow-up study and monitoring. The nature of suspected Significant Ecological Events should be noted on the SITE SPECIFIC COMMENTS sheet.

Ranking PII Scores

PII of each site evaluated is assigned a ranking based on its proportional relationship to the reference site that has the maximum PII score, as shown in Figure 2 in the Montana example. Ranking categories (High, Low, etc.) in the example are arbitrarily set at intervals of 20 percent of maximum.

Rankings are intended as a guide to developers. They are designed to serve as indicators of relative risk to wildlife and thus provide an estimator of the level of impact that may be expected should a site be developed. A high rank does not preclude development, nor does a low rank automatically eliminate the need to conduct pre-development assessments of impacts on wildlife. More intensive pre-construction studies may be needed for both scenarios if development of the site is pursued. Rankings may also suggest the extent of additional study needed.

In the case of federally listed threatened, endangered, or candidate species of wildlife, fish, or plants, consultation with the Fish and Wildlife Service under the Endangered Species Act is required, and may preclude development of a site regardless of its PII score. See Appendix 5 for procedures for obtaining lists of these species that may be present, and for consulting with the Fish and Wildlife Service if species or their habitats are found.

Determining Pre-construction Study Needs

The goals of pre-construction studies are to estimate impacts of proposed wind power development on wildlife by addressing areas of concern identified during the PII process. Objectives, intensity, duration, and methods of pre-construction studies are likely to be site specific, but may be independent of ranking. Regardless of ranking, studies should be designed to address (1) verification of use of WRAs by all species recorded in the "SPECIES OCCURRENCE AND STATUS" checklist, (2) verification of natural conditions (e.g., under "Significant Ecological Events", the magnitude, timing, and location of suspected bird/bat migration), or (3) questions noted in the SITE SPECIFIC COMMENTS sheet for that site. The SITE SPECIFIC COMMENTS sheet may also indicate conditions that need not be investigated. As a result, a site with a low rank may require radar surveillance (e.g., important songbird migration site) while a site with a high rank may require only a single season visual survey (e.g., site potentially contains autumn Whooping Crane habitat). The process should involve a feedback mechanism within an adaptive management strategy (Figure 1). Timely review of study results will determine if data are

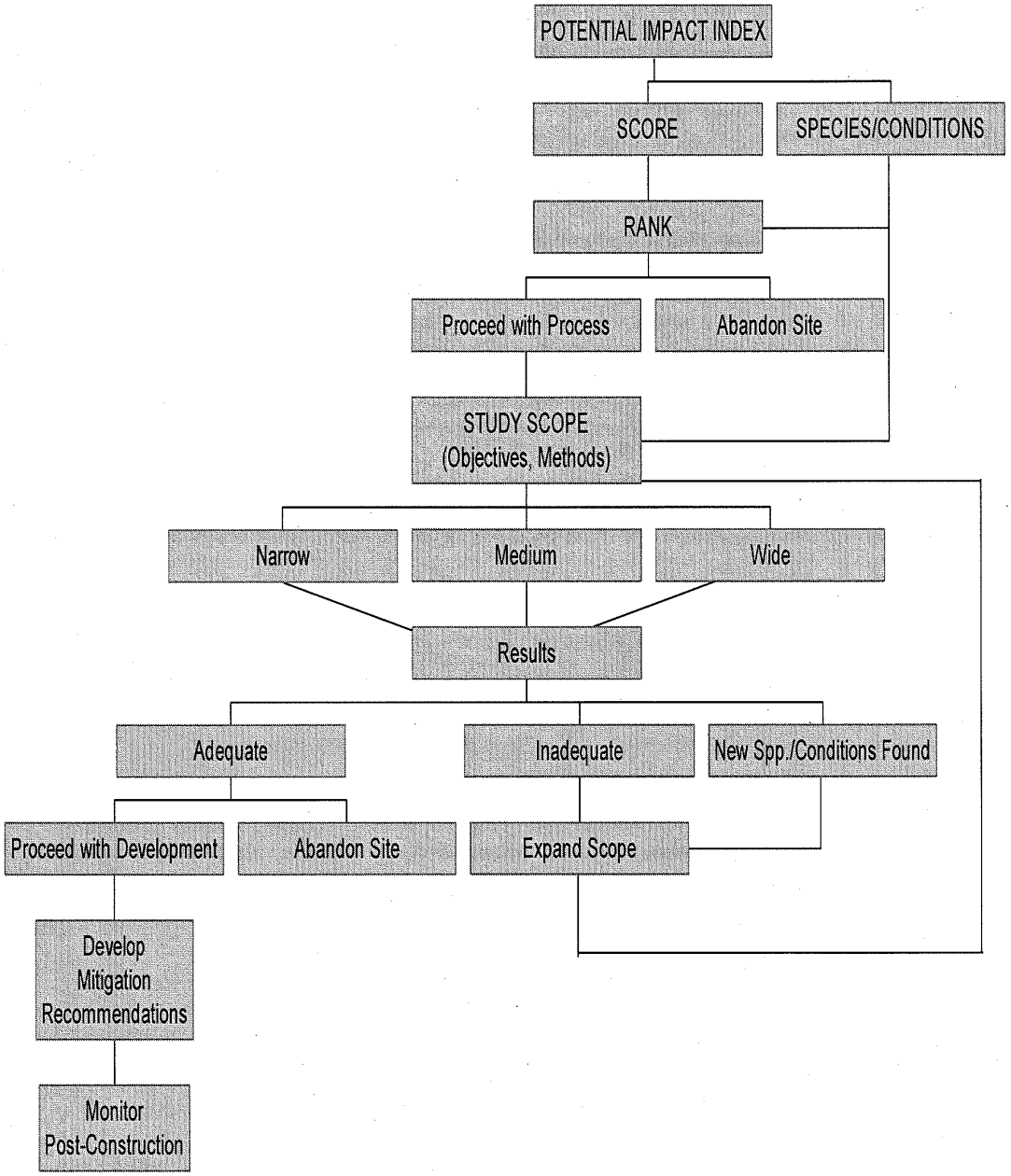


Figure 1. A suggested decision tree for assessing potential development sites. Begin by developing a PII score.

adequate, if conclusions are defensible (Anderson et al. 1999), and if additional investigational effort is required (e.g., if Black-footed Ferrets are found on Mountain Plover searches). Projects with Federal involvement may require additional analysis under the National Environmental Policy Act (http://www.fws.gov/r9esnepa), Endangered Species Act (http://endangered.fws.gov), or National Wildlife Refuge System Administration Act (http://www.fws.gov/policyMakers/mandates/index.html#adminact). Also, the mere existence of a pre-construction study, whether in progress or completed, does not imply Federal sanction for development of a site.

Post-construction Studies

The Service recommends that all sites be monitored for impacts on wildlife after construction is completed. Some sites may be so obviously benign that little more than simple reconnaissance study may be needed and any impact will be revealed during post-construction monitoring. Otherwise, pre-construction studies should be designed to explicitly consider post-construction monitoring that permits statistically valid evaluation of actual impacts. Accordingly, studies should be conducted as much as possible within a Before-After-Control-Impact (BACI) study design (Green 1979). Such design requires investigation of at least two sites (Impact [proposed site] and Control) simultaneously, both pre-construction (Before) and post-construction (After). Because true "Control" sites are seldom available, other sites may be substituted, including reference sites used in developing the PII ranking. In the case of radar surveillance studies, sites within the proposed WRA boundaries may be acceptable (e.g., Harmata et al. 1998). Structuring pre-construction studies within a hypotheses-testing framework will help identify appropriate metrics, focus effort, and permit comparisons with post-construction conditions or other WRAs.

Where feasible, post-construction studies should also be utilized to test measures that may eliminate or reduce impacts on wildlife. See Appendix 4, Research Needs on the Impacts of Wind Power Development on Wildlife.

Metrics and Methods

Metrics and methods are specific tools used to assess wildlife populations and their status (e.g., point counts, line transects, nest success studies, radar surveys, mortality rates, and risk). They can provide important information about birds, bats, and other wildlife at proposed development sites. Metrics and methods may be selected to collect seasonal, group, guild, or habitat specific information, based on data and comments in the SPECIES OCCURRENCE AND STATUS checklist and SITE SPECIFIC COMMENTS sheet. For example, a proposed WRA may be in a narrow north-south oriented valley of relatively monotypic habitat. These conditions suggest a heavy seasonal avian migration corridor but little avian breeding habitat. Accordingly, study emphasis should be on defining use and mortality of migratory birds during autumn or spring or both, with little effort directed at defining use and mortality of breeding birds. Conversely, a potential WRA on a flat plain in diverse habitat would indicate the exact opposite in study emphasis.

While metrics represent specific measurements, concepts, and relationships, methods refer to observational or manipulative study techniques that may be used to verify the location of birds and other wildlife, estimate their numbers, and document their use and behavior (Anderson et al. 1999). Table 1 depicts some commonly used metrics and methods for wildlife studies.

Table 1. Examples of metrics and methods associated with evaluating use and mortality of wildlife at proposed Wind Resource Areas in Montana.

Data Need	Metric	Methods
Use Profile	Individuals/Count	Point Counts (birds) Winter Raptor Surveys Lek Counts (grouse) Migration Counts Ungulate Surveys Spotlight Surveys

	Species/Count	Species/guild/group List Point Counts (birds) Raptor Nesting Surveys Raptor Migration Counts Winter Raptor Surveys Acoustic Surveillance (bats) Pellet Counts Bait Stations Track Boards
	Use per unit of time (e.g., hour, season)	Radar Migration Counts Raptors/watch Area Searches
	Individuals/capture effort	Various techniques for capture
	Productivity	Nests/area Raptor Nesting Surveys Nest Success Ungulate Surveys
	Events/height category (Altitude Profile)	Radar
	Events/distance category (Spatial Profile)	Radar
Mortality	Dead/injured individuals/unit	Transects Spot Searches Carcass Removal Study Observer Detection Efficiency Study

Studies should also strive to generate information to mitigate impacts by properly locating, configuring, or operating turbines (Johnson et al. 2000). Every effort should be made to choose metrics and methods that allow comparisons of pre-construction studies with post-construction studies, other WRAs, and other regions.

Interpreting Metrics

It may be difficult to establish empirically exactly what constitutes high use (i.e., potentially high impact). When looking at the distribution and movements, and local, regional, or range-wide population estimates for particular species, the relative proportions of species, groups, or guilds of wildlife using proposed WRAs may indicate degrees of risk. If baseline population data are unknown, consult with a qualified biologist who can recommend a specific metric.

It is likely that little or no evidence of mortality will be found during pre-construction study. If, however, post-construction mortality is found, and statistical evaluation is not possible, that mortality should be assessed in regard to the species status (e.g., ESA-listed species or Birds of Conservation Concern) or the effect of the loss of individuals of that species on a local, regional, or continental population.

Determining Post-construction Monitoring Needs

Post-construction monitoring is important to the Service, industry, and public because of the limited information available on impacts of wind turbines and WRAs on wildlife. Therefore, post-construction monitoring should be designed to detect major impacts. The intended time frame for post-construction monitoring is not expected to exceed three years, however. Major impacts may be considered as statistically significant decreases in use by species of concern, or limited to statistically significant increases in mortality rates of any wildlife. Monitoring effort may be intensive or cursory, depending on results of pre-construction use and mortality studies. Simple, infrequent mortality surveys on impact and

control plots may be all that is needed at WRAs where recorded pre-construction use by wildlife is low. Documented high use of a proposed WRA may require monitoring methods identical to those employed in pre-construction studies. Anderson et al. (1999) provide specific, detailed direction in post-construction study design and monitoring. Manville (2002) developed a monitoring protocol for use by the U.S. Forest Service at three National Forests in Arizona to monitor the impact of cellular telecommunications towers on migratory birds that could be modified for use at land-based wind turbines.

POTENTIAL IMPACT INDEX CHECKLIST FORMS AND INSTRUCTIONS

PHYSICAL ATTRIBUTE CHECKLIST

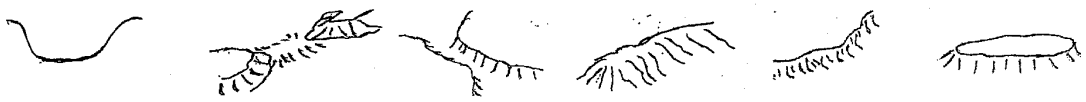
Physical Attribute				Site			
Topography	Mountain Aspect, if mountainous*	Side	W				
			E				
			N				
			S				
		Top					
		Foothill	W				
			E				
			N				
			S				
Wind* Direction	S						
	N						
	E						
	W						
	Updrafts*						
Migratory* Corridor Potential	Latitudinal (N ↔ S)						
	Longitudinal (E ↔ W)						
	Wide Approaches (>30 km)*						
	Funnel Effect	Horizontal					
		Vertical					
Site Size (acres) & Configuration*	<640						
	>640 <1000						
	>1000 <1500						
	Turbine Rows not Parallel to						
Infrastructure To Build	Transmission						
	Roads						
	Buildings*						
	Maintenance						
	Daily Activity						
	Substation						
Increased Activity*							
Totals							

* Criteria on following page

PHYSICAL ATTRIBUTE CRITERIA - categories, max Σ = , (p =).

Topography - Terrain characteristic within the ecological influence of the proposed wind development site, generally, but not restricted to ± 5 mi. Some examples are:

Valley Pass Gap Ridgetop Bluff Butte



Mountain Aspect - Aspect of topography for site of proposed development. Multiple categories may be checked.

Wind Direction - Compass direction *from* which prevailing winds approach. Multiple categories may be checked.

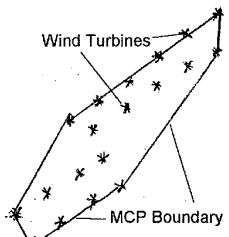
Updrafts - Do updrafts/upslope winds prevail?

Migratory Corridor Potential - Subjective estimate of area to be a potential avian/bat migratory corridor based strictly on topographical characteristics. Multiple categories may be checked.

Wide (>20 mi) - Terrain characteristics of approaches to site from each migratory direction, i.e., a large plain, river corridor, long valley. The larger the area that migrant birds/bats are drawn from, the more may be at risk

Funnel Effect - Is the site in or near an area where migrant birds/bats may be funneled (concentrated) into a smaller area, either altitudinally, laterally, or both?

Site Size & Configuration – Size is estimated as if a minimum convex polygon (MCP) were drawn around peripheral turbines.



Successive boxes are checked to convey relationship of larger size = increased impact to birds/bats, *e.g.*, a 700 acre site will have 2 categories checked while a 1,200 acre site will have all 3 categories checked.

Configuration of turbine rows is usually perpendicular to prevailing wind direction. Rows aligned perpendicular or oblique to route of migration intuitively presents more risk to birds than rows aligned parallel to movement.

Buildings – Building are categorized by relative size and visitation frequency, *i.e.,* structures that are visited daily are usually larger and present more impact than those that are not. If a "Daily Activity" building is required, all Building categories are checked. If a maintenance structure is required, Substation is also checked.

Increased Activity - Will any type of human activity increase? Sites in urban-suburban or otherwise developed areas (oil, gas, mines) will have less impact on wildlife than those in remote or undeveloped areas.

Avian Species of Concern Checklist
(Complete prior to SPECIES OCCURRENCE & STATUS Checklist)

	Site											
Birds (n =)												
Occurrence	B	M/W	Σ	B	M/W	Σ	B	M/W	Σ	B	M/W	Σ
Subtotals												
Total												

Avian Species of Concern Checklist (species, max Σ =)

Column totals of this list are added to appropriate cells in the SPECIES OCCURRENCE & STATUS checklist. Consult Birds of Conservation Concern (http://migratorybirds.fws.gov/reports/reports.html) and Threatened/Endangered Species list (http://endangered.fws.gov), and list other species of high value or management concern such as migratory waterfowl and prairie grouse. Appropriate avian field guides and species accounts should be consulted for confirmation of species distribution and habitat associations. State Natural Heritage Programs may also provide species accounts that include additional information useful in completing checklists.

In addition to species lists (rows), season of occurrence is also indicated (columns). "B" indicates breeding or summer occurrence and "M/W" indicates presence during migration or as wintering species. If occurrence within or in the vicinity of a proposed site is confirmed or suspected, an "X" is entered.

Bat Species Of Concern Checklist
(Complete prior to SPECIES OCCURRENCE & STATUS Checklist)

	Site											
Bats (n =)												
Occurrence	B	M/W	Σ	B	M/W	Σ	B	M/W	Σ	B	M/W	Σ
Subtotals												
Total												

Bat Species Of Concern Checklist (species, max Σ =).

Column totals of this list are added to appropriate cells in the SPECIES OCCURRENCE & STATUS checklist. Appropriate bat field guides and references (Barbour and Davis 1969) should be consulted for confirmation of species distribution and habitat associations. State Natural Heritage Programs may also provide species accounts that include additional information useful in completing checklists.

In addition to species lists (rows), season of occurrence is also indicated (columns). "B" indicates breeding or summer occurrence and "M/W" indicates presence during migration or as wintering species. If occurrence within or in the vicinity of a proposed site is confirmed or suspected, an "X" is entered.

SPECIES OCCURRENCE & STATUS CHECKLIST

Species		Site											
	Occurrence	B	M/W	Σ	B	M/W	Σ	B	M/W	Σ	B	M/W	Σ
Threatened & Endangered (includes wildlife, fish, and plants)													
Candidate*													
Special Concern*	Birds (max Σ=)												
	Bats (max Σ=)												
	Subtotals												
	Total												

* Criteria on following page

SPECIES OCCURRENCE & STATUS Checklist (categories, max Σ = , (p =).

Checklist totals for each column in "Avian Species of Concern List" and "Bat Species of Concern List" are inserted in this checklist.

Threatened & Endangered Species - Species on the Federal List of Endangered and Threatened Species (http://endangered.fws.gov).

Candidate Species - Species being investigated for inclusion in the Federal List of Endangered and Threatened Species (http://endangered.fws.gov).

Species of Special Concern - Species listed in Birds of Conservation Concern; by Natural Heritage Programs that are known or suspected to be rare, endemic, disjunct, threatened or endangered; and species of high value such as migratory or other game birds.

Golden Eagles may be included in this checklist because of special protective status afforded under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d). Other species (e.g., Sage Grouse) may be included because of recent concern over population declines range wide. Bats (other than bat Species of Special Concern) should be included due to generally unknown impacts of wind farms on individuals and populations.

ECOLOGICAL ATTRACTIVENESS CHECKLIST

Site

Ecological Attractor						
Migration Route*		Local				
	Continental*	N				
		S				
		E				
		W				
Ecological Magnets*		Lotic System				
		Lentic System				
		Wetlands				
		Native Grassland				
		Forest				
		Food Concentrated				
		Energetic Foraging				
	Vegetation/ Habitat	Unique				
		Diverse				
Significant Ecological Event*						
Site of Special Conservation Status*						
		Total				

* Criteria on following page

ECOLOGICAL ATTRACTIVENESS CRITERIA - categories, max Σ = , (p =).

Migration Route - Indicates predominate direction of movement of seasonal migrations. Multiple categories may be checked.

Local - Some avian populations move only altitudinally & direction may be East-West (Sage Grouse, owls, Bald Eagles).

Continental - Some migratory corridors experience mass movements in only one season/direction annually (e.g., Bridger Mountains autumn eagle migration).

Ecological Magnets - Special, unique, unusual, or super ordinary habitats or conditions within the vicinity of the site that may attract wildlife. Lotic systems include small perennial or seasonal creeks to major rivers. Lentic systems include stock ponds to lakes to marine environments. Multiple categories may be checked.

Vegetation/Habitat - Unique or exceptionally diverse vegetation or habitat in the vicinity may indicate exceptional diversity and abundance of avian species or bats.

Significant Ecological Event - Special, unique, unusual, or super ordinary events that occur or are suspected to occur in the vicinity of the site, e.g., up to one third of the Continental population of Trumpeter Swans visit Ennis Lake, < 2.5 miles from a proposed Wind Resource Area; the Continental migration of shorebirds passes over (many stop) at Benton Lake National Wildlife Refuge) and up to 2,000 Golden Eagles pass over the Bridger Mountains in autumn. If unknown but suspected a "?" is entered. Specifics regarding the cell are then addressed in the appropriate box of the SITE SPECIFIC COMMENTS sheet to focus follow-up investigation and assist in definition of study objectives.

Site of Special Conservation Status - Any existing or proposed covenants, conservation easements, or other land development limitations intended to conserve, protect, or enhance wildlife or habitat. This criterion is weighted (2 entered if true) because of previous financial or other investment in ecological values. Specifics regarding the easement are then addressed in the appropriate box of the SITE SPECIFIC COMMENTS sheet to focus follow-up attention.

POTENTIAL IMPACT INDEX

	Site							
Checklist (p)[1]	Σ	Σ/p	Σ	Σ/p	Σ	Σ/p	Σ	Σ/p
Physical ( )								
Species Occurrence & Status ( )								
Ecological ( )								
Totals								

[1]Proportion of total checklist categories.

Determining PII Score

A. Place the sums from each of the three checklists in the POTENTIAL IMPACT INDEX table sum boxes (Σ column) in the appropriate category.

B. Divide each checklist sum by the previously calculated divisor to adjust the sum for disproportionate numbers of conditions in each checklist, and place this adjusted sum in the Σ/p boxes for each checklist.

C. Add the Σ/p boxes for the three checklists to obtain a total score.

SITE SPECIFIC COMMENTS

	Site			
Checklist				
Physical				
Species Occurrence				
Ecological				

EXAMPLE SITE ASSESSMENT AND CALCULATION OF POTENTIAL IMPACT INDEX (PII) FROM MONTANA

POTENTIAL IMPACT INDEX CHECKLISTS

Calculating Divisors

A. Each checklist should be assigned a divisor, which is developed by dividing the number of boxes in a checklist by the total number of boxes in all three checklists. In this example, the total number of boxes in all three checklists is 143.

