Lein, Jerry R.

From: Jennifer Turnbow [jennifer.turnbow@kljeng.com]
Sent: Wednesday, March 16, 2011 5:03 PM
To: Lein, Jerry R.
Cc: 'Swanson Eric'; 'Chris Sternhagen'
Subject: Merricourt Wind Power Project--Late File Exhibit #10
Attachments: Late File Exhibit 10_NDPSC.docx

Jerry,

Attached is the Late File Exhibit #10 for the Merricourt Wind Power Project, Case No. PU-08-932.

Thank you for facilitating and helping us with the permit and with the Commission in order to make the closing date with NSP, we appreciate it.

I believe you will also soon receive some correspondence regarding the transfer of the permit to NSP.

If you have any questions, please give me a call!

Thanks
Jen <<...>>

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Addendum 1 to Biological Conditions and Effects Summary
March 15, 2011

I. Introduction

The purpose of this outline is to present conceptual avoidance, minimization and mitigation measures that are intended to eliminate or reduce the potential incidental take of piping plovers from operations at the Merricourt Wind Project. enXco will work closely and collaboratively with USFWS to develop these measures into ones that support our shared goal of species preservation. enXco is committed to implementing all measures when finalized as mutually agreed upon by USFWS and enXco. Additionally, this outline includes updated habitat compensation funding totals for the purpose of offsetting potential disruption of habitat use to whooping cranes and piping plovers.

The measures contained in this outlinewill function as an addendum to the *Merricourt Wind Power Project Biological Conditions and Effects Summary* (KL&J 2010) which analyzed the results of the field surveys, desktop assessments and other biological research efforts conducted to date, assessed potential impacts to listed species and other wildlife, and provided commitments to avoid, minimize, and mitigate potential impacts to the species. Further minimization and mitigation measures will be discussed in greater detail in the *Avian and Bat Protection Plan (ABPP)*, which is currently being prepared for the project.

II. Background

The piping plover is a small plover that is 17–18 cm long, with a wingspread of 35.6–39.4 cm and weighs about 43–63 g. Sexes are similar in appearance and size (Elliott-Smith and Haig 2004). Plumage of adult birds is mostly a sandy color with a white underside. The head is mostly white with a narrow black band above the forehead and across the chest which is present during the breeding season. Juvenile plumage is acquired gradually over age (15–30 days) where feathers of crown and mantle are smoke gray, broadly tipped with pinkish buff, and no black bands on forehead and neck are present (Elliott-Smith and Haig 2004).

The piping plover was listed as endangered in the Great Lakes region and threatened everywhere else in the United States by the USFWS in 1985 via the Endangered Species Act (ESA). USFWS recognizes three separate breeding populations of piping plovers: Atlantic Coast (threatened), Great Lakes (endangered), and Northern Great Plains (threatened).

The Northern Great Plains breeding population (NGPBP) is the population that occurs within North Dakota. Piping plovers in this breeding population generally arrive in North Dakota in mid-to-late April through early May during spring migration and leave the state between mid-July and August, during fall migration. (The entire population has typically reached its wintering grounds by early-September.) Breeding and nesting activities in North Dakota occur between the spring and fall migration periods. Critical habitat was designated in 2002 for the Northern Great Plains breeding population, which includes prairie alkali wetlands and inland and reservoir lakes, totaling approximately 183,422 acres and portions of four rivers totaling approximately 1,207.5

river miles in MT, SD, ND, NE, and MN. The Nebraska portion of the critical habitat was vacated by the U.S. District Court on October 13, 2005 (USFWS 2009).

While there have been no confirmed fatalities at wind farm sites, piping plovers have been documented colliding with human made structures such as transmission lines. Therefore, the following measures will be implemented at the Merricourt Project to further reduce to discountable levels and, ideally, completely eliminate the potential fatality risk to piping plovers from the operating turbines. The process described is a series of decision points or steps that will be taken on an annual basis. Specifically, it outlines how species presence/absence at the site will be documented and what minimization and mitigation measures will be taken if there are breeding birds in proximity to the turbines. This process is part of an overall effort to significantly reduce the potential for take at the Merricourt Project while at the same time increasing potential habitat, protecting existing habitat, and protecting nesting birds to increase overall piping plover numbers. In addition, please note that enXco is a member of the current bi-regional HCP process for whooping cranes as part of Section 6 funding of the ESA. The USFWS is currently working with wind developers in this effort to possibly include piping plovers and least terns

III. Measures to Reduce Potential Take

A. Step One: Where to Search

1) No critical habitat for piping plover has been designated within the wind farm project boundaries; the nearest turbine is approximately 2.1 miles away from designated critical habitat. This designated critical habitat, known as McIntosh 2, is located in the SW¼ of Section 13, SE¼ of Section 14, E½ of Section 23, and the W½ of Section 24, T130N, R68W. While no designated critical habitat exists within the project boundaries, McIntosh 2 will be surveyed for piping plover nesting habitat and species presence.

