

Appendix C-0: Summary of Wildlife Studies

June 7, 2013

Ms. Melissa Peterson
Project Manager
EDF Renewable Energy
10 Second Street NE, Suite 400
Minneapolis, MN 55413

*Re: Summary of Field and Desktop Studies Associated with the EDF Renewable Energy
Stoneray Wind Project
Burns & McDonnell Project No. 62823*

Dear Melissa Peterson:

Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) is providing environmental support services for the EDF Renewable Energy (EDF) proposed 105-megawatt (MW) wind energy facility, the Stoneray Wind Project (Project), to be located in Pipestone and Murray counties in southwestern Minnesota. The Project area is generally located east of Pipestone, southeast of Holland, west of Lake Wilson, with Woodstock, Minnesota within the Project area (Figure 1). The Project will consist of up to 62 wind turbine generators (WTGs), access roads, an underground electrical collector system, and a small electrical switchyard situated within the Project area (Figure 2). The Project area encompasses approximately 29,500 acres. The original Project area was approximately 22,400 acres in size. Only a small fraction of the expanded Project area will be disturbed for construction, and an even smaller portion will host Project facilities. The expansion of the Project area will allow greater flexibility and provide for alternative WTG locations to be considered. Sensitive natural resources, such as expansive wetlands, prairie remnants, wet meadows, etc. would be avoided and all state set-back requirements would be incorporated into infrastructure layout.

For the purpose of providing summary language for the Large Wind Energy Conversion System (LWECS) application for the Minnesota Public Utilities Commission (PUC), Burns & McDonnell has prepared brief summaries of the eight studies that have been completed from 2011 to 2013. These studies were conducted by Burns & McDonnell on behalf of EDF.

Desktop Studies

Four desktop studies were completed for the initial Project area during the period of 2011 to June 2013 and are briefly summarized below:

1. Avian, Bat, and Sensitive Species Risk Assessment
2. Desktop Wetlands Assessment and Regulatory Review
3. Initial Desktop Sensitive Habitat Assessment
4. Desktop Threatened and Endangered Species Habitat Assessment and Proposed Field Survey

Avian, Bat, and Sensitive Species Risk Assessment

There are four species federally-listed or candidates for federal listing and 45 state-listed species for Pipestone and Murray counties. Three of these species (Dakota skipper, poweshiek skipperling, and Topeka shiner) have been recorded within the Project boundary. Additionally, the poweshiek skipperling and Topeka shiner have been recorded within one mile of the Project boundary. Bald and golden eagles have not been recorded within the Project area. A variety of avian species protected by the MBTA likely use the Project area during seasonal migrations or throughout the year.

The State of Minnesota lists 45 species with various levels of state oversight in Pipestone and Murray counties. There are no state endangered or threatened species that have occurrences in the Project area. Six non-state-protected special concern species and two state-managed communities have also been recorded within the Project area, which include the dry hill prairie (southern), and a calcareous fen. The special concern and state monitored species included marsh arrow-grass, northern grasshopper mouse, plains topminnow, regal fritillary, Topeka shiner, and upland sandpiper. The Topeka shiner is federally protected under the ESA and upland sandpiper is federally protected under the MBTA. Numerous bat species likely use the Project area during their migration, foraging, or reproductive periods of the year.

Based on this desktop review, it is anticipated that the Project would have a low risk to most federal and state monitored species listed for Pipestone and Murray counties. However, for some species, the risk could be moderate depending upon the final location of Project facilities and the type of habitats that could be impacted. Although impacts to avian and bats species are anticipated to be relatively low, the extent of diversity or abundance of these species that may inhabit or migrate through the Project area are not well known. To identify potential sensitive habitats within and adjacent to the Project footprint and proposed disturbance areas that could host sensitive species, particularly native prairie remnants, wetlands, calcareous fens, or wooded areas, a field habitat assessment should be conducted. In addition, to get a better understanding of avian and bat use for the area, avian studies (*i.e.*, raptor stick nest survey and avian point count survey) and bat studies (*i.e.*, acoustical surveys) may need to be conducted in the Project area where suitable habitat occurs.

Desktop Wetlands Assessment and Regulatory Review

As currently designed, the turbine array is not anticipated to impact any wetland resources from a desktop perspective. Although the majority of the Project area is comprised of cultivated lands, there are some areas within the Project area that contain wetlands or other protected water resources. These wetlands should be avoided or impacts should be minimized where possible when further developing the Project layout. Other wetlands and protected water resources could also exist within the Project area that not identified as a part of this study. Desktop reviews are not always a good indication of where wetlands or protected resources may occur due to limited resources. Data used for the desktop review such as the NWI, NLCD, and SSURGO is often outdated and in some cases inaccurate when compared with results from field surveys. Additionally, the desktop review does not account for common variables in the data, which could include seasonal changes in vegetation, climate, and land use change. Therefore, at a minimum,

a wetland delineation should be performed for areas that will host Project facilities and that will be disturbed during construction of the Project.