B. Physical Attribute checklist: 36 boxes ÷ 143 = 0.25; Species Occurrence and Status checklist: 91 boxes ÷ 143 = 0.63; Ecological Attractiveness checklist: 16 boxes ÷ 143 = 0.11.

Determining Checklist Scores

A. Place a check in each box for which an attribute, species, or condition is present or strongly suspected.

B. After completing the three checklists for each site, add the total number of checks in a checklist for an ending sum (each box checked equals 1).

PHYSICAL ATTRIBUTE CHECKLIST

Physical Attribute				Site: Snowy Mtn.Range			
Topography	Mountain Aspect	Side	W	X			
			E				
			N				
			S				
		Top					
		Foothill	W	X			
			E				
			N				
			S				
	Valley			X			
	Pass						
	Gap						
	Ridge			X			
	Bluff						
	Butte						
Wind Direction	S						
	N			X			
	E						
	W						
	Updrafts			X			
Migratory Corridor Potential	Latitudinal (N ↔ S)						
	Longitudinal (E ↔ W)			X			
	Wide Approaches (>30 km)						
	Funnel Effect	Horizontal		X			
		Vertical					
Site Size (acres) & Configuration	<640			X			
	>640 <1000			X			
	>1000 <1500			X			
	Turbine Rows not Parallel to						
Infrastructure To Build	Transmission			X			
	Roads			X			
	Buildings			X			
	Maintenance			X			
	Daily Activity			X			
	Substation			X			
Increased Activity				X			
Totals				18			

Avian Species of Concern Checklist
(Complete prior to SPECIES OCCURRENCE & STATUS Checklist)

	Site											
Birds (n = 12)	Snowy Mtn. R.											
Occurrence	B	M/W	Σ	B	M/W	Σ	B	M/W	Σ	B	M/W	Σ
Nelson's Sharptailed Sparrow	X	X	2									
LeConte's Sparrow	X	X	2									
Baird's Sparrow	X	X	2									
Dickcissel	X		1									
Cassion's Kingbird	X		1									
Blackbacked Woodpecker	X		1									
Yellow-billed Cuckoo	X		1									
Peregrine Falcon	X		1									
Northern Goshawk		X	1									
Ferruginous Hawk		X	1									
Clark's Grebe	X		1									
Common Loon	X		1									
Subtotals	10	5	15									
		Total	15									

Bat Species Of Concern Checklist
(Complete prior to SPECIES OCCURRENCE & STATUS Checklist)

Bats (n = 2)	Site: Snowy Mtn. Range											
Occurrence	B	M/W	Σ	B	M/W	Σ	B	M/W	Σ	B	M/W	Σ
Fringed Myotis	X		1									
Spotted Bat	X		1									
Subtotals	2		2									
Total			2									

SPECIES OCCURRENCE & STATUS CHECKLIST

		Site											
Species		Snow Mtn. R.											
	Occurrence	B	M/W	Σ	B	M/W	Σ	B	M/W	Σ	B	M/W	Σ
Threatened & Endangered	Bald Eagle		X	1									
Candidate	Columbian Sharp-tailed Grouse	X	X	2									
Special Concern	Birds (max Σ=)			15									
	Bats (max Σ=)			2									
	Subtotals			20									
	Total			20									

ECOLOGICAL ATTRACTIVENESS CHECKLIST

Site

Ecological Attractor			Snowy Mtn. Range			
Migration Route	Local					
	Continental	N	X			
		S	X			
		E				
		W				
Ecological Magnets	Lotic System					
	Lentic System					
	Wetlands		X			
	Native Grassland		X			
	Forest		X			
	Food Concentrated					
	Energetic Foraging		X			
	Vegetation/ Habitat	Unique				
		Diverse	X			
Significant Ecological Event						
Site of Special Conservation Status						
Total			7			

POTENTIAL IMPACT INDEX

	Site							
Checklist (p)[1]	Σ	Σ/p	Σ	Σ/p	Σ	Σ/p	Σ	Σ/p
Physical (0.25) 15÷.25=60	15	60						
Species Occurrence & Status (0.63) 20÷.63=32	20	32						
Ecological (0.11) 7÷.11=64	7	64						
Totals	42	**156**						

[1]Proportion of total checklist categories.

Score is 156, compared to the highest reference site score of 244 (Figure 2).

Determining PII Score

A. Place the sums from each of the three checklists in the POTENTIAL IMPACT INDEX table sum boxes (Σ column) in the appropriate category.

B. Divide each checklist sum by the previously calculated divisor to adjust the sum for disproportionate numbers of conditions in each checklist, and place this adjusted sum in the Σ/p boxes for each checklist.

C. Add the Σ/p boxes for the three checklists to obtain a total score.

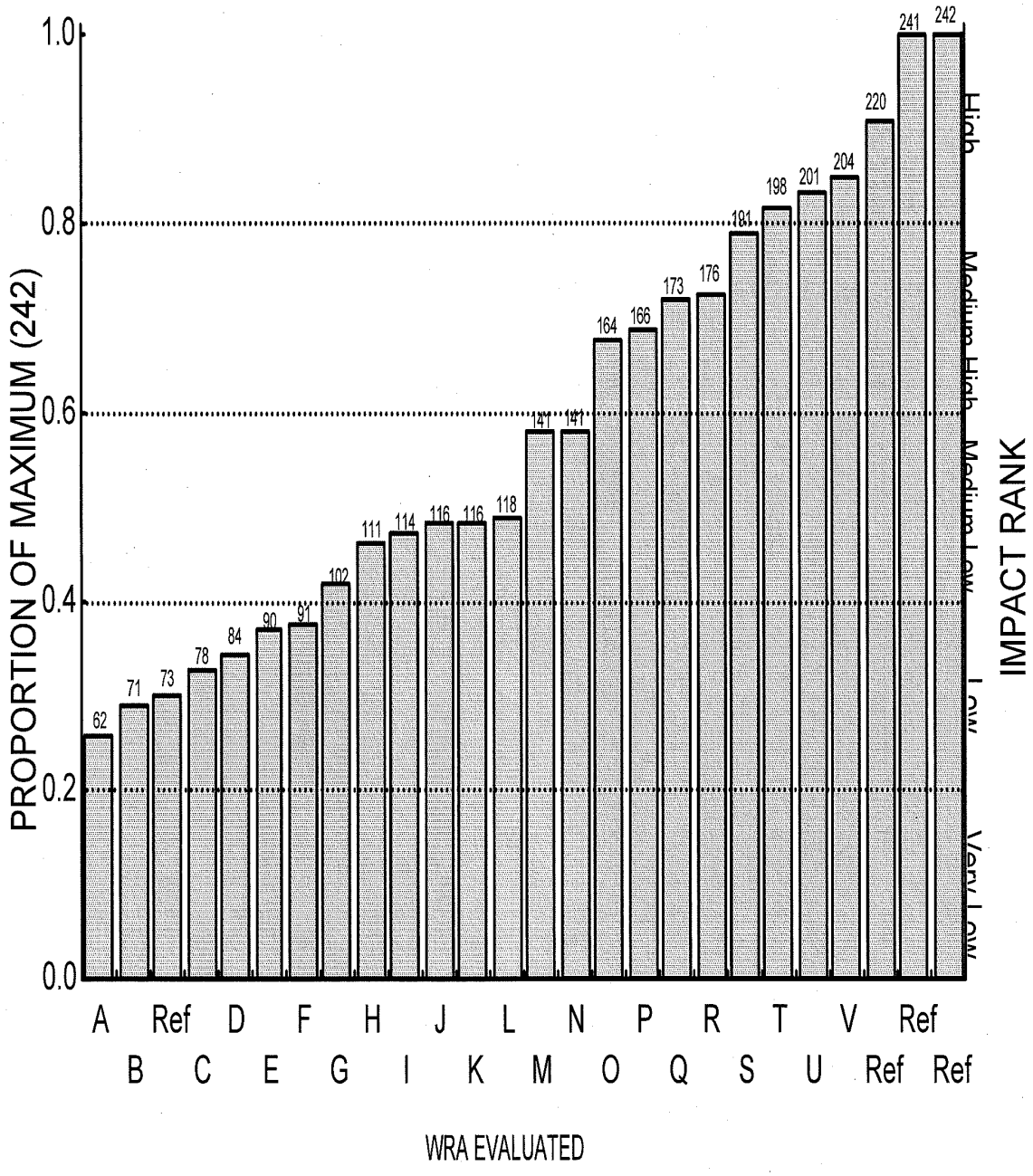


Figure 2. Impact ranks of proposed Wind Resource Areas in Montana. The number above each bar is the PII score. Rank is a function of the proportional relationship of proposed development sites to the maximum score of 4 Reference Sites evaluated.

Appendix 2

DEFINITIONS RELATED TO WIND ENERGY DEVELOPMENT AND EVALUATION

AGL: height above ground level in feet.

Breco Bird Scaring Buoy: a device developed to disperse seabirds at oil spills, which emits some 30 different sounds (including alert calls) up to 130 dB, generally effective in scaring birds at distances up to 200 yards, but may deter birds to 0.5 mile radius. The floating device can be used daytime or night, in fog, wind or storms.

Deterrent Devices: specific equipment, devices, or techniques which are intended to be seen or heard to alert and deter birds from contacting turbine towers, rotors, guy wires, or related equipment. These include diverters installed on turbine or meteorological tower guy wires, dark (e.g., black) paint on single turbine blades or portions of a blade, or noise-making devices that alert (e.g., infrasound) or frighten (e.g., Breco Buoys) birds.

Fish and Wildlife: any member of the animal kingdom, including any bird (including any migratory, non-migratory, or endangered bird for which protection is afforded), mammal, fish, amphibian, reptile, mollusk, crustacean, arthropod, or other invertebrate. Unless otherwise indicated, the Fish and Wildlife Service is particularly concerned about the impacts of wind turbines on birds and bats.

Flyway: a concentrated, predictable flight path of migratory bird species (e.g., particularly water birds such as ducks, geese, large waders, and shorebirds, but also raptors, and sometimes songbirds) from their breeding ground to wintering area. Except along coast lines, the flyway concept may not generally apply to songbirds because they tend to migrate in broad fronts rather than down specific flyways. The term "corridors" has sometimes been used. These frontal movements of songbirds can change within and between seasons and years – as can, for example, movements of waterfowl – making specific designations more difficult. The concept applies both biologically and administratively. For administrative purposes, for example, there are four waterfowl flyways (Atlantic, Pacific, Central, and Pacific and three shorebird flyways (East, Central, and Pacific). "Daily flyways" may also exist between roosting, breeding, and feeding areas.

Lek: A traditional site used year after year by males of certain species of birds (in North America, Greater and Lesser Prairie-chickens, Sage and Sharp-tailed grouse, and Buff-breasted Sandpiper), within which the males display communally to compete for female mates. Dominant males secure the majority of all the matings. Pair bonds are not formed; females leave to nest and raise the young, and males do not take part in parental care.

Passerines: a scientific term for the order of songbirds, many of which winter in tropical areas.

Precautionary Approach: a conservative, scientific approach to conserving and managing habitats and species. Absent definitive data, the approach suggests taking the best steps available to initiate appropriate conservation actions. Those actions should then be refined through the use of principles of adaptive management and sound science. The absence of complete or definitive scientific information should not be used as a reason for postponing or failing to take measures to conserve target species, associated or dependent species, or non-target species and their environments. Specifically, developers should apply a precautionary approach widely to conservation and management of birds, bats, other fauna, flora, and affected habitats. This will protect the resources and preserve Wind Resource Areas by taking account of the best scientific evidence available.

Reference Site: an area of high wildlife value which is used to evaluate the suitability of other areas for wind energy development. Reference sites are selected by biologists familiar with the wildlife in the geographic area and habitat types where wind energy development is contemplated, and evaluated using the Ranking Protocol in Appendix 1. The reference site having the highest score, i.e., the area where wind energy development would have the greatest negative impact on wildlife, is used as the standard against which potential wind energy development sites are ranked.

Riparian Area: The vegetation, habitats, or ecosystems that are associated with streams, rivers, or lakes, or are dependent upon the existence of perennial, intermittent, or ephemeral surface or subsurface water drainage. Relative to other habitats, riparian habitats have a disproportionately high wildlife value in the drier western states due to the

presence of surface water and/or lush vegetation that is typically surrounded by harsher, arid or semi-arid environments.

Rookery: the breeding place of a colony of gregarious birds (e.g., herons) or mammals (e.g., bats).

Rotor-swept Area: generally the vertical airspace within which the turbine blades (usually 3) rotate on a pivot point or drive train rotor. The Area will vary in location depending on the direction of the prevailing wind. While "slower" turbines may operate at speeds less than 30 revolutions per minute (RPMs), turbine speeds at the blade tips can still exceed 220 miles per hour in stiff winds. Recent studies indicate that birds appear unable to recognize blade presence at rotor tips during high blade speed, referred to as the "smear effect."

Staging Area: a traditional site where migratory birds of one or more species congregate in spring and fall for varying periods of time to forage and build up fat reserves prior to launching migratory flights. The term may be used on both the breeding and wintering grounds, as well as at intermediate stopover sites used at any point along the migration route.

Turbine Position within a Row/String: the specific position of a turbine within a string or row of turbines. It may be designated as an end-row, mid-row, or lone row turbine (one not located within a row).

Wind Resource Area: the geographic area or footprint within which wind turbines are located and operated, such as the Altamont Pass, California, WRA, or where location and operation of turbines are anticipated. The term may be used to describe an existing facility, or a general area in which development of a facility is proposed. Existing facilities are known variously as "wind farms," "wind parks," or "energy parks." WRAs are selected based primarily on the reliability and availability of sufficient wind. These areas are designated by the *United States Wind Resource Map*, published by the National Renewable Energy Laboratory, Department of Energy (http://rredc.nrel.gov). The *Map* delineates wind power classifications from "marginal" to "superb" based on a Weibull wind speed index.

Appendix 3

WILDLIFE LAWS RELEVANT TO WIND POWER DEVELOPMENT PROJECTS

The Migratory Bird Treaty Act (16 U.S.C. 703-712; MBTA), which is administered by the Fish and Wildlife Service (FWS), is the cornerstone of migratory bird conservation and protection in the United States. The MBTA implements four treaties that provide for international protection of migratory birds. It is a strict liability statute wherein proof of intent is not an element of a taking violation. Wording is clear in that most actions that result in a "taking" or possession (permanent or temporary) of a protected species can be a violation. Specifically, the MBTA states:

"Unless and except as permitted by regulations ... it shall be unlawful at any time, by any means, or in any manner to pursue, hunt, take, capture, kill ... possess, offer for sale, sell ... purchase ... ship, export, import ... transport or cause to be transported ... any migratory bird, any part, nest, or eggs of any such bird ... (The Act) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior." The word "take" is defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect."

A 1972 amendment to the MBTA resulted in inclusion of Bald Eagles and other birds of prey in the definition of a migratory bird. The MBTA provides criminal penalties for persons who, by any means or in any manner, pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export, any migratory bird (including Bald Eagles) as well as possessing Bald Eagles, their parts, nests, or eggs without a permit. A violation of the MBTA by an individual can result in a fine of up to $15,000, and/or imprisonment for up to 6 months, for a misdemeanor, and up to $250,000 and/or imprisonment for up to 2 years for a felony. Fines are doubled for organizations. Penalties increase greatly for offenses involving commercialization and/or the sale of migratory birds and/or their parts. Under authority of the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d; BGEPA), Bald and Golden Eagles are afforded additional legal protection. Penalties for violations of the BGEPA are up to $250,000 and/or 2 years imprisonment for a felony, with fines doubled for an organization.

While these Acts have no provision for allowing unauthorized take, the FWS realizes that some birds may be killed even if all reasonable measures to avoid the take are implemented. The FWS Office of Law Enforcement carries out its mission to protect migratory birds not only through investigations and enforcement, but also through fostering relationships with individuals, companies, and industries who seek to eliminate their impacts on migratory birds. Unless the activity is authorized, it is not possible to absolve individuals, companies, or agencies from liability even if they implement avian mortality avoidance or similar conservation measures. However, the Office of Law Enforcement focuses on those individuals, companies, or agencies that take migratory birds with disregard for their actions and the law, especially when conservation measures have been developed but are not properly implemented.

The Endangered Species Act (16 U.S.C. 1531-1544; ESA) was passed by Congress in 1973 in recognition that many of our Nation's native plants and animals were in danger of becoming extinct. The purposes of the Act are to protect these endangered and threatened species and to provide a means to conserve their ecosystems. To this end, Federal agencies are directed to utilize their authorities to conserve listed species, as well as "Candidate" species which may be listed in the near future, and make sure that their actions do not jeopardize the continued existence of these species. The law is administered by the Interior Department's FWS and the Commerce Department's National Marine Fisheries Service (NMFS). The FWS has primary responsibility for terrestrial and freshwater organisms, while the NMFS has responsibility for marine species such as whales and salmon. These two agencies work with other agencies to plan or modify Federal projects so that they will have minimal impact on listed species and their habitats. Protection of species is also achieved through partnerships with the States, with Federal financial assistance and a system of incentives available to encourage State participation. The FWS also works with private landowners, providing financial and technical assistance for management actions on their lands to benefit both listed and non-listed species.

Section 9 of the ESA makes it unlawful for a person to "take" a listed species. Take means ". . . to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct." The Secretary

of the Interior, through regulations, defined the term "harm" as "an act which actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering." However, permits for "incidental take" can be obtained from the FWS for take which would occur as a result of an otherwise legal activity, such as construction of wind turbines, and which would not jeopardize the species.

Section 10 of the ESA allows for the development of "Habitat Conservation Plans" for endangered species on private lands. This provision is designed to assist private landowners in incorporating conservation measures for listed species with their land and/or water development plans. Private landowners who develop and implement an approved habitat conservation plan can receive an incidental take permit that allows their development to go forward.

The National Environmental Policy Act of 1969 (42 U.S.C. 4371 et seq.; NEPA) requires that Federal agencies prepare an environmental impact statement (EIS) for Federal actions significantly affecting the quality of the human environment. "Federal Actions" are those actions in which a Federal agency is conducting the activity, providing funding for the activity, or licensing or permitting the activity. An EIS must describe the proposed action, present detailed analyses of the impacts of the proposed action and alternatives to that action, and include public involvement in the decision making process on how to proceed to accomplish the purpose of the action. The purpose of NEPA is to allow better environmental decisions to be made. The Council on Environmental Quality, established by NEPA, has promulgated regulations in 40 CFR 1500-1508 that include provisions for 1) preparing EISs and Environmental Assessments, 2) considering categorical exclusions from NEPA documentation requirements for certain agency actions, and 3) developing cooperating agency agreements between Federal agencies.

Other Federal agencies may be required by NEPA to review and comment on proposed activities as a cooperating agency with the action agency under Section 1501.6, or because of a duty to comment on federally-licensed activities for which the agency has jurisdiction by law (Section 1503.4). For the FWS, this would be the MBTA and BGEPA. Other agencies may also be called on for review and comment because of special expertise.

The National Wildlife Refuge System Administration Act (16 U.S.C. 668dd), as amended, serves as the "organic act" for the National Wildlife Refuge System. It consolidates the various categories of lands administered by the Secretary of the Interior (Secretary) through the FWS into a single National Wildlife Refuge System. The Act establishes a unifying mission for the Refuge System, a process for determining compatible uses of refuges, and a requirement for preparing comprehensive conservation plans. The Act states first and foremost that the mission of the National Wildlife Refuge System will be focused singularly on wildlife conservation.

The Act identifies six priority wildlife-dependent recreation uses; clarifies the Secretary's authority to accept donations of money for land acquisition; and places restrictions on the transfer, exchange, or other disposal of lands within the Refuge System. Most importantly, the Act reinforces and expands the "compatibility standard" of the Refuge Recreation Act, authorizing the Secretary, under such regulations as he may prescribe, to "permit the use of any area within the System for any purpose, including but not limited to hunting, fishing, public recreation and accommodations, and access whenever he determines that such uses are compatible with the major purposes for which such areas were established." This section applies to any proposed development of wind energy on Refuge System lands; such development must be compatible with the major purpose for which that Refuge was established.

The National Historic Preservation Act of 1966 (16 U.S.C. 470-470b, 470c-470n) approved October 15, 1966 and repeatedly amended, provides for preservation of significant historical features (buildings, objects, and sites) through a grant-in-aid program to the States. It established a National Register of Historic Places and a program of matching grants under the existing National Trust for Historic Preservation (16 U.S.C. 468-468d). The Act also requires Federal agencies to take into account the effects of their actions on items or sites listed or eligible for listing in the National Register. Thus, the Act functions similarly to NEPA, requiring a determination of the presence of any such items or sites, and an evaluation of the effects of proposed developments (such as wind energy facilities) on them, if the facility would be built, funded, licensed or permitted by a Federal agency. This includes State lands purchased or improved with Federal Aid in Wildlife Restoration funds.

Appendix 4

RESEARCH NEEDS ON THE IMPACTS OF WIND POWER DEVELOPMENT ON WILDLIFE

Representatives of the Fish and Wildlife Service's Wind Turbine Siting Working Group have suggested the following research needs:

- Effects of inclement weather in attracting birds and bats to lighted turbines, e.g., drawing birds and bats to within rotor-swept area of turbines, particularly for passerines during spring and fall migrations.

- Localized effects of turbines on wildlife: habitat fragmentation and loss; effects of noise on both aquatic and terrestrial wildlife; habituation.

- Effects of wind turbine string configuration on mortality, e.g., end of row turbine effect, turbines in dips or passes or draws, setbacks from rim/cliff edges.

- Effectiveness of deterrents: alternating colors on blades (particularly, effect of black/white and UV gel coats on the smear effect); lights (e.g., color, duration, and intensity of pilot warning lights; lasers); infrasound (Breco Buoys, other noisemakers such as predator and distress calls if not irritating to humans, other wildlife, or domestic animals); visual markers on guy wires.

- Utility of acoustic, infrared, and radar technologies to detect bird species presence, abundance, location height, and movement.

- Accuracy of mortality counts: estimate of the number of carcasses (especially of passerines) lost because they have been fragmented and lost to collision momentum and the wind; size and shape of dead bird search areas; possibility of recording collisions acoustically or with radar or infrared monitoring.

