DEPARTMENT OF NATURAL RESOURCES STATE OF MINNESOTA
Division of Ecological Resources Memorandum

DATE: November 5, 2010 **PHONE:** (651) 259-5115

TO: Ingrid Bjorklund
Department of Commerce, Office of Energy Security

FROM: Jamie Schrenzel
MDNR, Division of Ecological Resources

SUBJECT: Paynesville Wind Project, DNR Comments Regarding Avian and Bat Surveys

The Minnesota Department of Natural Resources (DNR) has reviewed the reports titled "Avian Surveys for the Paynesville Wind Resource Area" and "Acoustic Bat Studies for the Paynesville-Zion Wind Resource Area." The following comments and recommendations regarding these reports are provided for consideration in development of Office of Energy Security (OES) recommendations to the Public Utilities Commission (PUC) prior to a decision on issuance of the final site permit. Comment topics include recommendations regarding grasslands and prairie, possibly flyways, construction scheduling, turbine height, and future monitoring needs for birds and bats.

The DNR appreciates the effort the applicant made to thoroughly survey the Paynesville Wind Site and implement suggested protocol after meetings with agencies. Generally, the DNR concurs with many of the recommendations included in reports submitted. The following comments are included to help refine recommendations and to suggest specific content for the Avian and Bat Protection plan appropriate to this site to address the findings of the avian and bat studies submitted.

The Avian Survey for the Paynesville Wind Project included a recommendation for avoidance of siting turbines in native or recovered grassland habitat in favor of placing turbines in cropland (pg. 29). The DNR, similarly, recommends avoidance of siting turbines or associated infrastructure in prairie or large tracts (>40 acres) of contiguous grasslands. It is also recommended that the Avian Protection Plan include a requirement to provide an assessment, based on the currently available survey data and literature review, how micrositing can further address protection of grasslands species that are experiencing decline or are sensitive to wind development (see pg. 13 of Avian Report). For example, turbines located near areas where declining grassland species were found in surveys may warrant appropriate additional avoidance from the edge of grasslands or prairie habitat based on existing literature.

The avian survey of the Paynesville Wind Project also included an assessment of flight paths of various species from each observation point used for data collection. The DNR generally concurs with the conclusions of the report that, though there is high waterfowl and waterbird use and presence of the state-listed threatened Trumpeters Swan, state-listed Special Concern Species and species in regional decline, no clear flight path behavior appears to be present between specific project area features. However, survey results show that certain areas, such as Observation Point #5 and Observation point #7 located in the vicinity of state and federal conservation lands and water features, indicate higher numbers of total detections and presence of threatened, declining or special concern species. The DNR recommends that the Avian and Bat Protection Plan include a requirement to provide an assessment, based on the currently available survey data and literature review, of how micro-siting can further address protection of threatened, declining or special concern species, and areas with increased species richness. Examples of how to mitigate for possible impacts include measures such as avoidance of areas indicating use by species of concern, or increasing spacing between turbines based on available literature avoidance observations.

Discussion in the Avian Survey Report also included the indication that breeding birds may be disturbed if construction activities occur during the breeding season near any active nest sites. The DNR concurs with this analysis and recommends that the Avian and Bat Protection Plan include a requirement to provide a construction schedule and operational plan for construction that addresses minimization of impacts to breeding birds using the currently available survey data and literature analysis.

The applicant for the Paynesville Wind Project has requested the option for construction of either 80 meter towers or 100 meter towers. The Avian Survey Report indicates (Addendum A) that there may be more risk to waterbirds and waterfowl with 80 meter towers, and more risk to raptors with 100 meter towers, though a bias for observing lower flying birds is acknowledged due to easier visibility. This analysis would suggest that 100 meter towers are generally lower risk. It should also be considered, however, that wind towers are usually beneath a height that interferes with nocturnal migration (see pg. 28). If tower heights of 100 meters are constructed along with a rotor diameter large enough to bring the total height to 150 meters or over, a possibility described in Addendum A, then there may be some concern regarding nocturnal migration, particularly for songbirds (passerines). It is unclear how the change in height would affect avian species at the Paynesville site. The DNR recommends that post-construction fatality studies be designed in a manner that considers a comparison of various heights of towers within the site if different heights are used, or between wind resource sites if the same height of towers is used. Radar studies could be included in the Avian and Bat Protection Plan or in a regional study to further explore the possible impact of larger towers on migrating birds. Regarding bats and turbine height, it is interesting to note that in a study at the Buffalo Mountain wind project in Tennessee 65 meter towers were found to kill fewer bats than 78 meter towers (Arnett, et al, 2008). The DNR also recommends that post-construction bat fatality studies consider turbine height to the extent possible.

The applicant for the Paynesville Wind Project also completed a report titled "Acoustic Bat Studies For the Paynesville-Zion Wind Resource Area – Draft Report." Generally the DNR concurs with recommendations included in this report regarding the inclusion of fatality monitoring post-construction. DNR staff look forward to working with the applicant to assist with the development of monitoring protocol for the Avian and Bat Protection Plan. It should be noted that the Big Brown Bat and Little Brown Bat were located during applicant surveys. These species are under consideration for state listing as species of special concern, but are not currently listed.

The DNR also concurs with the recommendation included in the report titled "Avian Surveys for the Paynesville Wind Resource Area" that post-construction monitoring should be used to evaluate setbacks from WMAs and WPAs, and if substantial mortality should occur, additional mitigation measures should be implemented. DNR staff look forward to working with OES and the applicant to discuss the most effective post-construction monitoring methods for this site.

Thank-you for your consideration of these recommendations. Please contact me with any questions.

References:

Arnett, et al. 2008. Patterns of Bat Fatalities at Wind Energy Facilities in North America.