Whenever working in areas that contain wetlands and other waters of the U.S. it is important to avoid and minimize impacts or disturbances where possible. Impacts to wetlands and watercourses increase the potential for adversely impacting sensitive or protected species or their preferred habitats, increase the likelihood of the Project needing federal, state, or local permits, and increase coordination for Project development with pertinent natural resource agencies, such as USFWS, MDNR, or county regulatory agencies. Still, it is likely that some impacts to wetlands and other waters of the U.S. will occur on this Project based on the large scale. In the event that impacts do occur, applicable permitting and coordination with federal, state, and local agencies will be required.

To reduce the probability of impacting wetlands and other waters of the U.S., the following should be considered for further developing an array and layout for the Project:

- Locate facilities away from known wetlands and other waters of the U.S.
- Avoid or minimize land disturbance impacts to areas along streams or known wetland areas
- Conduct a wetland delineation to identify the boundaries of any wetland and other waters of the U.S.
- Bore or drill under known wetlands and watercourses where possible

Initial Desktop Sensitive Habitat Assessment

Although the majority of the general Project area is comprised of cultivated lands, there are some areas within the Project area that are considered potentially sensitive habitats. These sensitive habitats should be considered when developing the Project layout. These sensitive habitats include:

- Wetlands
- Streams
- Floodplains
- Wooded areas
- Grasslands
- MDNR-NHIS Rare Features
- MDNR-Designated Species Priority Area
- State-managed lands
- WLI areas and MCBS Sites of Biological Significance
- Special water resource protected areas (county and state)
- Publicly-owned lands
- Habitats identified for supporting protected species

Impacts to sensitive habitats may increase the potential for adversely impacting sensitive or protected species that may utilize these sensitive habitats, increase the likelihood of the Project needing federal, state, or local permits, and increase the coordination of Project development with pertinent natural resource agencies, such as the USFWS and MDNR. Impacts to sensitive habitats should be avoided or minimized where possible. The following measures are recommended:

- Avoid or minimize siting Project facilities on sensitive habitats by siting Project facilities on previously disturbed lands, such as cultivated ground, and utilizing directional boring techniques to install facilities beneath sensitive habitats
- Conduct a field habitat assessment for sensitive habitat areas that cannot be avoided in the Projects design
- To identify specific sensitive habitats or species that could be of concern to natural resource agencies, initiate early coordination with pertinent federal, state, and local natural resource agencies

Other sensitive habitats could also exist within the Project area that were not identified as a part of this study, such as rock outcroppings, fallow fields, Conservation Reserve Program (CRP) lands, wetlands, etc., that could be considered sensitive and host sensitive species or otherwise be protected. A field assessment would identify and verify potential sensitive habitats. The field assessment should be conducted for portions of the Project layout that are not located in cultivated fields once an array has been identified. The goal of the field assessment would be to identify any sensitive habitats that could occur in the Project area that may be impacted by the Project. The results of the field assessment could be used to adjust the array and layout to further-minimize environmental impacts, regulatory reviews, and permitting.

Desktop Threatened and Endangered Species Habitat Assessment and Proposed Field Survey

Although the majority of the general Project area is comprised of cultivated lands, there are some areas within the Project area that can be considered potentially sensitive habitats for western prairie fringed orchids, Dakota skippers, or poweshiek skipperlings. These sensitive habitats would be considered during the field portion of the habitat assessment and when developing the Project layout. These sensitive habitats include:

- Wetlands, thus far indicated by NWI, PWI, and qualitative windshield efforts
- NLCD-indicated land uses: grasslands/herbaceous areas, developed and open spaces
- MDNR-indicated habitats: upland prairie, wet meadow, calcareous fen
- MDNR-NHIS Rare Feature locations
- USFWS-Designated Species Priority Areas by habitat type, soil type, or land use (*i.e.*, Trosky Till Plain Area 5)
- Audubon IBAs in two portions of the Project area

Other potential suitable habitat areas could also exist within the Project area that were not identified as a part of this study, such as rock outcroppings, fallow fields, Conservation Reserve

Program (CRP) lands, unknown wetlands, etc. These areas could contain suitable habitat for these species as well.