- Annual variability (temporal and spatial) in migratory pathways; what is the utility of Geographic Information System to assess migratory pathways and stopovers, particularly for passerines and bats.

- Effectiveness of seasonal wind turbine shutdowns at preventing mortalities, including the feasibility of using "self-erecting" turbines that are easily erected and dismantled without cranes, and taking them down during critical periods such as migrations.

- Impacts of larger turbines versus smaller models.

- Changes in predator-prey relationships due to placing potential perching sites in prairie habitats.

Appendix 5

PROCEDURES FOR ENDANGERED SPECIES EVALUATIONS AND CONSULTATIONS

The Endangered Species Act (ESA) directs all Federal agencies to participate in endangered species conservation. Specifically, section 7(a)(1) of the ESA charges Federal agencies to aid in the conservation of listed species. Section 7 (a)(2) requires Federal agencies to consult with the Fish and Wildlife Service (FWS) to ensure that actions that they fund, authorize, permit, or otherwise carry out will not jeopardize the continued existence of any listed species or adversely modify designated critical habitats. The FWS has developed a handbook describing the consultation process in detail. It is available on the FWS web site at http://endangered.fws.gov/consultations. Consultation may be informal or formal, depending upon the presence of listed species and the potential for the proposed project to affect them.

Before initiating an action, the Federal action agency (the agency authorizing a specific action) or its non-Federal permit applicant, must ask the FWS to provide a list of threatened, endangered, proposed, and candidate species and designated critical habitats that may be present in the project area. This initiates the informal consultation process. If the FWS answers that no species or critical habitats are present, then the Federal action agency or permit applicant has no further ESA obligation under section 7(a)(2), and consultation is concluded. If listed species or critical habitats are present, then the action agency or applicant must determine whether the project may affect those species (known as a *may affect* determination), and informal consultation continues. If the action agency or applicant determines, and the FWS agrees, that the project does not adversely affect any listed species, then the consultation is concluded and the decision is put in writing.

If the action agency or applicant determines that a project *may adversely affect* a listed species or designated critical habitat, the action agency/applicant prepares a *Biological Assessment* and requests formal consultation. There is a designated period of time in which to consult (90 days), and beyond that, another set period of time for the FWS to prepare a *biological opinion* (45 days). An analysis of whether or not the proposed action would be likely to jeopardize the species or adversely modify its critical habitat is determined in the biological opinion. If a *jeopardy* or *adverse modification* determination is made, the biological opinion must identify any reasonable and prudent alternatives that could allow the project to move forward.

The biological opinion will contain an "incidental take statement." "Take" is defined as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting or attempting to engage in any such conduct. "Harm" is further defined to include significant habitat modification or degradation that results in death or injury to a listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. "Incidental take" is defined as take that is incidental to, and not the purpose of, an otherwise lawful activity. If the FWS issues a *jeopardy* opinion, the incidental take statement will simply state that no take is authorized. If the FWS issues a nonjeopardy opinion, the FWS will anticipate the take that may result from the proposed project and describe that take in the incidental take statement. The statement will contain clear terms and conditions designed to reduce the impact of the anticipated take to the species; these terms are non-discretionary on the action agency or applicant.

When non-Federal activities will result in take of threatened or endangered species, an *incidental take permit* is required under section 10 of the ESA. A habitat conservation plan or "HCP" must accompany an application for an incidental take permit. The habitat conservation plan associated with the permit is to ensure that there are adequate conservation measures to avoid jeopardy to the species.

Examples:

1. **No Effect** – The appropriate conclusion when the action agency or applicant determines that its proposed action will not affect a listed species or designated critical habitat.

   Example: A permit applicant contacts the FWS to request information on listed species. The FWS provides a species list containing 3 plants, 1 fish, and 1 butterfly. The proposed project would be constructed at an upland site on clay soils. The 3 plants are found only on sandy soils. The butterfly's habitat is one of the plants on sandy soil. The nearest sandy soils are 10 miles from the proposed project. The fish is in a stream 5 miles from the proposed project. Conclusion: No effects from the project, either

direct or indirect. Justification: No construction is proposed in listed species habitat or in an area that may affect listed species. In addition, the project proponent has charted a route for heavy equipment moving onto the construction site that avoids listed species habitat.

2. **May Affect, but Not Likely to Adversely Affect** – The appropriate conclusion when effects on listed species are expected to be discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects to the species. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those extremely unlikely to occur. Based on best judgment, a person would not (a) be able to meaningfully measure, detect, or evaluate insignificant effects, or (b) expect discountable effects to occur.

   Example: The applicant contacts the FWS to request information on listed species. The FWS provides a species list containing 2 birds and 1 fish. The proposed project would be constructed at an upland site, 200 yards from the stream (fish habitat) and adjoining riparian vegetation (bird habitat). The migratory birds use the riparian vegetation to nest between April 15 and August 15. The uplands are highly erodible soils. The project proponent agrees not to construct during the nesting season. He flags the riparian vegetation to indicate an avoidance zone and installs silt fencing between the riparian vegetation and the construction site. He states that he will plant the disturbed soils surrounding the project with native vegetation after construction. He also agrees to monitor the vegetation planted for 3 years to assure that it establishes sufficiently to prevent any additional erosion in the project area caused by construction. Conclusion: Although the project proponent is working in very close proximity to listed species habitat, the action is not likely to adversely affect listed species. Justification: The proponent has incorporated sufficient avoidance and other mitigation measures into the project that any effects to listed species would be discountable. The project proponent prepares a Biological Assessment that includes a complete description of the project, all proposed avoidance and other mitigation measures, and the resulting effects of the project on the listed species. The Biological Assessment is sent to the FWS to request concurrence that the project is not likely to adversely affect listed species.

3. **May Affect, and Likely to Adversely Affect** – The appropriate finding in a Biological Assessment (or conclusion during informal consultation) if any adverse effect to listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable, insignificant, or beneficial. In the event the overall effect of the proposed action is beneficial to the listed species, but is also likely to cause some adverse effects, then the proposed action "is likely to adversely affect" the listed species. If incidental take is anticipated to occur as a result of the proposed action, an "is likely to adversely affect" determination should be made. This determination requires the initiation of formal section 7 consultation.

   Example: The applicant contacts the FWS to request information on listed species. The FWS provides a species list containing 10 birds. The proposed project would be constructed at an upland site within a significant migratory bird corridor that is utilized by the 10 listed birds. Construction will permanently alter the character of the corridor and will likely cause take of listed birds every year during the migration periods. Conclusion: Formal consultation will be required. The project proponent prepares a Biological Assessment to submit to the action agency to accompany their request to initiate formal consultation. Justification: The project is likely to cause take of listed birds every year during their migration periods.

Appendix 6

GUIDELINES FOR CONSIDERING WIND TURBINE SITING ON EASEMENT LANDS ADMINISTERED AS PART OF THE NATIONAL WILDLIFE REFUGE SYSTEM IN REGION 6

Grassland easements are acquired to protect native and planted grasslands essential for grassland dependent migratory birds and other wildlife. Healthy grasslands provide both nesting and migration habitat necessary to maintain these important populations. Wind energy could severely impact this important program if not developed carefully with as little impact to migratory birds and their habitat as possible.

The following guidelines are to be used when making compatibility determinations for the siting of wind turbines and associated facilities on lands encumbered by U.S. Fish and Wildlife Service (Service) grassland easements and USDA conservation easements administered by the Service in Region 6, particularly in North Dakota, South Dakota, and Montana. These guidelines are intended to provide guidance for considering compatibility determinations during the period while the Service and the wind power industry monitor potential impacts to migratory birds as a result of turbine construction, maintenance, and operation. The following guidelines will be incorporated into rights-of-way permits issued for the construction of turbines, access roads, and other associated activities necessary to make the turbines operational. The intention of these guidelines is to minimize impacts to migratory birds and protect the habitat covered by the easement. The guidelines pertain only to permits issued for the alteration or destruction of grassland habitat as a result of turbine and other associated construction on lands encumbered by Service easements.

Refuge Managers and Wetland District Managers shall use these guidelines for site-by-site consideration of compatibility determinations for individual right-of-way requests for wind turbines on easement lands. These guidelines may be incorporated as needed as right-of-way or permit stipulations.

These guidelines may be revised and modified as a result of the findings of research and monitoring conducted in the future. Wind turbine rights-of-way applications will be reviewed according to these guidelines in conjunction with the Service's compatibility policy and in accordance with 50 CFR 29.21 and the Service Realty Manual. Future right-of-way applications will be reviewed using the guidelines in effect at the time of application. The Service will not make changes to previously issued rights-of-way or easement permits issued under these guidelines.

1) The Service may permit up to one turbine per 160 acres on an individual easement tract. No more than one turbine may be allowed on an individual easement tract of less than 160 acres. Current biological information (Attachment 2) indicates that this density of turbines would not have any significant impact to grassland habitat and its value to migratory birds or other wildlife. This is the upper limit for the density of turbines on easements. However, consideration may be given to clump or consolidate towers within an easement tract(s) to minimize the disturbance to the remaining habitat, i.e., two turbines may be clumped on a tract of 320 acres. Information available at this time indicates that turbine densities at this level will not materially interfere with or detract from the purposes of the easement (Attachment 2). Wind power industry turbine spacing recommendations are 2,000 feet between wind turbines and 2,000 feet from an occupied building. This constraint may limit the ability to clump turbines.

2) Turbines shall not be constructed in wetlands, including lakes, ponds, marshes, sloughs, swales, swamps, or potholes. Similarly, turbine locations should avoid obvious "duck passes" between large (20 acres or greater), semi-permanent (type 4, or cattail/bulrush) wetlands or sloughs. In addition, known migratory bird corridors or flight paths and environmentally sensitive areas such as colonial bird nesting areas or upland game bird leks, should be avoided.

3) Siting recommendations made by the Service for turbines and access roads and turbine lighting recommendations shall be consistent with all general siting and mitigating measures for tower and transmission line construction (Director's September 14, 2000 memorandum, attachment 3, APLIC 1996, and APLIC 1994).

4) Priority should be given to siting turbines on tame, planted, or seeded grasslands in preference to unbroken native prairie when such options are available on a given easement tract.

5) Spoil material from the excavated turbine pad shall not be deposited in wetlands and must be stored or deposited off easement lands using established roads to transport the material off site.

6) Turbines shall be sited as close to existing roads or the edge of the grassland tract as practical. Disturbance of grassland to construct and maintain a wind turbine shall be done in such a manner as to minimize the destruction or alteration of the habitat. Use of existing roads as a means of accessing a turbine within protected habitats is strongly encouraged. Conservation measures shall be used to avoid the impacts of erosion and sedimentation in order to protect grasslands and wetlands during the construction of the access road. Buried transmission lines, electric lines, and other cables shall be co-located on the access road when practical. Turbine construction should be encouraged to occur outside the breeding season for migratory birds when practical.

7) Regardless of a Service permit the developer is responsible for adhering to all local, state, and federal regulations in siting turbine location and construction. In the event that location and construction criteria conflict between the various levels of government, the criteria providing the maximum protection to the habitat shall be the criteria used during turbine location and construction.

8) In the event that a turbine is no longer utilized for power generation and has been abandoned for that purpose, the turbine owner shall remove the turbine at his/her own expense from the easement tract. The turbine site and associated facilities shall be reclaimed by the turbine owner by planting these areas to a grass mixture consistent with the surrounding grassland or such mixture as is mutually agreed upon by the Service and the turbine owner.

9) The turbine owner must update bird strike avoidance equipment on turbines and implement techniques that reduce the disturbance to nesting birds at turbine sites as future research and evaluation by the Service and the industry indicate.

These guidelines provide flexibility for the Service Refuge Manager in evaluating compatibility determinations and to negotiate with the energy company and the easement landowner to allow wind turbine development consistent with the purposes of the conservation easements. Where development is found to be compatible with easement purposes the guidelines will be used to negotiate siting, lighting, and other restrictions to grant rights-of-way and easement permits for wind turbines.

References:

Avian Power Line Interaction Committee (APLIC). 1994. Mitigating bird collisions with power lines: The state of the art in 1994.

Avian Power Line Interaction Committee (APLIC). 1996. Suggested practices for raptor protection on power lines: the state of the art in 1996.

Attachment 2

Potential Effect of Wind Turbine Presence on Numbers of Breeding Grassland Birds and Nesting Ducks on Grassland Easement Properties in North and South Dakota.

Ron Reynolds, Project Leader, Habitat And Population Evaluation Team, Bismarck, North Dakota.
Neal Niemuth, Biologist, Habitat And Population Evaluation Team, Bismarck, North Dakota

Recently, companies that develop wind-powered electricity generation have begun operations in areas of South Dakota and North Dakota where the U.S. Fish and Wildlife Service has purchased or intends to purchase conservation easements on grasslands. Questions have been raised within the FWS as to whether the placement of wind towers on easement tracts would violate terms of the easement contract, and whether the Service would consider purchasing easements on lands after towers are in place. Before allowing turbines on easement lands, the Service must address the issue of whether placement of wind turbines on grassland easements is compatible with the

goals and purpose of refuge lands as defined by the Refuge Improvement Act, which states that, "A Compatible use means . . . any other use of a National Wildlife Refuge that, based on sound professional judgment, will not materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission or the purposes(s) of the National Wildlife Refuge." If birds avoid the area surrounding wind turbines because of noise, disruption of habitat, or disturbance, the biological value of an easement may be compromised. At this time, we do not know if wind turbines are compatible with the purpose of grassland easements, because we do not know if turbines reduce the attractiveness of a site to birds or if turbines affect avian reproductive success. The issue is complicated partly because, if, the FWS restricts certain alternative uses on easements, this may reduce the willingness of landowners to offer to sell easements to the FWS in the future. For example, some landowners believe the potential income derived from wind generators will exceed the income from selling grass easements to the FWS or other conservation organizations. In this respect, the future success of the easement program could be compromised if these restrictions are unnecessary.

Little is known about bird avoidance of grasslands near wind turbines, as previous avian research at wind towers has focused primarily on bird strikes. In one study that did consider avoidance, density of grassland birds was reduced in the immediate vicinity of wind turbines at Buffalo Ridge, Minnesota, (Leddy et al. 1999), although at larger scales no differences were detected (Johnson et al. 2000). However, in the Buffalo Ridge study, wind turbines were placed primarily in Conservation Reserve Program fields with few wetlands and much higher densities of breeding birds than are typically found in native prairie where grassland easements are targeted in the Dakotas, and therefore results from Leddy et al. (1999) may not be applicable here. In the absence of specific data on the effect of wind turbines on birds in North and South Dakota, we used two approaches to assess the potential impact; 1) existing data (Igl and Johnson 1997, D. H. Johnson, unpublished data) was used to estimate the potential impact of wind turbine placement on grassland bird use in quarter-section (160 acre) parcels, and 2) a Mallard productivity model (Cowardin et al. 1988) was used to predict changes in nesting and recruitment rate of ducks on grassland areas with wind turbines in place.

Grassland birds. For the first assessment, abundance of grassland birds, standardized to 160 acres of grassland habitat, was estimated from data gathered on 128 quarter sections in North Dakota during summers of 1992 and 1993 (Igl and Johnson 1997, D. H. Johnson, unpublished data). We estimated the potential impact of wind turbines at two scales representing a five-acre and two-acre loss of habitat for each wind tower, with one wind tower per quarter section. We estimated the two-acre potential area of impact as approximately 4 times the area of road and tower pad (Appendix 1); the five-acre area of impact was estimated using the 80-m reported zone of reduced bird density surrounding towers at Buffalo Ridge (Leddy et al. 1999, Appendix 1). For purposes of our analysis, we assumed that no grassland birds would be present in the area immediately surrounding the tower, which is a worst-case scenario, because (Leddy et al. 1999) showed that birds are present immediately adjacent to turbines, but at reduced densities. Thus, our methods guaranteed we would predict a reduction in birds using easements, however, our intent was to put this change into perspective relative to bird use on the entire easement. Given the high variance associated with the grassland bird data we used, it would be impossible to detect a statistically significant decrease in grassland bird numbers, because the lower 95% confidence limit for population estimates was less than zero for each species (D. H. Johnson, unpublished data). Therefore, we estimated the impact of tower presence by calculating the density of each grassland bird species per 160-acre tract, and then calculating the mean reduction in the number of pairs if 2 acre and 5 acre areas of habitat were considered as unused (Table 1).

Expected reductions were estimated at approximately 1% and 3% of the number of individuals present for each species. As expected, greatest reductions in number of pairs occurred with common species such as the chestnut-collared longspur and horned lark; where, at the 5 acres level, a reduction of less than 1 pair per 160-acre tract would be expected. For all species combined, we estimated the expected maximum reduction would be about 2 pairs per 160 acre area, or about 3 percent of the total population. As mentioned previously, based on variation observed in the existing data set, these levels of change would not be statistically significant. Additionally, because we would expect some bird use of the area near the tower, the actual change would likely be less than the numbers presented in table 1.

Table 1. Mean number of breeding pairs of grassland birds found per 160 acres of grassland and expected reduction in pairs with loss of 5 acres and 2 acres of habitat. Data based on surveys of 128 160-acre parcels in North Dakota during summers of 1992 and 1993 (Igl and Johnson 1997, D. H. Johnson, unpublished data).

	Mean Number (pairs)		Mean Reduction (pairs)	
Species	1992	1993	5 acre	2 acre
Baird's Sparrow	1.424	2.464	0.06075	0.0243
Bobolink	0.336	0.784	0.0175	0.007

Brewer's Sparrow	0	0	0	0
Brown-headed Cowbird	2.88	3.632	0.10175	0.0407
Chestnut-collared Longspur	15.584	19.696	0.55125	0.2205
Clay-colored Sparrow	2.08	1.92	0.0625	0.025
Common Yellowthroat	0.144	0.112	0.004	0.0016
Dickcissel	0.304	0.32	0.00975	0.0039
Ferruginous Hawk	0.032	0.24	0.00425	0.0017
Field Sparrow	0.24	0	0.00375	0.0015
Grasshopper Sparrow	6.368	8.928	0.239	0.0956
Gray Catbird	0	0	0	0
Gray Partridge	0.16	0.128	0.0045	0.0018
Horned Lark	6.88	12.544	0.3035	0.1214
Killdeer	0.544	0.848	0.02175	0.0087
Lark Bunting	8.416	4.16	0.1965	0.0786
Lark Sparrow	0.448	0.128	0.009	0.0036
Le Conte's Sparrow	0	0.192	0.003	0.0012
Northern Harrier	0.304	0.512	0.01275	0.0051
Red-winged Blackbird	1.616	1.248	0.04475	0.0179
Ring-necked Pheasant	0.16	0.368	0.00825	0.0033
Savannah Sparrow	1.184	2.144	0.052	0.0208
Sedge Wren	0.16	0	0.0025	0.001
Sharp-tailed Grouse	0.432	0.464	0.014	0.0056
Sharp-tailed Sparrow	0.032	0	0.0005	0.0002
Short-eared Owl	0.032	0.032	0.001	0.0004
Sprague's Pipit	0.256	0.576	0.013	0.0052
Swainson's Hawk	0.032	0.16	0.003	0.0012
Upland Sandpiper	1.52	1.552	0.048	0.0192
Vesper Sparrow	1.312	0.976	0.03575	0.0143
Western Meadowlark	7.088	11.184	0.2855	0.1142
SUM	**59.97**	**75.31**	**2.11**	**0.85**

Ducks. To assess the impact of wind turbines on ducks, we used the Mallard Productivity Model (Cowardin et al. 1988). The Mallard Model is particularly useful for this exercise because it allowed us to predict any "net" change in nest site selection and recruitment that might occur as a result of simulating the reduction of grasslands available to nesting hens due to the placement of wind turbines. For example, if grassland availability is reduced as a result of disturbance, displaced hens may select other habitat types (e.g., cropland, hayland etc.) in the area for nesting, or they may elect to nest elsewhere in the grasslands protected by easement. If other habitats are selected, this could result in reduced recruitment because, most other habitats are characterized by lower nest success compared to grass habitats. However, if these hens select nest sites in the remaining grasslands outside the influence of the wind turbines, nest success will not change materially and recruitment rate will be the same with-or-without turbines. For this exercise, we selected six study areas from Four Square Mile plots used for breeding population and production surveys (Cowardin et al. 1995) in the Kulm Wetland Management District in North Dakota. Plots were selected that had ≥160 acres of grassland in one unit, and were accessible to ≥60 breeding duck pairs (≥12 mallard pairs) based on the "thunderstorm map" (HAPET 2000) for North Dakota. These criteria are consistent with those used by FWS Realty Office, Bismarck, ND for focusing grassland easements, and the Kulm WMD is representative of areas where the grassland easement program is being targeted. For the purpose of our assessment, all grasslands on study plots selected were treated as protected by easement. This was done to obtain sample acreage similar to easement acreage being purchased. We ran the model on plots with-and-without wind turbines in place and compared the response by mallard hens. The area of influence for turbines was set at 5 acres and was converted to barren habitat which simulated eliminating all nesting activity in that area. To reduce variability, and thus increase the precision of our estimates we conducted eight model runs (1000 hens each) and then scaled the average results to the estimated mallard population on each study plot.

Neither nests initiated or recruitment rates differed significantly between treatment and control model runs (Table 2). The variation shown in nests initiated and recruitment rate between treatment and control runs is due to variation inherent in the biological system being examined. The model predicts that hens displaced by the presence of wind turbines will select nesting sites in the remaining available grass habitat and that recruitment rates will not be influenced.

Summary. Using data collected in North Dakota and South Dakota for grassland birds and ducks, we were able to estimate the magnitude of change that would likely be observed if similar data were collected on grassland easement properties. For some species of grassland birds that have restricted distributions the changes predicted could be underestimated on some sites, but it is unlikely these would be of a different order of magnitude. For ducks, the changes predicted account for differences in geographic distribution. Based on our assessment, the expected impact of wind turbines on grassland nesting species would be negligible with the density of one turbine per 160 acre area.