2) All piping plover potential nesting habitat within 0.5 miles of turbines will be searched. Based on best available data on piping plover foraging characteristics, which suggests that piping plovers forage at or in close proximity to their nesting sites (Elliott-Smith and Haig 2004; Johnson et al 1997), a 0.5-mile search radius is expected to adequately encompass the potential flight range from nesting areas to foraging areas.
    a. Potential nesting habitat will be defined based on soil criteria (saline soils) and review of past aerial photographs, as outlined in the *Merricourt Wind Power Project Biological Conditions and Effects Summary* (KL&J 2010). At this time, potential nesting habitat has been identified in the NE¼ of Section 12, T130N, R67W; the N½ of Section 23, T131N, R67W; and the NE ¼ of Section 27, T131N, R67W. USFWS will have the opportunity to review and comment on what areas are considered potential nesting habitat prior to the survey commencing.
    b. If nesting birds are found in the areas described above, other wetlands/lakes within 0.5 miles of nesting areas will be searched for foraging birds based on flight path information collected during observation surveys.

3) All survey information will be shared with USFWS.

B. Step Two: When to Search

1) Areas described in Step One will be searched every year for the first three years after construction, regardless of water levels and habitat conditions as described below.

2) After the first three years, three annual surveys will be conducted, one in late March, one in mid-April, and one in early-May in each area as defined above to document if there is potential habitat (e.g., bare, alkaline areas). If no habitat is present, no further surveys will be performed for that year. Multiple surveys to look for potential habitat are planned each year to account for changing habitat conditions when birds may be establishing nests or during re-nesting attempts. Based on historic information, nests are generally established by early May.

3) In years one, two, and three and in years when potential habitat is present based on the March, April, or May habitat survey, surveys will be conducted three times per week within potential nesting habitat to determine presence/absence. All surveys will be done between April 15 (assuming habitat is documented prior to April 15) and June 1.

4) During the fall migration period (July 1–August 15), surveys will be made three times per week of the potential habitat by a biologist. (Spring migration surveys are not planned due to the migration patterns by piping plovers in which they appear to fly directly from their wintering areas to summer breeding areas, and therefore surveys of potential piping plover habitat may not be effective.)

5) Operations personnel will be trained annually to identify piping plovers and instructed to watch for species presence/absence during routine operations and maintenance duties. If plovers are identified by operations personnel, they will notify the environmental staff or designated contact person so that actions discussed in Step Four can be implemented. Besides breeding season and migration season surveys conducted by a trained biologist, operations personnel will be on site daily and can also be a valuable resource in identifying piping plovers.

6) All survey information will be shared with USFWS.

C. Step Three: If Potential Habitat or Piping Plovers are Not Present. – Maintain annual search parameters as described above in future years.

D. Step Four: If Potential Habitat and/or Piping Plovers are Present

1) Measures to Avoid and/or minimize potential take if there is species presence.
    i. Nesting or migrant piping plovers will be observed from a vantage point to document where birds are foraging, which direction they are flying, and flight height information.

ii. enXco will implement adaptive management measures as agreed to with the USFWS

III. Mitigation and Research to Implement in Conjunction with Measures to Discount Take

In addition to avoidance and/or minimization measures proposed to avoid or reduce the likelihood of potential direct impact to piping plovers, the Merricourt Project will implement several habitat conservation, habitat management, habitat creation, and research that will benefit the local and overall piping plover population, as well as future management related to the species.