Based on this desktop review and your review, a field sensitive species habitat assessment is planned to be conducted as soon as possible, likely by mid-July 2012. The intent is to conduct general field reconnaissance on lands EDF currently has access permission. For areas where suitable habitat may occur where EDF does not have access permission, the best attempt practicable will be made to observe areas from public roadways or adjacent lands where access is permissible. Potential suitable habitats observed during the field survey that were not identified as part of this desktop review will also be surveyed.

Field Studies

Four field studies were completed for the initial Project area in 2012 and are briefly summarized below:

1. Avian Stick Nest Survey
2. Spring and Fall Avian Point Count Survey
3. Acoustic Bat Survey
4. Orchid and Skipper Field Habitat Assessment
5. Great Blue Heron Rookery Survey 2013

Avian Stick Nest Survey

Per recommendations of USFWS and MDNR, Burns & McDonnell conducted an avian stick nest survey from April 5-12, 2012 for the initial Project area, including a two-mile buffer around the Project boundary. As a result of the survey, two potential raptor nests were identified within the initial Project area, with one additional raptor nest observed within a portion of the new expanded area. Other raptor stick nests were observed within the two mile buffer area around the initial Project area, but are not within the new expanded area. The raptor nests within the initial Project area are located approximately 1.0 mile north-northeast and 0.3 miles west and south of the identified buildable land. Other stick nests were observed, but were likely those belonging to the American crow (*Corvus brachyrhynchos*), as determined by the nests small size and the number of observations of this species during the 2012 spring and fall avian point count survey.

Spring and Fall Avian Point Count Survey

Per recommendations of the USFWS and MDNR, Burns & McDonnell conducted spring and fall avian point count surveys in 2012 for the initial Project area. A total of 67 species were observed during the surveys. None of the observed species were identified as being protected under the Federal Endangered Species Act or Bald and Golden Eagle Protection Act in Pipestone and Murray counties. Sixty-three of the 67 observed species have federal protection under the Migratory Bird Treaty Act. Raptors were not observed in high numbers or large concentrations within the study area.

Acoustic Bat Survey

Per recommendations of the USFWS and MDNR, Burns & McDonnell conducted an acoustic bat survey for three locations within the initial Project area. The survey was conducted from

April 9 to October 31, 2012. The purpose of the acoustic bat survey was to record general bat activity in the vicinity of the Project. Acoustic monitoring locations consisted of three locations. Two of the locations were on meteorological (MET) towers (M1 and M2), while one was located on a contrivance within a riparian zone (M3) in the western portion of the initial Project area. Throughout the entirety of the study, 26 *Myotis* bat species were recorded. Given the call data and sequences retrieved, no specific call sequences stood out as indicative of the northern long-eared bat (*Myotis septentrionalis*). Seven of the recorded *Myotis* species occurred at both M1 and M2, thus a total of 14 *Myotis* species were recorded at MET tower locations. The remaining 12 *Myotis* species were recorded at the riparian monitoring location (M3).

Western Prairie Fringed Orchid, Poweshiek Skipperling, and Dakota Skipper Field Habitat Assessment

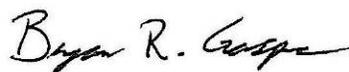
In addition, and per recommendation of USFWS, Burns & McDonnell conducted a field habitat assessment from July 9-11, 2012 for the western prairie fringed orchid (*Platanthera praeclara*), Dakota skipper (*Hesperia dacotae*), and poweshiek skipperling (*Oarisma poweshiek*) in the initial Project area. Based on constraints for the initial Project area, the potential habitats for these three species have been avoided as potential construction locations. Also, Critical Habitat for the Topeka shiner is present within Pipestone and Murray counties; however, all turbine locations avoid these areas. If there is potential for orchid, skipper, skipperling, or shiner habitat to be impacted by access roads or collection systems, coordination with the USFWS will be initiated.

Great Blue Heron Rookery Survey 2013

This study included observation of four great blue heron stick nests at the great blue heron rookery identified during the 2012 Avian Stick Nest Survey, approximately 1.75 miles south of the Project boundary. This rookery is located in an approximately two-acre woodland area that included mature trees. This area is lower in elevation relative to other wood lots in the vicinity; therefore, likely providing some refuge from the prevailing winds. The rookery is south of the Project boundary, southeast of the intersection of 15th Avenue, and 61st Street in Murray County, and southwest of the 61st Street dead end (*i.e.*, 61st Street is not continuous in this area). No great blue herons were observed at the rookery on April 23 and 24, 2013 and maintenance of the nests was not noted. Great blue heron activity was not observed during surveys conducted, including at the rookery or in the general vicinity of the rookery.

If you have questions or are in need of further assistance, please contact Bryan Gasper at (816) 349-6770 or bgasper@burnsmcd.com or Robert Everard at (816) 363-7251 or reverard@burnsmcd.com.

Sincerely,



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