Table 2. Mallard nests initiated and recruitment rate estimates on six study plots with-and-without wind turbines, based on Mallard Model predictions. ( ) standard errors.

	Without Wind Turbines					With Wind Turbines			
Study plot	Pop. Estimate	Grass Acres	Init. Nests	Recr. Rate	SE	No. Turbines	Init.Nests	Recr. Rate	SE
153	55	761	21	0.67	(.0115)	2	21	0.64	(.0090)
178	60	205	14	0.53	(.0094)	1	13	0.52	(.0064)
329	45	1496	59	0.57	(.0055)	3	59	0.59	(.0124)
330	35	1810	51	0.55	(.0163)	8	52	0.55	(.0118)
331	26	1310	18	0.62	(.0104)	2	18	0.59	(.0120)
332	70	1312	58	0.58	(.0166	2	60	0.58	(.0072)

LITERATURE CITED

Cowardin, L. M., D. H. Johnson, T. L. Shaffer, and D. L. Sparling. 1988. Applications of a simulation model to decisions in mallard management. U. S. Fish and Wildlife Service Technical Report 17.

Cowardin, L. M., T. L. Shaffer, and P.M. Arnold. 1995. Evaluation of Duck habitat and estimation of duck population sizes with a remote-sensing-based system. Biological Science Report 2.

Igl, L. D., and D. H. Johnson. 1997. Changes in breeding bird populations in North Dakota: 1967 to 1992-1993. Auk 114:74-92.

Johnson, G. D., W. P. Erickson, M. D. Strickland, M. F. Shepherd, and D. A. Shepherd. 2000. Avian monitoring studies at the Buffalo Ridge, Minnesota Wind Resource Area: results of a 4-year study. Western Ecosystems Technology, Inc. Cheyenne, Wyoming. 262pp.

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 111:100-104.

APPENDIX 1. Calculations of potential area of impact for wind towers on grassland easements in North Dakota and South Dakota.

Two-acre impact:

40 foot by 40 foot pad for tower		1,600 ft^2
16.5 foot by 1320 foot access road		21,780 ft^2
	total	23,380

Physical disruption of site is approximately 0.54 acre; we multiplied this by four to estimate a zone of potential impact.

Five-acre impact:
80-m zone of reduced density surrounding tower
80 m * 80 m * 3.14 — 2.0 ha
~ 2.5 acres per ha — 5.0 acres

Attachment 3

Memorandum

To: Regional Directors, Regions 1-7

From: Director

Subject: Service Guidance on the Siting, Construction, Operation and Decommissioning of Communications Towers

Construction of communications towers (including radio, television, cellular, and microwave) in the United States has been growing at an exponential rate, increasing at an estimated 6 percent to 8 percent annually. According to the Federal Communication Commission=s *2000 Antenna Structure Registry*, the number of lighted towers greater than 199 feet above ground level currently number over 45,000 and the total number of towers over 74,000. By 2003, all television stations must be digital, adding potentially 1,000 new towers exceeding 1,000 feet AGL.

The construction of new towers creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. Communications towers are estimated to kill 4-5 million birds per year, which violates the spirit and the intent of the Migratory Bird Treaty Act and the Code of Federal Regulations at Part 50 designed to implement the MBTA. Some of the species affected are also protected under the Endangered Species Act and Bald and Golden Eagle Act.

Service personnel may become involved in the review of proposed tower sitings and/or in the evaluation of tower impacts on migratory birds through National Environmental Policy Act review; specifically, sections 1501.6, opportunity to be a cooperating agency, and 1503.4, duty to comment on federally-licensed activities for agencies with jurisdiction by law, in this case the MBTA, or because of special expertise. Also, the National Wildlife Refuge System Improvement Act requires that any activity on Refuge lands be determined as compatible with the Refuge system mission and the Refuge purpose(s). In addition, the Service is required by the ESA to assist other Federal agencies in ensuring that any action they authorize, implement, or fund will not jeopardize the continued existence of any federally endangered or threatened species.

A Communication Tower Working Group composed of government agencies, industry, academic researchers and NGO=s has been formed to develop and implement a research protocol to determine the best ways to construct and operate towers to prevent bird strikes. Until the research study is completed, or until research efforts uncover significant new mitigation measures, all Service personnel involved in the review of proposed tower sitings and/or the evaluation of the impacts of towers on migratory birds should use the attached interim guidelines when making recommendations to all companies, license applicants, or licensees proposing new tower sitings. These guidelines were developed by Service personnel from research conducted in several eastern, midwestern, and southern States, and have been refined through Regional review. They are based on the best information available at this time, and are the most prudent and effective measures for avoiding bird strikes at towers. We believe that they will provide significant protection for migratory birds pending completion of the Working Group=s recommendations. As new information becomes available, the guidelines will be updated accordingly.

Implementation of these guidelines by the communications industry is voluntary, and our recommendations must be balanced with Federal Aviation Administration requirements and local community concerns where necessary. Field

offices have discretion in the use of these guidelines on a case by case basis, and may also have additional recommendations to add which are specific to their geographic area.

Also attached is a Tower Site Evaluation Form which may prove useful in evaluating proposed towers and in streamlining the evaluation process. Copies may be provided to consultants or tower companies who regularly submit requests for consultation, as well as to those who submit individual requests that do not contain sufficient information to allow adequate evaluation. This form is for discretionary use, and may be modified as necessary.

The Migratory Bird Treaty Act (16 U.S.C. 703-712) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. While the Act has no provision for allowing an unauthorized take, it must be recognized that some birds may be killed at structures such as communications towers even if all reasonable measures to avoid it are implemented. The Service=s Division of Law Enforcement carries out its mission to protect migratory birds not only through investigations and enforcement, but also through fostering relationships with individuals and industries that proactively seek to eliminate their impacts on migratory birds. While it is not possible under the Act to absolve individuals or companies from liability if they follow these recommended guidelines, the Division of Law Enforcement and Department of Justice have used enforcement and prosecutorial discretion in the past regarding individuals or companies who have made good faith efforts to avoid the take of migratory birds.

Please ensure that all field personnel involved in review of FCC licensed communications tower proposals receive copies of this memorandum. Questions regarding this issue should be directed to Dr. Benjamin N. Tuggle, Chief, Division of Habitat Conservation, at (703)358-2161, or

Jon Andrew, Chief, Division of Migratory Bird Management, at (703)358-1714. These guidelines will be incorporated in a Director=s Order and placed in the Fish and Wildlife Service Manual at a future date.

Attachment

cc: 3012-MIB-FWS/Directorate Reading File
3012-MIB-FWS/CCU Files
3245-MIB-FWS/AFHC Reading Files
840-ARLSQ-FWS/AF Files
400-ARLSQ-FWS/DHC Files
400-ARLSQ-FWS/DHC/BFA Files
400-ARLSQ-FWS/DHC/BFA Staff
520-ARLSQ-FWS/LE Files
634-ARLSQ-FWS/MBMO Files (Jon Andrew)

FWS/DHC/BFA/RWillis:bg:08/09/00:(703)358-2183
S:\DHC\BFA\WILLIS\COMTOW-2.POL

Attachment

Service Interim Guidelines For Recommendations On
Communications Tower Siting, Construction, Operation, and Decommissioning

1. Any company/applicant/licensee proposing to construct a new communications tower should be strongly encouraged to collocate the communications equipment on an existing communication tower or other structure (e.g., billboard, water tower, or building mount). Depending on tower load factors, from 6 to 10 providers may collocate on an existing tower.

2. If collocation is not feasible and a new tower or towers are to be constructed, communications service providers should be strongly encouraged to construct towers no more than 199 feet above ground level, using construction techniques which do not require guy wires (e.g., use a lattice structure, monopole, etc.). Such towers should be unlighted if Federal Aviation Administration regulations permit.

3. If constructing multiple towers, providers should consider the cumulative impacts of all of those towers to migratory birds and threatened and endangered species as well as the impacts of each individual tower.

4. If at all possible, new towers should be sited within existing "antenna farms" (clusters of towers). Towers should not be sited in or near wetlands, other known bird concentration areas (e.g., State or Federal refuges, staging areas, rookeries), in known migratory or daily movement flyways, or in habitat of threatened or endangered species. Towers should not be sited in areas with a high incidence of fog, mist, and low ceilings.

5. If taller (>199 feet AGL) towers requiring lights for aviation safety must be constructed, the minimum amount of pilot warning and obstruction avoidance lighting required by the FAA should be used. Unless otherwise required by the FAA, only white (preferable) or red strobe lights should be used at night, and these should be the minimum number, minimum intensity, and minimum number of flashes per minute (longest duration between flashes) allowable by the FAA. The use of solid red or pulsating red warning lights at night should be avoided. Current research indicates that solid or pulsating (beacon) red lights attract night-migrating birds at a much higher rate than white strobe lights. Red strobe lights have not yet been studied.

6. Tower designs using guy wires for support which are proposed to be located in known raptor or waterbird concentration areas or daily movement routes, or in major diurnal migratory bird movement routes or stopover sites, should have daytime visual markers on the wires to prevent collisions by these diurnally moving species. (For guidance on markers, see *Avian Power Line Interaction Committee (APLIC). 1994. Mitigating Bird Collisions with Power Lines: The State of the Art in 1994. Edison Electric Institute, Washington, D.C., 78 pp*, and *Avian Power Line Interaction Committee (APLIC). 1996. Suggested Practices for Raptor Protection on Power Lines. Edison Electric Institute/Raptor Research Foundation, Washington, D.C., 128 pp.* Copies can be obtained via the Internet at http://www.eei.org/resources/pubcat/enviro/, or by calling 1-800/334-5453).

7. Towers and appendant facilities should be sited, designed and constructed so as to avoid or minimize habitat loss within and adjacent to the tower "footprint"@ However, a larger tower footprint is preferable to the use of guy wires in construction. Road access and fencing should be minimized to reduce or prevent habitat fragmentation and disturbance, and to reduce above ground obstacles to birds in flight.

8. If significant numbers of breeding, feeding, or roosting birds are known to habitually use the proposed tower construction area, relocation to an alternate site should be recommended. If this is not an option, seasonal restrictions on construction may be advisable in order to avoid disturbance during periods of high bird activity.

9. In order to reduce the number of towers needed in the future, providers should be encouraged to design new towers structurally and electrically to accommodate the applicant/licensee's antennas and comparable antennas for at least two additional users (minimum of three users for each tower structure), unless this design would require the addition of lights or guy wires to an otherwise unlighted and/or unguyed tower.

10. Security lighting for on-ground facilities and equipment should be down-shielded to keep light within the boundaries of the site.

11. If a tower is constructed or proposed for construction, Service personnel or researchers from the Communication Tower Working Group should be allowed access to the site to evaluate bird use, conduct dead-bird searches, to place net catchments below the towers but above the ground, and to place radar, Global Positioning

System, infrared, thermal imagery, and acoustical monitoring equipment as necessary to assess and verify bird movements and to gain information on the impacts of various tower sizes, configurations, and lighting systems.

12. Towers no longer in use or determined to be obsolete should be removed within 12 months of cessation of use.

In order to obtain information on the extent to which these guidelines are being implemented, and to identify any recurring problems with their implementation which may necessitate modifications, letters provided in response to requests for evaluation of proposed towers should contain the following request:

> "In order to obtain information on the usefulness of these guidelines in preventing bird strikes, and to identify any recurring problems with their implementation which may necessitate modifications, please advise us of the final location and specifications of the proposed tower, and which of the measures recommended for the protection of migratory birds were implemented. If any of the recommended measures can not be implemented, please explain why they were not feasible."

Appendix 7

KNOWN AND SUSPECTED IMPACTS OF WIND TURBINES ON WILDLIFE

While wind-generated electrical energy is renewable, emission-free, and generally environmentally clean (American Wind Energy Association [AWEA] unpubl. data, <http://www.awea.org>), it does have one significant downside -- rotor blades kill birds, especially raptors (Hunt 2002) and bats. Birds can strike the towers; electrocutions can occur if designs are poor; and wind farms may impact bird movements, breeding, and habitat use.

Wind turbine technology is not new to the United States. In the 1800s, Cape Cod supported over 1,000 working wind turbines (Ferdinand 2002). In the late 1930s, Vermont boasted the world's then-largest turbine, which was likely disabled by high winds due to design flaws. But wind turbine 'farms' and their impacts to birds are a recent phenomenon compared to power lines and communication towers, where mortality has been documented for decades or longer (Boeker and Nickerson 1975, Olendorff et al. 1981, APLIC 1994, APLIC 1996, Harness 1997, Ainley et al. 2001, Manville 2001). The problem in the U.S. surfaced in the late 1980s and early 1990s at the Altamont Pass Wind Resource Area, a facility then containing some 6,500 turbines on 73 mi^2 of gently rolling hills just east of San Francisco Bay, California (Davis 1995). Orloff and Flannery (1992) estimated that several hundred raptors were killed each year due to turbine collisions, guy wire strikes, and electrocutions. The most common fatalities were those of Red-tailed Hawks (*Buteo jamaicensis*), American Kestrels (*Falco sparvarius*) and Golden Eagles (*Aquila chrysaetos*), with fewer mortalities of Turkey Vultures (*Cathartes aura*), Common Ravens (*Corvus corax*), and Barn Owls (*Tyto alba*). The impacts of this wind farm were of most concern to the population of Golden Eagles, which was showing a "disturbing source of mortality" to a disproportionately large segment of the population (Southern Niagara Escarpment [WI] Wind Resource Area unpubl. report). More recent studies indicate that a model previously used to assess Golden Eagle mortality was defective, and that nonbreeding Golden Eagles representing a "floater" population were likely suffering less mortality based on a new model (Hunt 2002). Research continues at this time to further assess the impacts of Altamont turbines on raptors. The Altamont turbines are still estimated to kill 40-60 subadult and adult Golden Eagles each year, as well as several hundred Red-tailed Hawks and American Kestrels – a continuing concern for the FWS. Of the variety of wind turbines at the site, the smaller, faster moving, Kenetech-built, lattice-supported turbines caused most of the mortality. As part of a re-powering effort, these turbines are now being replaced with slower moving, tubular-supported turbines. While Europeans have used tubular towers almost exclusively, the U.S. has almost solely used lattice support, at least until recently (Berg 1996).

Colson (1995) indicated that some 16,000 wind turbines operated in California, making the State the largest concentration of wind energy development in the world. Since 1995, that statistic has changed. While California still boasts the greatest number of turbines in the U.S., many smaller turbines are being replaced by fewer but larger models. Worldwide, an estimated 50,000 turbines are generating power (AWEA unpubl. data; Ferdinand 2002), of which over 15,000 are currently in 29 states in the U.S. Turbine numbers are often difficult to track since statistics are generally presented in megawatts (MW) of electricity produced rather than number of turbines present. The latter statistic is of greater concern to ornithologists. In 1998, for example, Germany was the greatest producer with 2,874 MW of electricity produced by turbines, followed by the U.S. (1,884), and Denmark (1,450); (AWEA unpubl. data). While some project that the number of wind turbines in the U.S. may increase by another 16,000 in the next 10 years, current trends indicate an even greater potential growth. Although the U.S. presently produces less than 1% of its electrical energy from turbines – compared, for example, to Norway's 15% – 2001 was a banner year for U.S. turbine technology, doubling the previous record for installed wind production. Companies installed 1,898 turbines in 26 states, which will produce nearly 1,700 MW, at a cost of $1.7 billion for the new equipment (J. Cadogan, U.S. Department of Energy, 2002, pers. comm.). Over the past decade, wind power has been the fastest growing energy industry in the world. By 2020, the AWEA (unpubl. data) predicts that wind will provide 6% of this nation's electricity, serving as many as 25 million households. Enron Wind Corporation constructed some 1,500 of the 1,898 turbines installed in the U.S. in 2001. Although Enron is now bankrupt, General Electric purchased the company and is now producing wind turbines.

In March 2002, President Bush signed the Job Creation and Worker Assistance Act, extending the production tax credit to the wind industry for another two years. There are presently attempts in Congress to amend the reauthorization of this legislation for five or more years. However, even with a bright future for growth, and with low speed tubular-constructed wind turbine technology now being stressed, larger and slower moving turbines still kill raptors, passerines, waterbirds, other avian species, and bats. Low wind speed turbine technology requires much larger rotors, blade tips often extending more than 420 ft. above ground, and blade tips can reach speeds in excess of 200 mph under windy conditions (J. Cadogan, U.S. Department of Energy, 2002, pers. comm.). When birds

approach spinning turbine blades, "motion smear" – the inability of the bird's retina to process high speed motion stimulation – occurs primarily at the tips of the blades, making the blades deceptively transparent at high velocities. This increases the likelihood that a bird will fly through this arc, be struck by a blade, and be killed (Hodos et al. 2001).

What cumulative impact these larger turbines will have on birds and bats has yet to be determined. Johnson et al. 2002b raised some concerns about the impacts of newer, larger turbines on birds. Their data indicated that higher levels of mortality might be associated with the newer and larger turbines, and they indicated that wind power-related avian mortality would likely contribute to the cumulative impacts on birds. Since little research has been conducted on the impacts of large land-sited and offshore turbines on birds and bats, this newer technology is ripe for research.

Howell and Noone (1992) estimated U.S. avian mortality at 0.0 to 0.117 birds/turbine/yr., while in Europe, Winkelman (1992) estimated mortality at 0.1 to 37 birds/turbine/yr. Erickson et al. (2001) reassessed U.S. turbine impact, based on more than 15,000 turbines (some 11,500 in California), and estimated mortality in the range of 10,000 to 40,000 (mean = 33,000), with an average of 2.19 avian fatalities/turbine/yr. and 0.033 raptor fatalities/turbine/yr. This may be a considerable underestimate. As with other structural impacts, only a systematic turbine review will provide a more reliable estimate of mortality. While some have argued that turbine impacts are small (Berg 1996), especially when compared to those from communication towers and power lines, turbines can pose some unique problems, especially for birds of prey. Mortalities must be reduced, especially as turbine numbers increase. In addition to protections under the MBTA, Bald and Golden Eagles are afforded protections under the ESA for the former and the BGEPA for both raptors. As strict liability statutes, MBTA and BGEPA also provide no provisions for unauthorized "take." Wind farms can affect local populations of Golden Eagles and other raptors whose breeding and recruitment rates are naturally slow and whose populations tend to have smaller numbers of breeding adults (Davis 1995). Large raptors are also revered by Native Americans as well as by many others within the public. They are symbolic megafauna, and provide greater emotional appeal to many than do smaller avian species. Raptors also have a lower tolerance for additive mortality (Anderson et al. 1997). As with all other human-caused mortality, we have a responsibility to reverse mortality trends.

Until very recently, U.S. wind turbines have mostly been land-based. Perhaps following the European lead of siting wind turbines in estuarine and marine wetlands (van der Winden et al. 1999, van der Winden et al. 2000), and perhaps due to an assessment of a large number of potential offshore turbine locations in the U.S. (based on Weibull analyses of "good, excellent, outstanding, and superb" wind speed potentials [National Renewable Energy Laboratory 1987]), a new trend is evolving in North America. Several proposals for huge offshore sites are being submitted for locations on both Atlantic and Pacific coasts. These, at the very least, should require considerable research and monitoring to assess possible impacts to resident and migrating passerines, waterfowl, shorebirds, and seabirds. One site at Nantucket Shoals, offshore of Nantucket Island near Cape Cod, Massachusetts, is proposed by the Cape Wind Association to contain 170 turbines, many over 420 feet high, within a 25 mi^2 area (AWEA unpubl. data, Ferdinand 2002). What impacts this wind farm would have on wintering sea ducks and migrating terns, especially the Federally endangered Roseate Tern (*Sterna dougallii dougallii*), and on Northern Gannets (*Morus bassanus*), is unknown. The Long Island Power Authority is proposing a site offshore of Long Island, New York's south shore, covering as much as 314 mi^2. Other sites are being proposed for Portland, Maine, and Lake Erie. The largest proposed wind farm in North America is being planned for a 50 mi^2 area between Queen Charlotte Island, BC, and Alaska. It is being designed to contain 350 turbines, many exceeding 400 feet in height. The potential for significant offshore turbine impacts on waterbirds is great, virtually no research has been conducted in the United States to quell these concerns, and finding carcasses at sea is very challenging.

Europe presently has 10 offshore wind projects in operation, producing over 250 MW of electricity (British Wind Energy unpub. data, www.offshorewindfarms.co.uk). Many other projects are currently under review. To avoid citizen concerns regarding the "not in my backyard" complex, most European turbines are sited offshore or in estuaries, away from immediate human development (Larsen and Madsen 2000). While Europe is well ahead of the United States regarding turbine research, their study results are still generally inconclusive (T. Bowan, FWS, 2003 pers. comm.). Collision mortality, while generally unknown, is believed to be small because birds appear to avoid offshore wind farms. There are exceptions, including for Whooper Swans (*Cygnus Cygnus*; Larsen and Clausen 2002) that are susceptible to turbine strikes in the early mornings and evenings, especially in inclement weather. The collection of carcasses at offshore sites is more challenging than for land-based turbines since nets generally must be used to collect carcasses, tides and weather affect collection, and fog is a frequent problem. While habitat loss is not believed to be a serious concern, its impacts continue to be assessed. Disturbance may be problematic since some species such as Common Eiders avoid wind farms and may not return to a coastal area for several years (Guillemette and Larsen 2002). Disturbance may lead to displacement, and turbines may serve as barriers to

seaduck movements. Only a few studies have been conducted in Denmark, the Netherlands, and Sweden, so further research is needed. Studies deal mostly with wintering species (Noer et al. 2000, Percival 2001, Langstron and Pullan 2002, Christensen et al. 2002, and Bruns et al. 2002).

In an attempt to begin addressing the bird mortality issue – and ancillary to this, the issue of ESA-listed bat strikes – the National Wind Coordinating Committee was created in 1994 as part of President Clinton's Global Climate Change Action Plan (Colson 1995). Shortly following the creation of the Committee, the Avian Subcommittee (now called the Wildlife Work Group) was formed, co-founded by the Service. In 1999, the Avian Subcommittee published a *Metrics and Methods* document to study turbine impacts on birds (Anderson et al. 1999). The document provides an excellent resource for conducting research on proposed and existing turbines and wind farms.