A. Habitat Conservation – As outlined in the *Merricourt Wind Power Project Biological Conditions and Effects Summary* (KL&J 2010), the total monetary value of affected wetlands would be provided by enXco to purchase fee simple property with wetlands and/or develop and acquire conservation easements of no less than 30 years (life expectancy of the project) on wetlands that may provide whooping crane and piping plover habitat. enXco's intent is not necessarily to provide acre-for-acre wetland mitigation; rather, the calculations below are used to establish an appropriate level of funding for conservation efforts. enXco intends to work with a third-party on habitat conservation efforts, in conjunction with the USFWS, to determine the most effective use for the habitat conservation funds. Since submittal of the Biological Conditions and Effects Summary to USFWS, the following revisions to the methodology for habitat compensation have been made:

1) Revisions of affected acres: Since the original assessment, revisions to the turbine layout have been made. Therefore, the quantification of potential whooping crane and piping plover habitat where use may be disrupted was reassessed. Based on this reassessment, approximately 1,710.64 acres of wetlands (potential whooping crane roosting habitat) and approximately 13.93 acres of potential piping plover nesting habitat occur within 0.5 miles of a wind turbine or associated access road.
2) Increased land value per acre: Land values for McIntosh County were originally used to determine the weighted average land value. However, this has been revised to be based on Dickey County land values for cropland and pastureland which has a higher land value. These values are based on land sales and USDA National Agricultural Statistics data (2010). ***Please refer to Table 1, Revised Weighted Average Land Value.***
3) Revised total value of affect wetlands: Based on conversations with USFWS (Terry Ellsworth), transmission lines were excluded as being classified as a previous disturbance. Additionally, township roads within 0.5 miles of a wetland, rather than 0.25 miles of a wetland, are considered to be a previous disturbance. This modified the land value calculations, as did the reassessment discussed in III.A(1). ***Please refer to Table 2, Revised Total Value of Affected Wetlands.***

Table 1: Revised Weighted Average Land Value

Land Classification	Proportion of Project Area	Land Value/Acre	Percent of Project Area x Land Value/Acre

Cropland	33.8%	$1,500.00	$507.00
Pastureland	66.2%	$800.00	$529.60
		Weighted Average Land value	**$1,036.60**

Table 2: Revised Total Value of Affected Wetlands

Disturbance Level	Acres	% of Land Value	Land Value / Acre	Value of Affected Wetlands
No Disturbance	218.92	100%	$1,036.60	$226,932.47
One Disturbance	1,117.93	75%	$777.45	$869,134.68
Two Disturbances	373.79	50%	$518.30	$193,735.36
Three Disturbances	0.00	25%	$259.15	$0.00
TOTAL	**1,710.64**			**$1,289,802.51**

B. Habitat Management – enXco will contribute funds to the USFWS, NDGFD, or other organization (e.g., Tern and Plover Conservation Partnership) to be used for direct habitat management action to benefit piping plovers. This funding will be coordinated with USFWS to benefit the species to the greatest extent practicable. An example use of such funding is to fence off known nesting areas in given years to protect nests from predators so that hatching and fledging successes are higher. Ideally this work could be done in the same vicinity as the Merricourt Project (Kulm Wetland Management District) but should not be limited to this area given the known dispersal of piping plovers between years (USFWS 2009). For example, more piping plovers produced in Nebraska one year could easily result in more piping plovers nesting in North Dakota in subsequent years.

D. Research – Research efforts will be funded and implemented to increase understanding of flight/foraging behavior of piping plovers. Flight and foraging behavior of piping plovers nesting on saline wetlands in North Dakota will be investigated through studies such as Observation or Telemetry studies. This funding will be coordinated with USFWS to benefit the species to the greatest extent practicable. This research can assist in refining efforts to reduce and eliminate potential take of piping plovers at the Merricourt Project and elsewhere.

1) Objectives of such a study could include:
    a. Determine how far piping plovers travel from nests to foraging areas. This will help address distance from turbines that searches should be conducted. For example, if birds travel 0.25 mile to forage, this knowledge can assist in refining search parameters.
    b. Determine flight heights plovers fly between nesting and foraging areas. This will help to further address if piping plovers are at risk of turbine strikes and provide additional information for risk analysis
    c. Determine if there are distinct foraging periods during the day. This can assist with refining search parameters and other minimization efforts.

IV. References

Elliott-Smith, Elise and Susan M. Haig. 2004. Piping Plover (*Charadrius melodus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/002

Johnson, R.R., Adolf, S.L., and Higgins, K.F. 1997. Life history of the piping plover in the Northern Great Plains and Great Lakes Region.

Kadrmas, Lee & Jackson (KL&J). 2010. Merricourt Wind Power Project Biological Conditions and Effects Summary.

U.S. Fish and Wildlife Service. 2009. Piping plover, 5-year review: Summary and evaluation. Prepared by the Northeast Region, Hadley, Massachusetts and the Midwest Region's East Lansing Field Office, Michigan.