Deinlein, Mary. Smithsonian Institute. Fact Sheet: Neotropical Migratory Bird Basics. http://nationalzoo.si.edu/scbi/migratorybird/fact_sheets/default.cfm?fxsht=9

United States Department of the Interior

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November 9, 2010

Ingrid Bjorklund
State Permit Manager
Minnesota Office of Energy Security
85 7th Place East, Suite 500
St. Paul, Minnesota 55101

Re: Paynesville Wind Farm Avian Survey and Addendum A Review
Stearns County, Minnesota
FWS TAILS #32410-2009-FA-0144

Dear Ms. Bjorklund:

This letter is to follow up a November 1, 2010, conference call involving Minnesota Department of Natural Resources (MNDNR), Geronimo Wind Energy, HDR Consulting, Hamer Environmental, yourself, and Rich Davis of this office, regarding the proposed Paynesville Wind Farm in Stearns County, Minnesota. The comments and recommendations within this letter are focused on information provided in the Avian Surveys for the Paynesville Wind Resource Area, September 2009 – September 2010, report. This letter serves as additional comments and recommendations to our preliminary review letter provided to the project proponent, dated October 22, 2009 and our previous letter submitted to your office on September 2, 2010.

The following comments are being provided pursuant to the Migratory Bird Treaty Act (MBTA), the Bald and Golden Eagle Protection Act, and the Fish and Wildlife Act of 1956. This information is being provided to assist you in making an informed decision regarding wildlife issues, turbine site selection, project design, turbine model selection, and compliance with applicable laws.

Migratory Birds

The Migratory Bird Treaty Act (16 U.S.C. 703-712; MBTA) implements four treaties that provide for international protection of migratory birds. The MBTA prohibits taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. Bald and golden eagles are afforded additional legal protection under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d). Unlike the Endangered Species Act, neither the MBTA nor its implementing regulations at 50 CFR Part 21, provide for permitting of "incidental take" of migratory birds.

In past correspondence and during the November 1, 2010 conference call Rich Davis indicated concerns with the line of turbines proposed between the Lake Henry/Bauman Waterfowl Production Areas (WPAs) and the Zion WPA, and the potential impacts of these turbines on migratory birds within the project area. Based on the final Avian Survey Report survey, Station 7 is located within the area of concern, and Station 7 does have the highest bird count totals when compared to the other nine survey stations within the proposed project site. Over half of these individuals counted consist of Brewer's blackbirds, Franklin's gulls, and ring-billed gulls during the fall aggregation and migration period. The seasonal movement of birds through this area appears to be significant during late September and October, and does warrant further consideration of appropriate turbine model selection and turbine spacing to allow for movement of migratory bird species.

At this time the Service recommends that the project proponent utilize a turbine model with a 100 meter hub height. The taller hub height moves the bottom of the Zone of Risk (ZOR) farther from ground level, which allows greater clearance for low elevation avian flight beneath the rotor swept area. The Service also recommends that turbines placed between the Lake Henry/Bauman WPAs and the Zion WPA maintain an appropriate alignment so any birds approaching the turbines from the east or west can easily fly past the turbines without significant flight avoidance of the turbines. Michael DeRuyter recommended a turbine spacing of 200 to 600 meters in this area, in a November 2, 2010 email. This spacing does seem to be appropriate to allow avian movement through the area.

Avoidance of turbine placement within grasslands will also be beneficial to a number of grassland nesting bird species with aerial courtship displays (marbled godwit, northern harrier, common nighthawk, and upland sandpiper) which may utilize the proposed project site.

The Service's Office of Law Enforcement serves its mission to protect federal trust wildlife species in part by actively monitoring industries known to negatively impact wildlife, and assessing their compliance with Federal law. These industries include oil/gas productions sites, cyanide heap/leach mining operations, industrial waste water sites, and wind power sites. There is no threshold as to the number of birds incidentally killed by wind power sites, or other industry, past which the Service will seek to initiate enforcement action. However, the Service is less likely to prioritize enforcement action against a site operator that is cooperative in seeking and implementing measures to mitigate take of protected wildlife.

Service-owned Lands

The Zion Waterfowl Production Area (WPA) is located directly adjacent to the east boundary of the proposed project area. The Lake Henry and Bauman WPAs are located directly west of the proposed project area. The Service recommends a minimum turbine setback distance of ½-mile from all WPAs adjacent to the proposed Paynesville Wind Farm.

Post-construction Surveys

The Service recommends the project be monitored post-construction to determine impacts to migratory birds and bats. A specific post-construction monitoring plan should be prepared and reviewed by the Service and should include a scientifically robust, peer reviewed methodology of mortality surveys. The Service recommends that surveys be conducted for a minimum of two years following construction to assess impacts to birds species moving through the project area. All turbines placed within ½-mile of any lands managed or set aside for migratory birds should be included in post-construction monitoring. Turbines selected for inclusion in post-construction monitoring surveys should be a combination of turbines within various habitat cover types.

We also recommend that the post-construction mortality studies be conducted by an independent third-party contractor with expertise in bird/bat mortality monitoring. Results of mortality surveys and other forms of monitoring should be used to adjust operations to reduce mortality if necessary and feasible, as well as improve design and siting of future wind generation facilities. **The Developer or its contractor should provide to this office each year, no later than December 31, copies of annual bird/bat mortality monitoring reports.**

Thank you for the opportunity to provide comments on this proposed project. Please contact me at (612) 725-3548, ext. 2201, or Rich Davis, Fish and Wildlife Biologist, at (612) 725-3548, ext. 2214, if we can be of further assistance.

Sincerely,

Tony Sullins
Field Supervisor

cc: Jamie Schrenzel, MN DNR
Scott Glup, USFWS - Litchfield WMD