Appendix 8

LITERATURE CITED

Ainley, D.G., R. Podolsky, L. DeForest, G. Spencer, and N Nur. 2001. The status and population trends of the Newell's Shearwater or Kauz'i: insights into modeling. Studies in Avian Biology No. 22: 108-123

Aldrich, J.W., R.C. Banks, T.J. Cade, W.A. Calder, F.G. Cooch, S.T. Emlen, G.A. Greenwell, T.R. Howell, J.P. Hubbard, D.W. Johnston, R.F. Johnston, and L.R. Mewaldt. 1975. Report of the American Ornithologists Union and *ad hoc* Committee on Scientific and Educational Use of Birds. Auk 92 (3, Supple.): 1A-27A.

Anderson, R.L., H. Davis, W. Kendall, L.S. Mayer, M.L. Morrison, K. Sinclair, D. Strickland, and S. Ugoretz. 1997. Standard metrics and methods for conducting avian/wind energy interaction studies. Pp 265-272 *in* G. Miller (editor). Windpower '97 Proceedings, June 15-18, 1997, Austin, TX, American Wind Energy Association.

Anderson, R., M. Morrison, K. Sinclair, D. Strickland, H. Davis, and W. Kendall. 1999. Studying wind energy/bird interactions: a guidance document. Metrics and methods for determining or monitoring potential impacts on birds at existing and proposed wind energy sites. Avian Subcommittee, National Wind Coordinating Committee, Washington, DC. 87 pp.

Avian Power Line Interaction Committee. 1994. Mitigating bird collisions with power lines: the state of the art in 1994. Edison Electric Institute, Washington, DC. 78 pp.

Avian Power Line Interaction Committee. 1996 (reprinted 2000). Suggested practices for raptor protection on powerlines: the state of the art in 1996. Edison Electric Institute/Raptor Research Foundation, Washington, DC. 125 pp.

Barbour, R.W., and W.H. Davis. 1969. Bats of America. University of Kentucky Press, Lexington , KY. 286 pp.

Berg, P. 1996. The effects of avian impacts on the wind energy industry. Undergraduate Engineering Review, Department of Mechanical Engineering, University of Texas, Austin. 9 pp.

Boekev, E.L., and P.R. Nickerson. 1975. Raptor electrocutions. Wildlife Society Bulletin 3: 79-81.

Braun, C. E., O. O. Oedekoven, C. L. Aldridge. 2002 In Press. Oil and Gas development in western North America: effects on sage brush steppe avifauna with particular emphasis on sage grouse. In Press.

Bruns, E., A. Andersson, and S-E. Thor. 2002. Environmental issues of offshore wind farms. Summary of IEA R&D Wind, Topical Expert Meeting No. 40. September 2002, Husum, Germany. 6 pp.

Christensen, T.K., I. Clausager, and I.K. Petersen. 2002. Status report of seabird surveys at Horns Rev, 2000-2001. National Environmental Research Institute, Ministry of Environment and Energy, Dept. Coastal Zone Ecology, Denmark. 22 pp.

Cochran, W.W., and R.R. Graber. 1958. Attraction of nocturnal migrants by lights on a television tower. Wilson Bulletin 70:378-380.

Cohen, D.A. 1896. California department. Osprey 1:14-15.

Colson and Associates. 1995. Investigation of bird electrocutions at the Kenetech Windpower, Altamont Pass windplant. Preliminary report. March 1995.

Colson, E.W. 1995. Avian interactions with wind energy facilities: a summary. Pp 77-86 *in* V. Jamison (editor). Wind Power 1995, March 26-30, 1995, Washington, DC, American Wind Energy Association.

Davis, H. (editor). 1995. A pilot Golden Eagle population study in the Altamont Pass Wind Resource Area, California. National Renewable Energy Laboratory, Golden, CO, Contract No. DE-AC36-83CH10093, NREL/TP-441-7821. 219 pp.

Drewien, R.C. 1973. Ecology of Rocky Mountain Greater Sandhill Cranes. Ph.D. dissertation. University of Idaho. 152 pp.

Erickson, W.P., G.D. Johnson, M.D. Strickland, K.J. Sernka, and R.E. Good. 2001. Avian collisions with wind turbines: a summary of existing studies and comparisons to other sources of avian collision mortality in the United States. Western EcoSystems Technology, Inc., Cheyenne, WY. National Wind Coordinating Committee Resource Document, August: 62 pp.

Federal Aviation Administration. 2000. Obstruction marking and lighting. Advisory Circular AC 70/7460-1K, Air Traffic Airspace Management, March 2000. 31 pp.

Ferdinand, P. 2002. Windmills on the water create storm on Cape Cod. Washington Post, August 20, A3.

Field and Stream. 1874. The St. Augustine Press. 3(10):150.

Green, R.H. 1979. Sampling design and statistical methods for environmental biologists. John Wiley & Sons, New York, NY. 257 pp.

Guillemette, M., and J.K. Larsen. 2002. Postdevelopment experiments to detect anthropogenic disturbances: the case of sea ducks and wind parks. Ecological Applications 12(3):868-877.

Harmata, A.R., J.R. Zelenak, and K.M. Podruzny. 1998. Avian use of Norris Hill Wind Resource Area, Montana. US Dept. of Energy, National Renewable Energy Lab., Wind Tech. Ctr., Golden CO. 72 pp plus appendices.

Harness, R.E. 1997. Raptor electrocutions caused by rural electric distribution powerlines. M.S. thesis, Colorado State University. 110 pp.

Harvey, M. J., J. S. Altenbach, and T. L. Best. 1999. Bats of the United States. Arkansas Game & Fish Commission. Bat Conservation International, Austin, TX. 64 pp.

Hodos, W., A. Potocki, T. Storm, and M. Gaffney. 2001. Reduction of motion smear to reduce avian collisions with wind turbines. Proceedings of the National Avian-Wind Power Planning Meeting IV: 88-105.

Howell, J.D., and J. Noone. 1992. Examination of avian use and mortality at a U.S. windpower, wind energy development site, Montezuma Hills, Solano Country, CA.

Huckabee, J.W. 1993. Proceedings: avian interactions with utility structures, international workshop, September 13-16, 1992, Miami, FL. Electric Power Research Institute, Project 3041, EPRI TR-103268.

Hunt, W.G. 2002. Golden eagles in a perilous landscape: predicting the effects of mitigation for wind turbine blade-strike mortality. Public Interest Energy Research, CA Energy Comm. Consultant Report P500-02-043F. 52 pp.

Johnson, G.D., W.P. Erickson, M.D. Strickland, M.F. Shepherd and D.A. Shepherd. 2000. Final report. Avian monitoring studies at the Buffalo Ridge, Minnesota Wind Resource Area: Results of a 4-year study. Prepared for Northern States Power Co. Western EcoSystems Technology, Inc. Cheyenne, WY. 262 pp.

Johnson, G.D., W.P. Erickson, D.A. Shepherd, M. Perlik, M.D. Strickland, and C. Nations. 2002a. Bat interactions with wind turbines at the Buffalo Ridge, Minnesota, wind resource area: 2001 field season. Electric Power Research Inst., Palo Alto, CA.

Johnson, G.D., W.P. Erickson, M.D. Strickland, M.F. Shepherd, D.A. Shepherd, and S.A. Sarappo. 2002b. Collision mortality of local and migrant birds at a large-scale wind power development on Buffalo Ridge, Minnesota. Wildlife Society Bulletin 30(3): 879-887.

Johnson, G.D., W.P. Erickson, and M.D. Strickland. 2003. What is known and not known about bat collision mortality at windplants? *In* R.L. Carlton (ed.), Proc. Workshop on Avian Interactions at Wind Turbines, 16-17 October, 2002, Jackson Hole, WY. Electric Power Research Inst., Palo Alto, CA.

Keeley, B., S. Ugoretz, and D. Strickland. 2001. Bat ecology and wind turbine considerations. Proc. National Avian-Wind Power Planning Meeting, 4:135-146. National Wind Coordinating Committee, Washington, DC.

Langston, R.H.W., and J.D. Pullan. 2002. Windfarms and birds: an analysis of the effects of windfarms on birds, and guidance on environmental assessment criteria and site selection issues. Convention on the Conservation of European Wildlife and Natural Habitats, Standing Comm., December 2-5, 2002, T-PVS/ Inf (2002) 30 revised. 37 pp.

LaRoe, E.T., G.S. Farris, C.E. Puckett, P.D. Doran, and M.J. Mac. 1995. Our living resources: a report to the nation on the distribution, abundance and health of U.S. plants, animals and ecosystems. U.S. Department of Interior, National Biological Service, Washington, DC. 530 pp.

Larsen, J.K, and J. Madsen. 2000. Effects of wind turbines and other physical elements on field utilization by Pink-footed Geese (*Anser brachyrhynchus*): a landscape perspective. Landscape Ecology 15:755-764.

Larsen, J.K., and P. Clausen. 2002. Potential wind park impacts on Whooper Swans in winter: the risk of collision. Waterbirds 25 (Spec. Pub. 1):327-330.

Leddy, K.L., K.E. Higgins, and D.E. Naugle. 1999. Effects of wind turbines on upland nesting birds in Conservation Reserve Program grasslands. Wilson Bull. 111(1): 100-104.

Lehman, R.N., A.R. Ansell, M.G. Garrett, A.D. Miller, and R.R. Olendorff. 1999. Suggested practices for raptor protection on power lines: the American story. Pp 125-144 I*n* M. Ferrer and G.F.E. Janss (editors). Birds and power lines – collision, electrocution and breeding. Quercus Publishing Co.

Lewis, J.C. 1993. The U.S. Fish and Wildlife Service and bird-power line interactions. Pp. 2-1- 2.6 I*n* J.W. Huckabee (editor). Proceedings: avian interactions with utility structures, international workshop, September 13-16, 1992, Miami, FL. Electric Power Research Institute, Project 3041, EPRI TR-103268.

Lewis, J.C. 1997. Alerting the birds. Endangered Species Bulletin XXII:2.

Lockman, D.C. 1988. Trumpeter Swan mortality in Wyoming 1982-1987. Pp. 12-13. Proceedings and papers of the eleventh Trumpeter Swan Society conference.

Manes, R., S. Harmon, B. Obermeyer, and R. Applegate. 2002. Wind energy and wildlife: an attempt at pragmatism. Spec. Report of Wildlife Management Inst., October. 11 pp.

Manville, A.M. 2001. Avian mortality at communication towers: steps to alleviate a growing problem. Pp. 75-86 *In* B.B. Levitt (editor), Cell towers – wireless convenience? Or environmental hazard? Proceedings of the "Cell Towers Forum," state of the science/state of the law, Dec. 2, 2000, Litchfield, CT. New Century Publishing 2000, Markham, Ontario.

Manville, A.M. 2002. Protocol for monitoring the impact of cellular telecommunication towers on migratory birds within the Coconino, Prescott, and Kaibab National Forests, Arizona. Special research protocol, Division of Migratory Bird Management, USFWS, Arlington, VA 10 pp. for the U.S. Forest Service.

Manville, A.M. 2003. Bird strikes and electrocutions at power lines, communication towers, and wind turbines: state of the art and state of the science – next steps toward mitigation. *In* T. Rich (ed.). Proceedings of 3rd International Partners In Flight Conference: a Workshop on Bird Conservation Implementation and Integration, Asilomar, CA, March 20-24, 2002. 23 pp. In press.

National Renewable Energy Laboratory. 1987. Wind energy resource atlas of the United States. National Renewable Energy Laboratory, U.S. Department of Energy. 1 p.

Noer, H., T.K. Christensen, I. Clausager, and I. Krag. 2000. Effects on birds of an offshore wind park at Horns Rev: Environmental impact assessment. Ministry of Environment and Energy, National Environmental Research Inst., Dept. of Coastal Zone Ecology, Denmark. Elsamprojekt A/S 2000.

Olendorff, R.R., A.D. Miller, and R.N. Lehman. 1981. Suggested practices for raptor protection on powerlines: the state of the art in 1981. Raptor research report No. 4. Raptor Research Foundation, University of Minnesota, St. Paul. 111 pp.

Orloff, S., and A. Flannery. 1992. Wind turbine effects on avian activity, habitat use and mortality in Altamont Pass and Solano County Wind Resource Areas. Report to the Planning Departments of Alameda, Contra Costa and Solano Counties and the California Energy Commission, Grant No. 990-89-003 to BioSystems Analysis, Inc., Tiburton, CA.

Percival, S.M. 2001. Assessment of the effects of offshore wind farms on birds. ETSU W/13/00565/REP, DTI/Pub URN 01/1434. 66 pp.

Tordoff, H.B., and R.M. Mengel. 1956. Studies of birds killed in nocturnal migration. University Kansas Museum Natural History Publication 10:1-44.

U.S. Fish and Wildlife Service. 2002. Evaluating potential impacts of wind resource areas on wildlife in Montana: A strategy for identification of study and monitoring needs. Ecological Services Division, Helena, MT. 21 pp.

U.S. Fish and Wildlife Service. 2003. Birds of conservation concern 2002. Division of Migratory Bird Management, U.S. Fish and Wildlife Service, Arlington, VA. 99 pp.

van der Winden, J., A.L. Spaans, and S. Dirksen. 1999. Nocturnal collision risks of local wintering birds with wind turbines in wetlands. Bremer Beitrane fur Naturkunde und Naturschutz Band 4:33-38.

van der Winden, J., H. Schekkerman, I. Tulp, and S. Dirksen. 2000. The effects of offshore windfarms on birds. Pp 126-135 I*n* T. Merck and H. von Nordheim (editors). Technische Eingriffe in marine Lebensraume, BfN-Skripten 29, Bundesamt fur Naturschutz.

Winkelman, J.E. 1992. The impact of the SEP wind park near Oosterbierum (Fr.), the Netherlands, on birds, 2: nocturnal collision risks (Dutch, English summary). RIN- report 92/3, DLO-Institute for Forestry and Nature Research, Arnhem.

Woodward, A. J., S. D. Fuhlendorf, D. M. Leslie Jr., and J. Shackford. 2001. American Midland Naturalist, 145: 261-274.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

Ref: EPR-N

AUG 31 2011

Matt Marsh
Environmental Protection Specialist
Upper Great Plains Regional Office
Western Area Power Administration
P.O. Box 35800
Billings, MT 59107-5800

Re: Scoping Comments on the Wilton IV Wind Energy Center Project

Dear Mr. Marsh:

The U.S. Environmental Protection Agency Region 8 has received the Western Area Power Administration's (WAPA's) notice of intent to prepare an Environmental Impact Statement (EIS) for the Wilton IV Wind Energy Center Project. In accordance with the EPA's authorities and responsibilities under Section 102(2)(C) of the National Environmental Policy Act (NEPA), 42 U.S.C. Section 4332(2)(C) and Section 309 of the Clean Air Act, 42 U.S.C. Section 7609, we provide the following scoping comments related to issues that we believe should be considered during preparation of the EIS.

NextEra has applied to the WAPA to interconnect its proposed 99-megawat (MW) Wilton IV Wind Energy Center Project to the WAPA's grid system. The principal components of the facility will include: 62 wind turbine generators, an underground power collection system, a connector road system and an operations and maintenance facility. The wind turbine rotors would be 328 feet in diameter. Electrical power from the proposed facility would interconnect into Western's existing Hilken Switching Station near Wilton, North Dakota. Construction of the Wilton IV Wind Energy Center is proposed to begin in summer of 2012. In addition to constructing and operating the above proposed Project, NextEra has requested to operate its nearby existing Wilton I, Wilton II, and Baldwin Wind Energy Center projects at levels exceeding an average annual 50 MW, when wind conditions warrant.

The EPA commends the WAPA for making wind-powered electricity a part of its energy portfolio. We also thank you for recognizing that, while the use of renewable rather than conventional energy technologies can be a great benefit on the global and regional scale, effects to the local environment must still be carefully considered. Along with identifying direct impacts, the EIS should include an analysis of indirect and cumulative impacts. The EIS should disclose the impacts of all reasonably foreseeable actions on environmental resources in a way that enables decision-makers to be able to effectively plan to reduce impacts on such resources as much as possible. The analysis of indirect effects should include all connected actions, including improvements to the Hilken Switching Station.

Key Issues Identified by EPA

EPA has identified the following key issues that we believe must be clearly addressed in the EIS so that potential impacts to public health and the environment can be fully evaluated and disclosed. They are (1) impacts associated with overall surface disturbance, (2) impacts on wetlands and riparian areas and (3) water quality impacts to surface water and groundwater resources. For more detail on these issues, as well as other areas of concern, the EPA offers the enclosed Detailed Scoping Comments for your consideration as you begin the EIS process.

(1) Surface disturbance is an important consideration due to associated long-term environmental impacts

At this time, the total acreage of the project is unknown, but it is expected that construction of 62 wind turbines and associated facilities could cause significant surface disturbance. Although some surface disturbance for wind projects is temporary, we encourage WAPA to work cooperatively with NextEra to ensure that the amount of surface disturbance is minimized to the extent practicable. Even temporary disturbances have the potential to create long-term environmental impacts including soil erosion, invasive plant species growth and habitat loss. We recommend that the WAPA encourage NextEra to consider and disclose methods to reduce surface disturbance and requirements for contractors working on the project to minimize surface disturbance to the maximum extent practicable. Of particular concern is the potential use of "crane walks" for moving cranes directly from pad to pad. Crane walks present opportunity for significant disturbance by creating 40-foot wide pathways. The EPA recommends that the WAPA and NextEra look for ways to maximize the use of access roads for crane movement and minimize the use of crane walks once the final number and location of wind turbines is determined.

(2) Wetlands, waterbodies and riparian areas are important resources that deserve careful consideration in the NEPA analysis

The EPA considers the protection, improvement, and restoration of wetlands and riparian areas to be a high priority. Wetlands and riparian areas increase landscape and species diversity, support many species of wildlife, and are critical to the protection of water quality and designated beneficial water uses. Discharge of dredged or fill material into waters of the United States, including wetlands, are regulated under the Clean Water Act (CWA) Section 404. This permit program is administered jointly by the U.S. Army Corps of Engineers (Corps) and the EPA. Please consult with the Corps to determine if any jurisdictional wetlands are present in the project area, and determine the applicability of CWA Section 404 permit requirements to this project. Additionally, Executive Order (EO) 11990 directs Federal Agencies to "take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities." The NEPA analysis should describe how the project will address the wetland protection goals in EO 11990. The EPA suggests a mitigation commitment that indirect draining of, or direct disturbance of, wetland areas will be avoided if at all possible, and requiring complete avoidance of disturbance to any fen wetland (a Category I resource, i.e. wetlands that have groundwater or surface water connection to an area of special natural resource interest). Fen wetlands are an important and unique wetland type. They shelter over 200 plant species and the wetland's vegetation provides shelter for wildlife.

Installation of wind turbine generators, access road construction, electrical collection system installation, and construction of the collector substation all have potential to impact wetlands in the proposed project

area. Please note that wetland impacts should be avoided and minimized, to the maximum extent practicable, with compensation for unavoidable wetland impacts provided through wetland restoration, creation, or enhancement. Due to the time it can take to adequately reclaim some disturbed wetlands, the EPA suggests that the WAPA work cooperatively with NextEra to mitigate wetland disturbance during the project operating time, and that mitigation for any particular wetland or riparian area begin concurrent with the disturbance, or even prior to project construction, if possible. In general, the required compensatory mitigation should be located within the same watershed as the impact site, and should be located where it is most likely to successfully replace lost functions and services. As studies indicate that traditional mitigation is generally not successful in fully restoring a wetland function, a minimum of two-to-one mitigation for wetland disturbance should be performed. The EIS should specify general mitigation requirements, as well as requirements for a wetland mitigation plan that considers direct, indirect, and cumulation effects and provides specific information on planned mitigation including the type and location of the mitigation efforts.

The proposed project is within the jurisdiction of the U.S. Fish and Wildlife Service's (USFWS) Long Lake Management District (WMD) and may include easements or fee title lands that they administer. We recommend that the WAPA and NextEra consult with the Long Lake WMD during preparation of the EIS regarding particular requirements in these areas.

(3) Surface water and groundwater are valuable resources, thus it is important to evaluate and mitigate associated impacts

The EPA recommends the EIS include a thorough characterization of existing groundwater and surface water resources within the project area including:

- Maps of groundwater and surface water resources;
- Baseline date on the condition and quality of ground water and surface water;
- Information on the quantity and location of all aquifers;
- Identification and description of all waters of the U.S. that could be effected by the project alternatives;
- Disclosure of which waters may be impacted and the nature of the impact; and
- Identification of all source water protection areas within each alternative and description of surface water and ground water use.

Further, since a large construction project such as this one has the potential to cause or contribute to erosion of soils and subsequent sediment loading to nearby surface waters, we recommend the NEPA analysis evaluate construction, design and operation practices that can minimize erosion and stormwater runoff, including actions to ensure compliance with Stormwater Pollution Prevention Plan (SWPPP) regulations under the EPA's National Point Discharge Elimination System (NPDES) program. It is anticipated that NextEra will be required to obtain a NPDES stormwater construction permit from the State of North Dakota and implement "Best Management Practices" (BMPs) to prevent stormwater runoff from the project site. A listing of potential BMPs is found on EPA's website at http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=min_measure&min_measure_id=4.

We appreciate the opportunity to provide scoping comments at this early stage of the NEPA process. If we may provide further explanation of our comments, please contact me at 303-312-6925 or David Duster, lead reviewer for this project, at 303-312-6665.

Sincerely,

Suzanne J. Bohan
Director, NEPA Compliance and Review Program
Office of Ecosystems Protection and Remediation

Enclosure

ENCLOSURE

EPA Region 8 Detailed Scoping Comments
Wilton IV Wind Energy Center Project, South Dakota

Analysis/Resource Considerations

Direct, Indirect and Cumulative Effects

In determining whether the project may have a significant effect on the environment, the EIS should examine the direct, indirect and cumulative impacts of development, including past, present and reasonably foreseeable future activities in the analysis area. Among other things, this review should assess any impacts to watersheds under special management considerations (e.g., Wild and Scenic Rivers), and threatened, endangered and/or sensitive species.

The EPA recommends the EIS consider the following information in its cumulative effects analyses:

1. Clear identification of resources being cumulatively impacted and the geographic area where impacts occur.
2. Use of appropriate analysis area boundaries for the resource and time period over which the cumulative effects have occurred or will occur.
3. Identification of impacts that are expected to resources of concern in each area from the proposed project through analysis of cause-and-effects relationships (include scientifically defensible threshold levels).
4. Adequate evaluation of all past, present, and reasonable foreseeable future actions that have affected, are affecting, or would affect resources of concern (include adequate evaluation vs. benchmark or baseline or reference conditions).
5. Disclosure of the overall cumulative impacts that can be expected if the individual impacts are allowed to accumulate, including comparisons of cumulative impacts for the proposed management direction and the reasonable alternatives in relation to the no action alternative and/or an environmental reference point.
6. A discussion of long-term maintenance and final decommissioning.

Some examples of activities that may result in cumulative impacts to resources of concern for the proposed project include other electrical generation or transmission facilities; agriculture; or road construction, maintenance, and use. We recommend that a map showing the proposed project location in relation to other wind energy projects, roads, cultivated cropland, etc., be included for displaying the potential causes and effects of cumulative activities in the analysis area.

Protection of Wetlands, Streams and Riparian Habitat

Wetlands increase landscape and species diversity and are critical to the protection of designated water uses. Possible impacts on wetlands from the proposed project include damage or improvement to water quality, habitat for aquatic and terrestrial life, channel and bank stability, flood storage, groundwater recharge and discharge, sources of primary production and aesthetics. Road and pipeline construction, grazing, land clearing, and earthwork generally include sedimentation and hydraulic impacts that may cause changes to surface and subsurface drainage patterns and, ultimately, wetland integrity and function. Riparian habitats, similar to wetlands, are important ecological areas supporting many species

of wildlife. Riparian areas generally lack the amount or duration of water usually present in wetlands, yet are "wetter" than adjacent uplands. Riparian areas increase landscape and species diversity, and are often critical to the protection of water quality and beneficial uses.

The EPA recommends the EIS include a summary of the acreage and condition of all wetlands and riparian sites and mapping to delineate wetlands in the project area. We suggest wetland delineation and marking of perennial seeps, springs and wetlands on maps and on the ground before any activity occurs, so efforts may be made to protect them. The EPA also recommends establishment of wetland and riparian habitat 100-foot buffer zones to avoid adverse impacts to streams, wetlands, and riparian areas. Ideally, wind turbines should be sited such that wetlands are avoided.

Water Quality Resources

The EIS should disclose the extent to which aquatic habitat could be impaired by project activities, including effects on surface and subsurface water quality and quantity, aquatic biota, stream structure and channel stability, streambed substrate (including seasonal and spawning habitats), stream bank vegetation, and riparian habitats. Water quality parameters such as conductivity, dissolved and suspended solids, metals, pH, temperature, dissolved oxygen and physical aquatic habitat parameters may also be important monitoring indicators for determining stream or lake impairment or stress, as well as its sensitivity to further impacts. Existing water quality standards applicable to the affected water bodies should be presented to provide a basis for determining whether existing uses will be protected and water quality standards met.

Air Quality

The current air quality conditions in the planning area and the amount of stationary, mobile and non-road source emission activities should be reviewed, quantified and disclosed. This includes particulate emissions from project construction activities. The NEPA analysis should evaluate and disclose air quality impacts and, if necessary, detail mitigation steps that will be taken to minimize associated adverse impacts. This analysis should evaluate and disclose the project's potential effect on all National Ambient Air Quality Standards (NAAQS), with particular emphasis on PM_{10} and $PM_{2.5}$. In addition to health-based standards to protect ambient air quality, the Clean Air Act requires special protection of Air Quality Related Values (AQRVs), such as visibility, in the nation's large National Parks and Wilderness Areas (identified as mandatory Class I Federal areas), and the NEPA analysis should identify any potential impacts to these areas. Any significant concentrations of hazardous air pollutants should also be evaluated to ensure public health protection.

Dust Suppression from Unpaved Roads and Disturbed Areas

Dust particulates from construction, vehicle travel on unpaved roads, and ongoing operations are an important concern. Airborne dust may not be only a visual nuisance, but can potentially be dangerous to asthma sufferers or could impact the flora and fauna of the area. The EIS should include plans for addressing dust control. We recommend the plans include dust suppression methods, inspection schedules, and documentation and accountability processes.

National Historic Preservation Act and Cultural Resources

Section 106 of the National Historic Preservation Act (NHPA) requires Federal agencies to take into account the effects of their undertakings on historic properties. To determine potential impacts to historic properties, site specific research, and/or inspections should be conducted to determine if such properties are present in the project area. In addition, any Indian tribe that may attach religious and cultural significance to historic properties in the project area should be identified and invited to consult. Findings should be reported to the State Historic Preservation Officer, Tribal Historic Preservation Officer, or other appropriate representative to initiate consultation and resolve any adverse effects. The EPA recommends historic and culturally significant properties be avoided to the maximum extent practicable.

Threatened and Endangered Species

The EPA recommends engaging the USFWS as early in the analysis as possible, in order to assure that the proposed alternatives responsibly account for, or are in compliance with, the following:

- Endangered Species Act;
- Habitat fragmentation regarding species' habitat requirements;
- Migratory Bird Treaty Act; and
- Special status species management.

Potential project impacts, when added to all other past, present, and reasonably foreseeable activities in the project area, may be of particular concern for special site recommend that the cumulative impacts analysis for these species discuss how past activities have affected species habitat, and how the proposed project is likely to contribute to this impact. This discussion should include the relevant Region of Influence (ROI) for each species and should attempt to quantify the extent to which suitable habitat has already been affected as well as the incremental additional impact predicted to result from the proposed Project.

Effects on Vegetation, Wildlife Habitats, and Area Hunting/Fishing

The effects of project activities on area ecology, including vegetation, wildlife and its habitats, as well as recreational hunting and fishing activities, should be disclosed and evaluated in the EIS. Important vegetative issues include reclamation activities supportive of pre-existing land uses (e.g., wildlife habitat), noxious weed management, and any adverse impacts to sensitive plants, and/or compliance with executive orders concerning invasive species, flood plains, or wetlands and riparian zones. Important wildlife issues include: compliance with Federal, State, or Tribal wildlife management objectives; wildlife mortality; crucial wildlife habitat; adverse impacts to breeding or nesting activities; disruption of migratory routes; increased wildlife harassment; hunting pressure; wildlife displacement; and/or any adverse effects to Endangered Species Act listed threatened or endangered species, USFWS listed or proposed species, or sensitive wildlife or fish species.

We suggest the WAPA and NextEra examine these issues together with cumulative impacts from other development. Identification in the EIS of mitigation measures that may be undertaken to minimize or eliminate adverse impacts from the alternatives is important. We recommend monitoring and routine inspections of the restored areas. If necessary, watering may temporarily be needed to ensure successful

revegetation.

Noxious Weeds and Invasive Plants

The EPA supports the goal of preventing the introduction and spread of invasive plants and noxious weeds. Among the greatest threats to biodiversity is the spread of noxious weeds and exotic (non-indigenous) plants. Many noxious weeds can out-compete native plants and produce a monoculture that has little or no plant species diversity or benefit to wildlife. Noxious weeds tend to gain a foothold where there is disturbance in the ecosystem. Due to the likely substantial surface disturbance associated with implementation of the proposed project, infestation of noxious weeds or invasive plants is probable.

While we support integrated weed management, including the effective mix of education and prevention with biological, mechanical, and chemical management, we encourage prioritization of management techniques that focus on non-chemical treatments first. Reliance on herbicides should be a last resort. Early recognition and control of new infestations is essential to stopping the spread of infestation and avoiding future widespread use of herbicides, which could correspondingly have more adverse impacts on biodiversity and nearby water quality. There are a number of prevention measures available, such as reseeding disturbed areas as soon as possible and cleaning equipment and tires prior to transportation to an un-infested area.

The NEPA analysis should evaluate the noxious weeds and exotic plants that occur in the resource area. In cases where noxious weeds are a threat, the EPA recommends that the EIS detail a strategy for prevention, early detection of invasion, and control procedures for each species.

Potential Effects on Local Communities from Reasonably Foreseeable Development

The NEPA analysis should consider socio-economic impacts to the local communities. Evaluation should consider the additional loading that could be placed on local communities' abilities to provide necessary public services and amenities. Such impacts may include housing and school needs for project workers and families, burdening existing waste and wastewater handling facilities, and increased road traffic with associated dust and hazardous material spill potential. Methods to avoid or minimize such impacts should be discussed.

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," applies to federal agencies that conduct activities that substantially affect human health or the environment. In accordance with this order, the WAPA should first identify low-income, minority, and Tribal communities that may be impacted by project activities. For such communities, the WAPA should strive to tailor public participation (through strategies such as those suggested in the Council on Environmental Quality's Environmental Justice guidance) so that the communities have an early and meaningful opportunity to participate. The EIS should disclose and evaluate any environmental justice concerns associated with impacts to the identified communities. If there are no applicable environmental justice considerations, then that should be disclosed.

United States Department of Agriculture

NRCS

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

August 16, 2011

Matt Marsh
Department of Energy
Western Area Power Administration
Upper Great Plains Customer Service Region
PO Box 35800
Billings, MT 59107-5800

RE. 99-megawatt wind energy facility
Burleigh County, ND

Dear Mr. Marsh:

The Natural Resources Conservation Service (NRCS) has reviewed your letter dated July 20, 2011, concerning a wind energy facility in Burleigh County, 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. It appears your proposed project is not supported by federal funding or actions; therefore, FPPA does not apply and no further action is needed. If your project is supported by 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. If your project has progressed to the point where permanent sites have been selected, pleas follow the instruction in the next paragraph.

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. Please complete Part I and Part III and return to Richard Lee, Area Resource Soil Scientist, 706 8th Avenue SE, Suite 1, Devils Lake, ND, 58301-3749 or call 701-662-7967. If applicable, you may email the information to richard.lee@nd.usda.gov. 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.

NRCS is monitoring Farmland Conversion Impact Ratings (Form AD-1006, Form AD-106) and are concerned with how some of the forms are being completed, particularly Part IV – Site Assessment Criteria, which is being scored below 60 points. As a general rule, if FPPA applies and the site is in agricultural production, rarely will it be appropriate for it to have a score of less than 60 points. If you have questions concerning the Farmland Conversion Impact Ratings or assessment factors, please call Steve Sieler, State Soil Liaison, NRCS, Bismarck, ND, (701) 530-2019.

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.

Sincerely,

JEROME M. SCHAAR
State Soil Scientist/MO 7 Leader

Enclosure

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:

(See Instructions on reverse side)

Form AD-1006 (10-83)

"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

August 12, 2011

Matt Marsh
Environmental Protection Specialist
Upper Great Plains Customer Service Region
Western Area Power Administration
PO Box 35800
Billings, MT 59107-5800

Dear Mr. Marsh:

RE: Wilton IV Wind Energy Facility

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.

National Wetland Inventory maps indicate numerous 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.

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 would like to receive a copy of the Draft Environmental Impact Statement when it is available.

Sincerely,

Greg Link
Chief
Conservation & Communication Division

js

STATE HISTORICAL SOCIETY OF NORTH DAKOTA

July 28, 2011

Mr. Matt Marsh
Environmental Protection Specialist
Western Area Power Administration
Upper Great Plains Customer Service Region
PO Box 35800
Billings MT 59107-5800

ND SHPO REF: 11- 2157 WAPA /PSC Wilton IV Wind Energy Center EIS, Burleigh County, North Dakota

Dear Mr. Marsh,

We reviewed your preliminary information on ND SHPO REF: 11- 2157 WAPA /PSC Wilton IV Wind Energy Center EIS, Burleigh County, North Dakota. There is potential for unrecorded and recorded cultural resource properties in a variety of physiographic settings in the overall project area. We recommend a Class I (file search) cultural resource inventory followed by a Class II (reconnaissance) survey for standing structures in the visual Area of Potential Effect (APE). Class III (pedestrian) survey is also recommended of all the areas of impact including the turbine sites, power collections system, roads, the facility and all other ground impacts. As part of the Class III Inventory, NDCRS site updates should be submitted on all sites resurveyed. We recommend that consultation include managers or owners of properties maintained for recreational or scenic value.

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

Jack Dalrymple, Governor
Mark A. Zimmerman, Director

1600 East Century Avenue, Suite 3
Bismarck, ND 58503-0649
Phone 701-328-5357
Fax 701-328-5363
E-mail parkrec@nd.gov
www.parkrec.nd.gov

July 26, 2011

Mr. Matt Marsh
Dept of Energy Western Area Power
PO Box 35800
Upper Great Plains Customer Service Region
Billings, MT 59107-5800

Re: Wilton IV Wind Energy Center EIS

Dear Mr. Marsh,

The North Dakota Parks and Recreation Department (the Department) has reviewed the above referenced proposed for a 99-megawatt wind energy facility in Burleigh County.

Our agency scope of authority and expertise covers recreation and biological resources (in particular rare plants and ecological communities). The project as defined does not affect state park lands that we manage or Land and Water Conservation Fund recreation projects that we coordinate.

The North Dakota Natural Heritage biological conservation database has been reviewed to determine if any plant or animal species of concern or other significant ecological communities are known to occur within an approximate one-mile radius of the project area. Based on this review, only one ecological community has been documented adjacent to project boundary. Because this information is not based on a comprehensive inventory, there may be species of concern or otherwise significant ecological communities in the area that are not represented in the database. The lack of data for any project area cannot be construed to mean that no significant features are present. The absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources.

Given the potential for not only habitat disturbance and disruption but the threat to nesting, feeding and migratory bird and bats in the area we suggest that all efforts be made to avoid impacts to wildlife species and their habitats. In an effort to avoid or minimize impacts to wildlife and their habitats we encourage proper evaluation of all potential wind energy sites. To identify and assess adverse impacts to wildlife we suggest pre and post construction avian and bat monitoring studies be conducted.

Regarding any reclamation efforts, we recommend that any impacted areas be revegetated with species native to the project area.

We appreciate your commitment to rare plant, animal and ecological community conservation, management and inter-agency cooperation to date. For additional information please contact me at (701-328-5370 or kgduttenhefner@nd.gov) Thank you for the opportunity to comment on this proposed project.

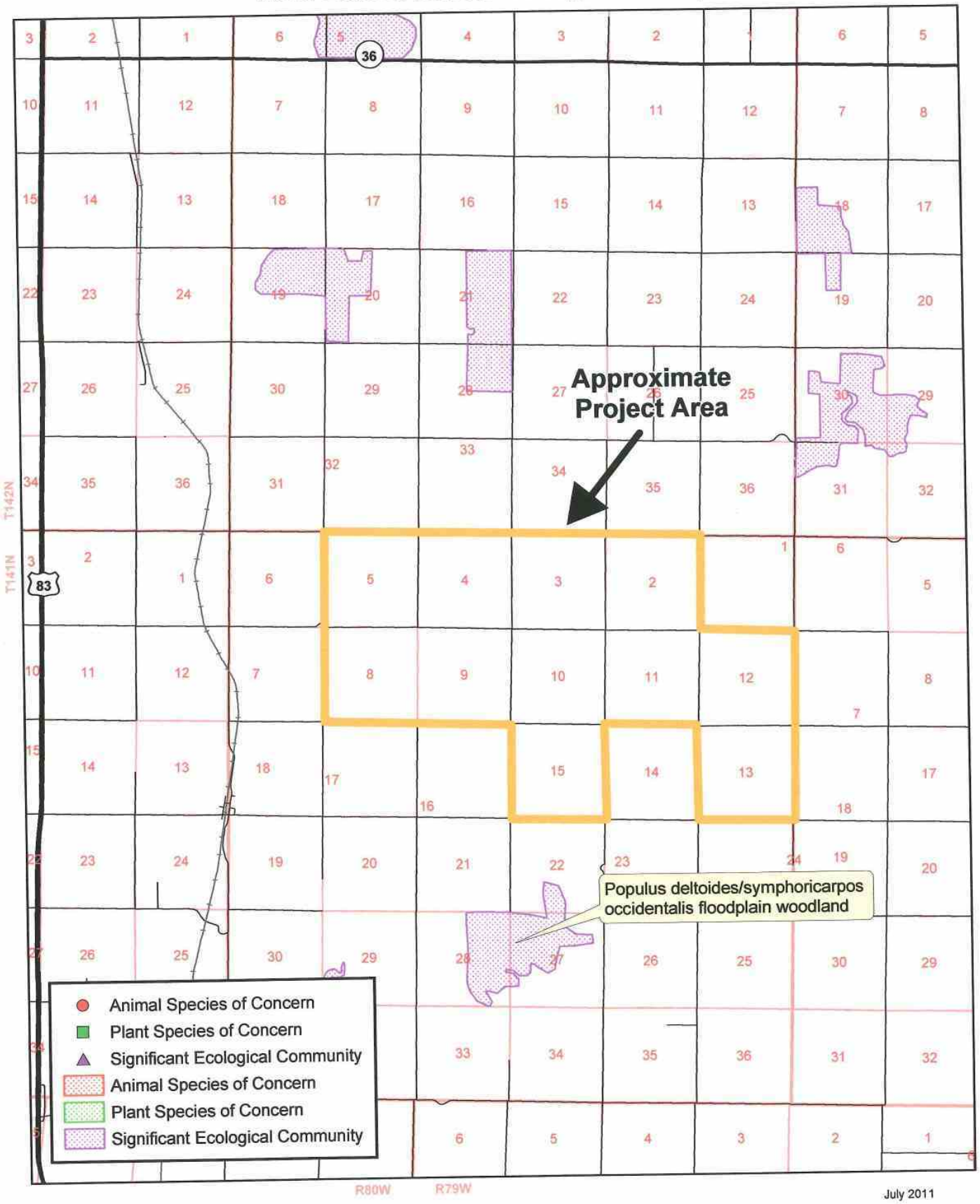
Sincerely,

Kathy Duttenhefner, Coordinator
Natural Resources Division

R.USNDNHI*2011-181KD7/26/2011DL8.20.2011

Play in our backyard!

North Dakota Parks and Recreation Department
North Dakota Natural Heritage Inventory



North Dakota Natural Heritage Inventory
Rare Animal and Plant Species and Significant Ecological Communities

State Scientific Name	State Common Name	State Rank	Global Rank	Federal Status	Township Range Section	County	Last Observation	Estimated Representation Accuracy	Precision
Populus deltoides/symphoricarpos occidentalis floodplain woodland	Western Cottonwood Floodplain	S3	GNR		141N079W - 27; 141N079W - 33; 141N079W - 21; 141N079W - 28; 141N079W - 22	Burleigh	2010-08-11	Low	

North Dakota Natural Heritage Inventory Biological and Conservation Data Disclaimer

The quantity and quality of data collected by the North Dakota Natural Heritage Inventory are dependent on the research and observations of many individuals and organizations. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in North Dakota have never been thoroughly surveyed, and new species are still being discovered. For these reasons, the Natural Heritage Inventory cannot provide a definite statement on the presence, absence, or condition of biological elements in any part of North Dakota. Natural Heritage data summarize the existing information known at the time of the request. Our data are continually upgraded and information is continually being added to the database. This data should never be regarded as final statements on the elements or areas that are being considered, nor should they be substituted for on-site surveys.

Estimated Representation Accuracy

Value that indicates the approximate percentage of the Element Occurrence Representation (EO Rep) that was observed to be occupied by the species or community (versus buffer area added for locational uncertainty). Use of estimated representation accuracy provides a common index for the consistent comparison of EO reps, thus helping to ensure that aggregated data are correctly analyzed and interpreted.

Very high (>95%)
High (>80%, <= 95%)
Medium (>20%, <= 80%)
Low (>0%, <= 20%)
Unknown
(null) - Not assessed

Precision

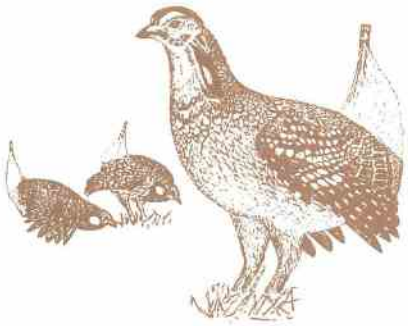
A single-letter code for the precision used to map the Element Occurrence (EO) on a U.S. Geological Survey (USGS) 7.5' (or 15') topographic quadrangle map, based on the previous Heritage methodology in which EOs were located on paper maps using dots.

S - Seconds: accuracy of locality mappable within a three-second radius; 100 meters from the centerpoint
M - Minute: accuracy of locality mappable within a one-minute radius; 2 km from the centerpoint
G - General: accuracy of locality mappalbe to map or place name precision only; 8 km from centerpoint
U - Unmappable

North Dakota Chapter

THE WILDLIFE SOCIETY

P.O. BOX 1442 • BISMARCK, ND 58502



August 18, 2011

Mr. Matt Marsh
Environmental Protection Specialist
Upper Great Plains Region
Western Area Power Administration
PO Box 35800
Billings, MT 59107-5800

Mr Marsh:

This letter is in response to the scoping process for the Environmental Impact Statement (EIS) on the proposed Wilton IV Wind Energy Center Project in Burleigh County, ND. The North Dakota Chapter of The Wildlife Society (Chapter) is generally supportive of the wind industry as a renewable source of "green" energy that can be produced locally. The Chapter is pleased that WAPA is undertaking an EIS on this project, and hopes that the EIS addresses the Chapter's following concerns.

The Chapter is concerned about the larger landscape in which the Wilton IV project is embedded and also the cumulative impacts of the numerous wind facilities being constructed in Burleigh and surrounding counties. The Wilton IV project is just one of numerous wind facilities either operational in, or proposed for, the immediate area. NextEra Energy operates Wilton I and II, also referred to as the Burleigh County Wind Energy Center, as well as the Baldwin project (Wilton III), and all are immediately adjacent to the Wilton IV project. Across the Missouri River, NextEra Energy operates the Oliver I and II project in Oliver County, and MN Power / Allete have proposed a 3-phase project in Oliver and Morton counties. All combined, these wind-energy centers comprise nearly 350 turbines.

The four "small" projects, Wilton I, II, IV, and Baldwin, are in essence one wind facility, comprising 192 turbines, but because of current state regulations, the facilities' biological effects could accumulate without the benefit of state regulatory review of cumulative impacts. The Chapter strongly believes that each new wind facility should be considered in the context of other existing and planned projects in the region. This consideration of cumulative effects should include *all* other anthropogenic impacts in the area, including such things as additional transmission lines, roads, and other types of infrastructure that may or may not be unrelated to wind facilities because wildlife and ecosystems do not recognize human categorizations of anthropogenic change. Many plant and animal species are sensitive to anthropogenic disturbance, be it increased human presence on the landscape or the introduction of a non-native plant into the environment. These types of influences seldom work independently on wildlife. The combination of new roads, more vehicular traffic, increased human presence, alteration of wetlands, introduction of non-native plants, the building of very large structures on the landscape (i.e., the wind turbines themselves), and other anthropogenic disturbances, are termed cumulative impacts. The cumulative impacts of wind developments and other anthropogenic pressures on wildlife are unknown. Whereas one wind facility may have no discernible negative influence on wildlife, the accumulation of numerous wind facilities built in the same area may begin to break down species' thresholds of tolerance to disturbances.

Perhaps these several "small" projects will have minimal impact on the environment, as there are already highways, railroads, transmission lines, and railroads in this area. However, this can not be ascertained without a cumulative impacts analysis. Back in November 2009, the Chapter commented on an

Environmental Assessment for Next Era Energy's Baldwin project. The Chapter's letter stated, "Because Wilton I, II, and Baldwin are all subsidiaries of NextEra Energy, it seems very likely that the parent company had intentions of planning for a 132-turbine (and perhaps an ultimately even larger) wind-resource area. The Chapter understands the highly secretive nature of the wind industry when dealing with industry competitors over easements and other issues. However, the Chapter urges wind developers to contact state and federal natural-resource agencies early in the planning process to discuss the entire scope of a wind-resource area, and thus ultimate impact footprint, regardless of current regulations. If contacted early, agencies and wind developers can address concerns over potential cumulative impacts, as well as ways to avoid or minimize them. The piecemeal approach currently in effect, although unfortunately legal, ignores biological realities." In retrospect, it does indeed seem that NextEra Energy had plans for a wind-resource area much larger than the aforementioned 132 turbines. It is past time that the cumulative impacts of these piecemeal projects be evaluated for their combined effect on the environment.

On a larger geographic scale, that of the statewide level, the Chapter also would like to see addressed in the EIS cumulative impacts section some discussion on how the Wilton IV wind facility and the other wind facilities for which WAPA is involved in North Dakota might have cumulative impacts to wildlife and the environment. At both the local and state levels, the Chapter looks forward to reviewing the cumulative impacts section of the draft EIS.

A second Chapter concern is that the Wilton IV project is within the migration corridor of the Whooping Crane, a federally endangered species. Mortality by transmission lines is a source of mortality for Whooping Cranes. Where feasible, power lines should be buried, all above-ground lines should have bird deterrents, and the use of guy wires should be avoided. If lines cannot be buried, markers should be required on guy wires and overhead transmission lines.

A third Chapter concern is the impacts that wind facilities placed in grasslands, particularly extensive tracts of native prairie, have on ecosystem health and wildlife. In a 2007 report, *Environmental Impacts of Wind-Energy Projects*, by the National Research Council to the U.S. Congress, the Council recognized that the construction and operation of wind-energy facilities directly influence ecosystem structure. These influences include removal of vegetation, disturbance, compaction of soil, soil erosion, and changes in hydrologic features. Wildlife is impacted directly through mortality or indirectly through alteration of habitat and behavioral avoidance. Furthermore, research conducted in various parts of the United States indicates small-scale displacement of songbirds. Specifically, research conducted in North Dakota and South Dakota by the US Geological Survey indicates displacement of some species of grassland songbirds by wind facilities.

The Chapter is particularly concerned with the impact to wildlife of wind facilities placed on the Missouri Coteau, as the Wilton IV project is. The Missouri Coteau contains large expanses of unfragmented grasslands intermixed with millions of wetlands and is a vital breeding area for many grassland and wetland nesting birds. In addition, it is a hunter's paradise and a prime area for ecotourism potential. The Missouri Coteau is in the midst of the Central Flyway, a migratory corridor used by millions of game birds and other species during spring and fall. It is also an endangered ecosystem, even more so than tropical rainforest. Only about 30% of mixed-grass prairie remains in North America. The Missouri Coteau is critically important for wildlife in North Dakota, as well as to the hunters, outdoor enthusiasts, and operators of ecotourism industries that value these irreplaceable resources. The importance of tourism to the state's economy is underscored by the fact that the tourism industry ranks third in its contribution to the state's economic base; tourism generated $177 million in visitor spending in 2010. Hunting contributes about $365 million annually to the state's tourism industry. However, the wind industry continues to target the Missouri Coteau. Growing clusters of development are occurring not just in the Burleigh County area, but also in the southern part of the state in LaMoure, Dickey, McIntosh and Logan counties, and in the northern part of the state in Ward and Mountrail counties.

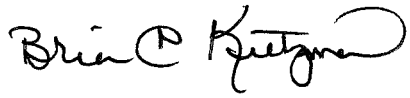
The Chapter is most supportive of wind facilities that are placed in habitats of low value to wildlife, such as cropland in already predominantly agricultural landscapes. In areas where turbine placement on grasslands is unavoidable, the Chapter urges mitigation in ratios exceeding 1:1. That is to say, for every acre of grassland destroyed, more than an acre should be restored or protected. Native prairie should receive the highest ratio, followed by planted grasslands. The Chapter realizes that there is no established system in North Dakota for this type of mitigation for wind facilities, but also realizes that Basin Electric Power and BP Alternative Energy (for a jointly owned South Dakota project), have committed to voluntary conservation measures. The Chapter applauds these efforts.

The Chapter stresses early contact between wind-industry representatives and state and federal agencies, as well as other concerned entities. Early discussions allow for the opportunity to coordinate efforts to study the potential impacts of wind facilities on wildlife. There are numerous unanswered questions about the impacts of wind facilities on wildlife. Whereas many wind developers conduct pre-operational baseline surveys, and sometimes post-operational monitoring surveys, these surveys are not always pertinent to a particular region. Money might be better spent on surveys of a different nature. For example, in North Dakota, very little is known about rates of bird and bat mortality, or the impacts of turbines on prairie grouse. To our knowledge, no wind developers are addressing these issues. Even if they were, another cause for concern is the sharing of results. It is difficult to make informed decisions when the scientific data are non-existent, or existent but not shared.

Some wind developers are beginning to write Avian and Bat Protection Plans for their facilities. The Chapter supports the development of such plans, especially if these plans are written in coordination with state and federal natural-resource agencies, address what pre- and post-operational monitoring will be conducted, how the resulting data will be used and shared, and explains how potential impacts to migratory and resident birds and bats will be avoided, minimized, and mitigated.

Because the Chapter's members are wildlife professionals, the Chapter would be happy to engage wind developers in discussions about our concerns, as well as serving in advisory capacities.

Sincerely,



Brian Kietzman
President, North Dakota Chapter of The Wildlife Society

The Wildlife Society is an international, nonprofit, scientific and educational organization composed of professionals, students, and laypersons active and interested in wildlife research, management, education and administration. The NDCTWS is an active affiliate. It is specifically concerned with approaches to effective management of North Dakota's plant and animal communities. The Chapter provides expertise in advising legislative and judicial processes surrounding the controversial management of many natural resource assets. It advocates the holistic treatment of environmental questions. The Chapter was founded in 1963 and incorporated in 1981 under the laws of North Dakota. The NDCTWS would be very willing to engage the PSC in issues concerning wildlife impacts from wind facilities, as well as offer advice based on member's expertise in matters of wildlife management and impacts of human-derived disturbances.

August 4, 2011

Mr. Matt Marsh
Western Area Power Administration
Upper Great Plains Region
P.O. Box 35800
Billings, MT 59107-5800

Dear Mr. Marsh:

Thank you for the opportunity to comment on the Wilton Wind IV project. We have watched with interest the processing of a wind tower policy for Burleigh County by the Burleigh County Planning Commission and the Burleigh County Commissioners. We are pleased that an agreeable policy has been formulated and approved.

We are long time residents of Burleigh County and Gerald has farmed/or ranched in the community for more than 40 years. We live and ranch on the family owned land which has been in the family since 1929; where Gerald was raised and continued with the family operation. Our roots are strong and deep in the area and community having raised our own family of four on this ranch. At present, our two sons are also beginning a cattle ranching operation with us. Our land is our home, our job, and our living. This area is and has always been considered rural and agricultural. Wind towers fit with the rural and agricultural setting.

We have very strong feelings with regard to our rights as property owners. Over the years we have made many business changes in order to maintain a viable operation. We, residents of Burleigh County, are on the crux of change once again. The addition of the proposed wind tower presents land owners with an opportunity to provide supplemental income, provide income for the county and the school district as additional revenue, and will provide high-value jobs in the community. Next Era has also provided new and reconstructed roads and has maintained these as part of their project.

We are very excited to learn of this wind tower opportunity as we firmly believe, although wind energy is not the total answer, that it is a good approach to the increasing energy needs of our country. A tremendous benefit of wind power is that it is a sustainable source of energy and a clean source of energy. Wind power generation produces zero carbon dioxide emissions, which is important with our concern over climate change. Wind energy is also a renewable energy, meaning it does not deplete our natural resources like coal or petroleum based products. According to the National Renewable Energy Laboratory, North Dakota has one of the highest potentials for generating electricity from the wind. Harnessing wind for electricity provides our country with a clean, endless power source.

One of the most important benefits of wind power, according to Green Living Ideas website, is that wind power is the least expensive of all other forms of **alternative** energy. Wind turbines generate electricity at around 5 cents per kWh (Kilowatt Hour), which is comparable to the new coal and/or oil burning power plants. The costs are projected to decline even more as technology improves, and this is very important because most of the cost with wind power is in manufacturing. Once the wind turbines are in place there is little cost to maintain and wind power is free and non-toxic.

North Dakota Senator Kent Conrad issued this statement with regard to energy: "Our nation faces a growing energy challenge. We must chart a new course toward energy independence. North Dakota is home to vast resources of traditional energy sources, such as oil, natural gas, and lignite, and has great potential to increase our production of energy from renewable sources, such as wind and biodiesel. I am committed to a national plan for greater energy independence - a plan that makes North Dakota a national energy leader."*

We firmly believe that now is the time to put some of these alternative power sources into place before the demand exceeds the capability to produce the power in a timely, more cost-effective manner. Thank you for your consideration.

Sincerely,

Gerald and Arlis Waltos

*This statement was taken from Senator Kent Conrad's website regarding Energy.

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

>>> Vern Anderson <vernaswede@hotmail.com> 7/26/2011 12:14 PM >>>
Mr. Matt Marsh
Environmental Protection
Specialist

Thank you for your recent letter, I am a land owner in the proposed Wilton IV Wind Farm. I have NO problems at all with this project. I have only one comment, it appears that I may have at least one wind turbine with two more in close proximity. My wish is that these two would be put on my land as well.

Legal description of my land: Ghylin Twn. 142N R78W - Sec. 23 - N1/2

Sincerly

Vern A. Anderson

Western
AREA POWER
ADMINISTRATION

Wilton IV Wind Open House
July 26, 2011, 5-8 PM Wilton Memorial Hall
Public Comment Meeting
Environmental Impact Statement (EIS)

Thank you for your interest in the proposed Wilton IV Wind EIS. Please complete the appropriate sections of this form to be included on the EIS mailing list and/or to provide comments. Written comments can be submitted at the Scoping Meeting, faxed to (406) 255-2900, mailed to Mr. Matt Marsh, Western Area Power Administration, Upper Great Plains Customer Service Office, P.O. Box 35800, Billings, MT 59107-5800 or sent to **mmarsh@wapa.gov.** To be included in our public comment process, please ensure your comments are postmarked or turned in by **August 20, 2011.**

- ☐ I would like a paper copy of the Draft EIS when it becomes available.
- ☒ I would like a Compact Disk (CD) of the EIS when it becomes available.
- ☐ Just email me the web link to the EIS when it becomes available. (Quickest and Preferred method)

Please Print Contact Info Below

Name: Tom Aichele	Organization:
E-mail address: [redacted]	Daytime Phone No. *(optional)*: [redacted]
Street Address: [redacted]	City / State / Zip Code: [redacted]

Please indicate any questions, comments or concerns you have about the proposed project in the comment section below (continue on separate sheet if necessary).

Thank you for your time and interest.

Western
AREA POWER
ADMINISTRATION

Wilton IV Wind Open House
July 26, 2011, 5-8 PM Wilton Memorial Hall
Public Comment Meeting
Environmental Impact Statement (EIS)

Thank you for your interest in the proposed Wilton IV Wind EIS. Please complete the appropriate sections of this form to be included on the EIS mailing list and/or to provide comments. Written comments can be submitted at the Scoping Meeting, faxed to (406) 255-2900, mailed to Mr. Matt Marsh, Western Area Power Administration, Upper Great Plains Customer Service Office, P.O. Box 35800, Billings, MT 59107-5800 or sent to **mmarsh@wapa.gov.** To be included in our public comment process, please ensure your comments are postmarked or turned in by **August 20, 2011.**

- ☐ I would like a paper copy of the Draft EIS when it becomes available.
- ☐ I would like a Compact Disk (CD) of the EIS when it becomes available.
- ☐ Just email me the web link to the EIS when it becomes available. (Quickest and Preferred method)

Please Print Contact Info Below

Name:	Organization:
Terry Vesey	
E-mail address:	Daytime Phone No. *(optional)*: [redacted]
Street Address: [redacted]	City / State / Zip Code:

Please indicate any questions, comments or concerns you have about the proposed project in the comment section below (continue on separate sheet if necessary).

When salesman came there was 1-2 towers to be put within ½ mile of place. I have 5+ the noise on a bad day is like I live next to a busy Freeway. It is not worth what I get paid. The decipel system they have is BULL tell it like it is. If I had any clue how loud they can be I would have had no part of this.

Thank you for your time and interest.

Western
AREA POWER
ADMINISTRATION

Wilton IV Wind Open House
July 26, 2011, 5-8 PM Wilton Memorial Hall
Public Comment Meeting
Environmental Impact Statement (EIS)

Thank you for your interest in the proposed Wilton IV Wind EIS. Please complete the appropriate sections of this form to be included on the EIS mailing list and/or to provide comments. Written comments can be submitted at the Scoping Meeting, faxed to (406) 255-2900, mailed to Mr. Matt Marsh, Western Area Power Administration, Upper Great Plains Customer Service Office, P.O. Box 35800, Billings, MT 59107-5800 or sent to **mmarsh@wapa.gov.** To be included in our public comment process, please ensure your comments are postmarked or turned in by **August 20, 2011.**

- ☒ I would like a paper copy of the Draft EIS when it becomes available.
- ☐ I would like a Compact Disk (CD) of the EIS when it becomes available.
- ☐ Just email me the web link to the EIS when it becomes available. (Quickest and Preferred method)

Please Print Contact Info Below

Name:	Organization:
Darrell Schafer	
E-mail address:	Daytime Phone No. *(optional):* [redacted]
Street Address: [redacted]	City / State / Zip Code: [redacted]

Please indicate any questions, comments or concerns you have about the proposed project in the comment section below (continue on separate sheet if necessary).

We are landowners in the proposed Wilton IV addition & we also have a gravel pit on our land. We have always been excited about the project.

Thanks

Thank you for your time and interest.

Western
AREA POWER
ADMINISTRATION

Wilton IV Wind Open House
July 26, 2011, 5-8 PM Wilton Memorial Hall
Public Comment Meeting
Environmental Impact Statement (EIS)

Thank you for your interest in the proposed Wilton IV Wind EIS. Please complete the appropriate sections of this form to be included on the EIS mailing list and/or to provide comments. Written comments can be submitted at the Scoping Meeting, faxed to (406) 255-2900, mailed to Mr. Matt Marsh, Western Area Power Administration, Upper Great Plains Customer Service Office, P.O. Box 35800, Billings, MT 59107-5800 or sent to **mmarsh@wapa.gov.** To be included in our public comment process, please ensure your comments are postmarked or turned in by **August 20, 2011.**

- ☑ I would like a paper copy of the Draft EIS when it becomes available.
- ☐ I would like a Compact Disk (CD) of the EIS when it becomes available.
- ☐ Just email me the web link to the EIS when it becomes available. (Quickest and Preferred method)

Please Print Contact Info Below

Name:	Organization:
Diane & Bernie Flansburg	
E-mail address: [redacted]	Daytime Phone No. *(optional):*
Street Address: [redacted]	City / State / Zip Code:

Please indicate any questions, comments or concerns you have about the proposed project in the comment section below (continue on separate sheet if necessary).

Thank you for your time and interest.

Western
AREA POWER
ADMINISTRATION

Wilton IV Wind Open House
July 26, 2011, 5-8 PM Wilton Memorial Hall
Public Comment Meeting
Environmental Impact Statement (EIS)

Thank you for your interest in the proposed Wilton IV Wind EIS. Please complete the appropriate sections of this form to be included on the EIS mailing list and/or to provide comments. Written comments can be submitted at the Scoping Meeting, faxed to (406) 255-2900, mailed to Mr. Matt Marsh, Western Area Power Administration, Upper Great Plains Customer Service Office, P.O. Box 35800, Billings, MT 59107-5800 or sent to **mmarsh@wapa.gov.** To be included in our public comment process, please ensure your comments are postmarked or turned in by **August 20, 2011.**

☒ I would like a paper copy of the Draft EIS when it becomes available.
☒ I would like a Compact Disk (CD) of the EIS when it becomes available.
☐ Just email me the web link to the EIS when it becomes available. (Quickest and Preferred method)

Please Print Contact Info Below

Name: HOWARD + OLIVE FRICKE	Organization:
E-mail address: [redacted]	Daytime Phone No. *(optional):* [redacted]
Street Address: [redacted]	City / State / Zip Code:

Please indicate any questions, comments or concerns you have about the proposed project in the comment section below (continue on separate sheet if necessary).

In favor of Croft project.

Thank you for your time and interest.

Western
AREA POWER
ADMINISTRATION

Wilton IV Wind Open House
July 26, 2011, 5-8 PM Wilton Memorial Hall
Public Comment Meeting
Environmental Impact Statement (EIS)

Thank you for your interest in the proposed Wilton IV Wind EIS. Please complete the appropriate sections of this form to be included on the EIS mailing list and/or to provide comments. Written comments can be submitted at the Scoping Meeting, faxed to (406) 255-2900, mailed to Mr. Matt Marsh, Western Area Power Administration, Upper Great Plains Customer Service Office, P.O. Box 35800, Billings, MT 59107-5800 or sent to **mmarsh@wapa.gov.** To be included in our public comment process, please ensure your comments are postmarked or turned in by **August 20, 2011.**

☑ I would like a paper copy of the Draft EIS when it becomes available.
☑ I would like a Compact Disk (CD) of the EIS when it becomes available.
☑ Just email me the web link to the EIS when it becomes available. (Quickest and Preferred method)

Please Print Contact Info Below

Name: Steve & Kelly Bauer	Organization:
E-mail address: [redacted]	Daytime Phone No. *(optional)*: [redacted]
Street Address: [redacted]	City / State / Zip Code: [redacted]

Please indicate any questions, comments or concerns you have about the proposed project in the comment section below (continue on separate sheet if necessary).

1. Existing roads are still in poor (very poor) condition from the last project (phase). ~~5th~~ (158th)
2. Why not use existing section lines and trails instead of cutting into the land with new roads?
3. Are you open to moving the towers to more suited pieces of land (not a good farm quarter)?
4. Contract stability and longevity
5. Hwy 36 does not have any sides to the road so its very dangerous for transporting the turbines.

Thank you for your time and interest.

6. ? Decrease the value of my home.
7. How liable is the property owner once the towers are on their land.

Western
AREA POWER
ADMINISTRATION

Wilton IV Wind Open House
July 26, 2011, 5-8 PM Wilton Memorial Hall
Public Comment Meeting
Environmental Impact Statement (EIS)

Thank you for your interest in the proposed Wilton IV Wind EIS. Please complete the appropriate sections of this form to be included on the EIS mailing list and/or to provide comments. Written comments can be submitted at the Scoping Meeting, faxed to (406) 255-2900, mailed to Mr. Matt Marsh, Western Area Power Administration, Upper Great Plains Customer Service Office, P.O. Box 35800, Billings, MT 59107-5800 or sent to **mmarsh@wapa.gov.** To be included in our public comment process, please ensure your comments are postmarked or turned in by **August 20, 2011.**

☑ I would like a paper copy of the Draft EIS when it becomes available.
☑ I would like a Compact Disk (CD) of the EIS when it becomes available.
☐ Just email me the web link to the EIS when it becomes available. (Quickest and Preferred method)

Please Print Contact Info Below

Name:	Organization:
David L. Coleman	Gaylin Township Chairman
E-mail address:	Daytime Phone No. *(optional)*:
Street Address:	City / State / Zip Code:
[redacted]	[redacted]

Please indicate any questions, comments or concerns you have about the proposed project in the comment section below (continue on separate sheet if necessary).

Thank you for your time and interest.

Western AREA POWER ADMINISTRATION

Wilton IV Wind Open House
July 26, 2011, 5-8 PM Wilton Memorial Hall
Public Comment Meeting
Environmental Impact Statement (EIS)

Thank you for your interest in the proposed Wilton IV Wind EIS. Please complete the appropriate sections of this form to be included on the EIS mailing list and/or to provide comments. Written comments can be submitted at the Scoping Meeting, faxed to (406) 255-2900, mailed to Mr. Matt Marsh, Western Area Power Administration, Upper Great Plains Customer Service Office, P.O. Box 35800, Billings, MT 59107-5800 or sent to **mmarsh@wapa.gov.** To be included in our public comment process, please ensure your comments are postmarked or turned in by **August 20, 2011.**

- ☐ I would like a paper copy of the Draft EIS when it becomes available.
- ☐ I would like a Compact Disk (CD) of the EIS when it becomes available.
- ☑ Just email me the web link to the EIS when it becomes available. (Quickest and Preferred method)

Please Print Contact Info Below

Name:	Organization:
MARC & GERALYN LAURIE	
E-mail address: [redacted]	Daytime Phone No. *(optional)*: [redacted]
Street Address: [redacted]	City / State / Zip Code: [redacted]

Please indicate any questions, comments or concerns you have about the proposed project in the comment section below (continue on separate sheet if necessary).

Thank you for your time and interest.

August 8, 2011

Western Area Power Administration
Upper Great Plains Customer Service Office
P.O. Box 35800
Billings, Montana 59107-5800

Attn: Mr. Matt Marsh

Dear Mr. Marsh:

This letter is in reference to the proposed Wilton IV Wind EIS project, specifically the locations of the towers in Crofte Township, Baldwin, North Dakota.

We live in 141N, R79W, Section 13 and the turbines that effect us this most are 3 turbines in the extreme SE corner of Section 13 and I believe the turbines planned in Section 11 or 12, but as a whole, I'm concerned with all turbines in Crofte Township. We are a family of 6, kids ages 7 to 14. We moved to North Dakota for the quiet rural life that we found in Baldwin, North Dakota. My wife home school's our children and I am employed as a Special Agent with the Drug Enforcement Administration. We own 10 horses, 4 dogs, cats, rabbits, and a guinea pig. We have 5 neighbors within ½ mile of us, three families have home businesses, two of which are raising and training horses. A little further away, we have several other neighbors that are involved with raising cattle and farming. All of the neighbors are concerned with the change in our environment, due to the possibility of the agricultural land surrounding us, becoming the industrial use. We are concerned with the visual effects of the wind towers as it relates to our property values; the sound emanating from the wind towers that affects our physical health; and the possibility of injury due to the malfunction of the wind towers.

First, malfunctions do occur with these industrial machines. For instance:

- June 3, 2009 news report from KFYR-TV 5, titled Wind farm blade bent, a blade on one of the towers near Wilton, ND bent in half. NextEra Spokesman Steve Stengel said that blades may occasionally have problems after things like lightning strikes, but that is the exception rather than the rule.

- May 08, 2010 article in the Daily Chronicle by Dana Herra, titled Turbine's blade damage unusual, which was another blade bent, with Stengel stating "that type of failure unusual".

- March 20, 2011 a report by a family writing a blog, Our life with Dekalb Wind Turbines reports and documents another bent blade.

- March 24, 2011 article titled Rugby wind turbine accident pegged to bolt failure in the Bismarck Tribune

- May 2, 2011 article titled Two wind turbines suffer damage, one in Wilton, North Dakota and the other in Minot, North Dakota, both had bent blades.

- And more examples of malfunctions come from a letter written by William Palmer, in Ontario, Canada, titled The Social & Economic Impact of Rural Wind Farms Related to Canada's Energy Future, submitted to all Canadian Senators late 2009 to Early 2010. Contained in this letter, are numerous malfunctions of wind turbines throughout the world.

- I've also reviewed a document from Caithness Windfarm Information Forum which documents over 1,000 cases of wind turbine accidents from 1991 to June 2011.

- Finally, I surveyed the area around the incident reported on May 2, 2011 in Wilton, North Dakota and I documented pieces of the blade up to ½ mile from the turbine. Some of the pieces, made of fiberglass, were up to one foot in diameter, jagged edges, capable of causing serious injury.

Throughout the course of the last several years, I've researched the environmental impact that wind turbines cause. Recently I have read an article in the Energy Tribune, written by Robert Bryce, titled T. Boone's Windy Misadventure And the Global Backlash Against Wind Energy. A read of this article summarizes many of my thoughts and points to sources that support anti-wind energy. Of course, anyone who has any knowledge of wind energy knows that some 3 years ago, T. Boone Pickens was a big proponent of wind energy, but not so much now. As stated in the article, Pickens finds that natural gas is a better avenue for inexpensive energy and "a growing backlash against industrial wind projects due to concerns about visual blight and noise, increasing concerns about the murderous effect that wind turbines have on bats and birds....and a new study that finds that wind energy's ability to cut carbon dioxide emissions have been overstated".

The article also points out the following:

- "Clean" jobs are costing us a lot of money. For example, "Texas Comptroller Susan Combs reported that tax breaks for wind projects...cost nearly $1.6 million per job.

- Opposition to wind energy continues to grow... "The European Platform Against Windfarms now has 485 signatory organizations from 22 European countries. In the UK, where fights are raging against industrial wind projects in Wales, Scotland, and elsewhere, some 250 anti-wind groups have been formed. In Canada alone, the province of Ontario has more than 50 anti-wind groups. The United States has about 170 anti-wind groups."

- More and more people are coming forward with stories of health problems caused by the noise coming from wind turbines that had been built by their homes.

This article addresses our worries to our physical health:

- "In the August 2011 issue of the journal Bulletin of Science, Technology &Society, has nine articles that address various aspects of the turbine noise issue. The most important: low-frequency noise, also known as infrasound."

    - One the article that is a concern for me discusses the effects on my school aged children is the article titled The Noise From Wind Turbines: Potential Adverse Impacts on Children's Well-being by Arline L. Bronzaft. The following is an abstract of that article: "Research linking loud sounds to hearing loss in youngsters is now

widespread, resulting in the issuance of warnings to protect children's hearing. However, studies attesting to the adverse effects of intrusive sounds and noise on children's overall mental and physical health and well-being have not received similar attention. This, despite the fact that many studies have demonstrated that intrusive noises such as those from passing road traffic, nearby rail systems, and overhead aircraft can adversely affect children's cardiovascular system, memory, language development, and learning acquisition. While some schools in the United States have received funds to abate intrusive aircraft noise, for example, many schools still expose children to noises from passing traffic and overhead aircraft. Discussion focuses on the harmful effects of noise on children, what has to be done to remedy the situation, and the need for action to lessen the impacts of noise from all sources. Furthermore, based on our knowledge of the harmful effects of noise on children's health and the growing body of evidence to suggest the potential harmful effects of industrial wind turbine noise, it is strongly urged that further studies be conducted on the impacts of industrial wind turbines on their health, as well as the health of their parents, before forging ahead in siting industrial wind turbines.

- Two other articles include: Toward a Case Definition of Adverse Health Effects in the Environs of Industrial Wind Turbines: Facilitating a Clinical Diagnosis AND WindVOiCe, a Self-Reporting Survey: Adverse Health Effects, Industrial Wind Turbines, and the Need for Vigilance Monitoring.

  - "Abstract for the first article is as follows: Internationally, there are reports of adverse health effects (AHE) in the environs of industrial wind turbines (IWT). There was multidisciplinary confirmation of the key characteristics of the AHE at the first international symposium on AHE/IWT. The symptoms being reported are consistent internationally and are characterized by crossover findings or a predictable appearance of signs and symptoms present with exposure to IWT sound energy and amelioration when the exposure ceases. There is also a revealed preference of victims to seek restoration away from their homes. This article identifies the need to create a case definition to establish a clinical diagnosis. A case definition is proposed that identifies the sine qua non diagnostic criteria for a diagnosis of adverse health effects in the environs of industrial wind turbines. Possible, probable, and confirmed diagnoses are detailed. The goal is to foster the adoption of a common case definition that will facilitate future research efforts."

  - Abstract for the second article is as follows: "Industrial wind turbines have been operating in many parts of the globe. Anecdotal reports of perceived adverse health effects relating to industrial wind turbines have been published in the media and on the Internet. Based on these reports, indications were that some residents perceived they were experiencing adverse health effects. The purpose of the WindVOiCe health survey was to provide vigilance monitoring for those wishing to report their perceived adverse health effects. This article discusses the results of a self reporting health survey regarding perceived adverse health effects associated with industrial wind turbines."

Finally, our home is our biggest investment. Our worry is the proximity of the wind turbines will negatively affect our property value. I would like to point to three studies:

1. The Impact of Wind Power Projects on Residential Property Values in the United States: A Multi-Site Hedonic Analysis, conducted by Ernest Orlando Lawrence, Berkeley National Laboratory, funded by the Office of Energy Efficiency and Renewable Energy of the U.S. Department of Energy, dated December 2009. In the abstract of this study, the concern for negative impact on property values is not an unreasonable concern, given property value impacts that have been found near high voltage transmission lines and other electric generation facilities.

    a. Within the conclusion the author cannot dismiss the possibility that individual homes or small numbers of homes have been or could be negatively impacted.

    b. "Finally, it would be useful to conduct a survey of those homeowners living close to existing wind facilities, and especially those residents who have bought and sold homes in proximity to wind facilities after facility construction, to assess their opinions on the impacts of wind project development on their home purchase and sales decision."

2. I have reviewed a study by Appraisal Group One in Wisconsin, dated September 09, 2009. The conclusion of the study is as follows: "After reviewing articles and studies on wind energy, wind turbines appear to have a negative impact on the property values, health, and quality of life of residents in close proximity. Of the studies that found no impact on property value, nearly all were funded by wind farm developers or renewable energy advocacy groups. Of the studies and reports showing property loss, the average negative effect is -20.7%. It is equally reasonable to conclude that some residents in close proximity to wind turbines experience genuine negative health effects from Low Frequency Noise, infrasound and blade flicker. Of the studies and reports cited, an average setback of little over a mile should significantly lessen detrimental health effects. In addition to noise and flicker issues, disrupted TV and cell phone receptions contribute to negatively impact the quality of life for residents living in close proximity to wind turbines."

3. I have reviewed a study by McCann Appraisal, LLC in Illinois dated June 08, 2010. The conclusion of the study is as follows:

    a. Residential property values are adversely and measurably impacted by close proximity of industrial-scale wind energy turbine projects to the residential properties, with value losses measured up to 2-miles from the nearest turbine(s) in some instances. **Our residence will be within 1800 feet of 3 to 7 proposed turbines.**

    b. Impacts are most pronounced within "footprint" of such projects.

    c. Noise and sleep disturbance issues are mostly affecting people within 2 miles of the nearest turbines and 1 mile distances are commonplace.

d. Real estate sale data typically reveals a range of 25% to approximately 40% of the value loss.

e. Serious impact to the "use & enjoyment" of many homes is an on-going occurrence, and many people are on record as confirming they have rented other dwellings...in response for use on nights when noise levels are increased well above ambient background noise and render their existing homes untenable. **Our family spends many hours outside of our home, riding horses, jumping on the trampoline, barbecuing, gardening, and enjoying the peaceful environment.**

f. **"Reports often cited by industry in support of claims that there is no property value, noise or health impacts are often mischaracterized, misquoted and/or are unreliable. The two most recent reports touted by wind developers and completed in December 2009 contain executive summaries that are so thoroughly cross-contingent that they are better described as disclaimers of the studies rather than solid, scientifically supported conclusions. Both reports ignore or fail to study very relevant and observable issues and trends."**

g. The approval of wind energy projects within close proximity to occupied homes is tantamount to an inverse condemnation, or regulatory taking of private property rights, as the noise and impacts are in some respects a physical invasion, an easement in gross over neighboring properties, and the direct impacts reduce property values and the rights of nearby neighbors.

I would also like to point out that a representative from NextEra has contacted me and provided me with a copy non-participatory land owner agreement. The point of the agreement was to provide the non-participating landowner with a payment for all industrial wind towers within a certain distance of our residence. As part of the agreement, all of the problems I have addressed and more were included in the agreement, i.e. low frequency noise, shadow flicker, negative valuation of homes were included in the agreement. By signing the agreement, one relinquishes the right to have any of those problems addressed by NextEra. That agreement was an implied acknowledgment by NextEra, these problems do occur and for that reason, I chose not to sign that agreement.

Finally, on August 08, 2011, I spoke with Terry Thomsen, a supervisor on the Crofte Township Board. Mr. Thomsen told me that he had been contacted by registered letter regarding the Board's position on industrial wind turbines constructed in Crofte Township and the Township's recommendation of a Special Use Permit being issued to NextEra to complete the project. Mr. Thompsen told me that he needed to contact the residents of Crofte Township in regards to their opinion. Mr. Thomsen told me that he had contacted 42 of the 66 housing units in Crofte Township and the results were that 34 housing units **DID NOT WANT INDUSTRIAL WIND TURBINES IN CROFTE TOWNSHIP** and only 8 housing units wanted these turbines constructed. On August 10, 2011, Mr. Thomsen reported his findings to the Burleigh County Planning Commissioners. (Mr. Thomsen can be contacted at (701) 673-3490.

Final points to remember:

- As for anticipated malfunctioning of the turbines, I believe there are a substantial evidence that there are going to be continued malfunctioning of the wind turbines, placing my family at risk of injury.

- As for health risks, I believe that there is substantial evidence that would lead to an impact of the environment surrounding my home that places a significant increase of health problems for my family and animals, also making a substantial impact on my family because we home educate our children and have done so for the past 4 years.

- As for the negative impact to our property value, the initial report stated that it would be studies have been completed and substantiate the conclusion that my property values will decrease by 30% or more.

- In Robert Bryce's article, his last paragraph is "You see, people like Boone Pickens are eager to have wind turbines and transmission lines put up on other people's land, not theirs. In 2008, Pickens declared that his 68,000 acre ranch located in the Texas Panhandle, one of America's windiest regions, will not sport a single turbine. Pickens stated: I'm not going to have the windmills on my ranch...They're ugly."

- I have written about the problems that are associated with Industrial Wind Projects that many in the wind energy industry dismiss as problems associated to industrial wind turbines, saying there is not any evidence. To that point, I would like to direct your attention to the Participation Option Agreement that has been presented to me as an answer to NextEra realizing that Industrial Wind Turbines will negatively affect the value of my home and potentially have harmful effects to my ability to enjoy the quality of life I anticipated when I purchased my home.

- Here is an excerpt of that agreement, which is paragraph 9: "Owner hereby releases Operator from any and all claims for damages arising from any injury or harm or conditions related to the Property, including but not limited to, any harm or loss due to nuisance, trespass, disturbance, Effects, diminishment of the value of the Property, proximity of the Wind Farm to Owner's Property and/or residence, diminishment or interference with the ability to use or enjoy the Property, and any other injury or harm, of whatever kind or character, to persons or property, whether now known or unknown, or which may appear or develop in the future, caused or alleged to be caused by the Wind Farm or by Operator, its parent companies, affiliates, successors, assigns, whether claimed or not claimed, or which hereafter might be brought by Owner or any of their successors and assigns."

    - The definition of "Effects" is listed in a previous paragraph, paragraph 2, which states: "Owner grants to Operator a non-exclusive easement for sounds, visual, light, flicker, shadow, vibration, wake, electromagnetic, electrical and radio frequency interference, and any other effects (collectively "Effects") on the Property caused or alleged to be caused by the Wind Farm.

- **Based on NextEra choosing to include these paragraphs in their Participation Option Agreement, I don't think it's unreasonable to assume that they believe that there is a factual basis or that there will be significant evidence that a Court will determine that there are harmful effects of Industrial Wind Turbines placed close to residences.**

- The final point is **THE MAJORITY OF THE RESIDENTS IN CROFTE TOWNSHIP DO NOT WANT INDUSTRIAL WIND TURBINES IN THE TOWNSHIP. ALL ARE CONCERNED AS TO THE ECONOMIC AND ENVIRONMENTAL IMPACTS OF THIS PROJECT.**

All resources for the information I've provided are maintained by us and can be provided upon request. A copy of the Participation Option Agreement is attached for your review.

I am requesting that your agency recommend that NextEra's request be denied, based on the social, economic, and environmental impact of the proposed project to the residents of Crofte Township.

Sincerely,

Marc Laurie

[redacted]

Geralyn Laurie

[redacted]

Western AREA POWER ADMINISTRATION

Wilton IV Wind Open House
July 26, 2011, 5-8 PM Wilton Memorial Hall
Public Comment Meeting
Environmental Impact Statement (EIS)

Thank you for your interest in the proposed Wilton IV Wind EIS. Please complete the appropriate sections of this form to be included on the EIS mailing list and/or to provide comments. Written comments can be submitted at the Scoping Meeting, faxed to (406) 255-2900, mailed to Mr. Matt Marsh, Western Area Power Administration, Upper Great Plains Customer Service Office, P.O. Box 35800, Billings, MT 59107-5800 or sent to **mmarsh@wapa.gov.** To be included in our public comment process, please ensure your comments are postmarked or turned in by **August 20, 2011.**

- ☐ I would like a paper copy of the Draft EIS when it becomes available.
- ☐ I would like a Compact Disk (CD) of the EIS when it becomes available.
- ☐ Just email me the web link to the EIS when it becomes available. (Quickest and Preferred method)

Please Print Contact Info Below

Name: Michael Wald	Organization:
E-mail address:	Daytime Phone No. *(optional)*: [redacted]
Street Address: [redacted]	City / State / Zip Code: [redacted]

Please indicate any questions, comments or concerns you have about the proposed project in the comment section below (continue on separate sheet if necessary).

I am against the Proposed Project. I don't feel these towers should be placed in Crokt township. When there is townships near by with fewer residents that would be impacted. Yes there was twenty land owners that signed up for the project. But there are also over 32 residents in Crokt that are against the Project. What gives a company the right to move into a area and construct a project that clearly the majority of residents don't want. There is alternative options for the project that would impact fewer people.

Thank you for your time and interest.

Besides most people know that with out heavy government funding wind farms would not be constructed. With our nation facing bankrupcy why are you wasting the tax payers money on an inefficient energy source.

Most people have worked hard to build there homes and lives out here. Now you are lowering these peoples property values. We know that is true because why would you offer payouts to people within certain distances of these towers. That land value for most people is there retirement. That money might be the difference between buying food or medicine for some of these people.

I don't know what effects there will be on me or my family health wise. I have seen reports from both sides of the research. But as a bussiness ower why take a chance on peoples health and well being and keep the towers away from people. Especialy when there is plenty of land around us that wouldn't affect peoples life styles or health.

Michael Wald

Western
AREA POWER
ADMINISTRATION

Wilton IV Wind Open House
July 26, 2011, 5-8 PM Wilton Memorial Hall
Public Comment Meeting
Environmental Impact Statement (EIS)

Thank you for your interest in the proposed Wilton IV Wind EIS. Please complete the appropriate sections of this form to be included on the EIS mailing list and/or to provide comments. Written comments can be submitted at the Scoping Meeting, faxed to (406) 255-2900, mailed to Mr. Matt Marsh, Western Area Power Administration, Upper Great Plains Customer Service Office, P.O. Box 35800, Billings, MT 59107-5800 or sent to **mmarsh@wapa.gov.** To be included in our public comment process, please ensure your comments are postmarked or turned in by **August 20, 2011.**

- ☐ I would like a paper copy of the Draft EIS when it becomes available.
- ☐ I would like a Compact Disk (CD) of the EIS when it becomes available.
- ☐ Just email me the web link to the EIS when it becomes available. (Quickest and Preferred method)

Please Print Contact Info Below

Name:	Organization:
Raymond Wald	Wald ranch
E-mail address:	Daytime Phone No. *(optional)*: [redacted]
Street Address: [redacted]	City / State / Zip Code: [redacted]

Please indicate any questions, comments or concerns you have about the proposed project in the comment section below (continue on separate sheet if necessary).

Good for you guys forcing yourself into a rural residential area pitting neighbor against neighbor at your payers expense and if that doesn't tap it off your going to destroy my neighbors property, cause health issues willfully by putting those towers in their backyard and move in Croft township section 13 and destroy their businesses that they have established. When that neighbor that is going to benefit from those towers →

Thank you for your time and interest.

talks around the neighborhood. I don't want to see them or hear them, but its ok to put them in my neighbors backyard or mine, its not ok with all the vast openness that we have in our state and what about the health issues that going to come up, who pays for that. you guys or if a wind or tornado inflicts damage on people or property again who pays, you guys, move the towers out of this area, so you don't have this hanging over your heads, based on what need or greed.

thank you

Ray Wall

Western
AREA POWER
ADMINISTRATION

Wilton IV Wind Open House
July 26, 2011, 5-8 PM Wilton Memorial Hall
Public Comment Meeting
Environmental Impact Statement (EIS)

Thank you for your interest in the proposed Wilton IV Wind EIS. Please complete the appropriate sections of this form to be included on the EIS mailing list and/or to provide comments. Written comments can be submitted at the Scoping Meeting, faxed to (406) 255-2900, mailed to Mr. Matt Marsh, Western Area Power Administration, Upper Great Plains Customer Service Office, P.O. Box 35800, Billings, MT 59107-5800 or sent to **mmarsh@wapa.gov.** To be included in our public comment process, please ensure your comments are postmarked or turned in by **August 20, 2011.**

- ☐ I would like a paper copy of the Draft EIS when it becomes available.
- ☐ I would like a Compact Disk (CD) of the EIS when it becomes available.
- ☐ Just email me the web link to the EIS when it becomes available. (Quickest and Preferred method)

Please Print Contact Info Below

Name:	Organization:
Joyce Wald	Wald Ranch
E-mail address:	Daytime Phone No. *(optional):*
	[redacted]
Street Address:	City / State / Zip Code:
[redacted]	[redacted]

Please indicate any questions, comments or concerns you have about the proposed project in the comment section below (continue on separate sheet if necessary).

You can take these wind towers and stick them up your ass.
You shall go to Hell, because you don't care about others. Haven't you learned anything yet in your lives. Don't Expect others to help you in your time of need, What ever help that may be.

Thank you for your time and interest.

Joyce Wald