



United States Department of the Interior

FISH AND WILDLIFE SERVICE
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January 12, 2011

Jamie MacAlister
State Permit Manager
Minnesota Department of Commerce
85 7th Place East, Suite 500
St. Paul, MN 55101-2198

Re: AWA Goodhue LLC Wind Project
Avian and Bat Protection Plan Review, Goodhue County, Minnesota
PUC Docket No. IP-6701/WS-08-1233
FWS TAILS #32410-2009-FA-0173

Dear Ms. MacAlister:

This is in response to Larry Hartman's December 27, 2011 email requesting our review of the proposed AWA Goodhue, LLC Wind Project's Avian and Bat Protection Plan (ABPP) as filed on December 15, 2011 and the Errata to AWA Goodhue's ABPP filed on December 28, 2011. We begin this letter with overall comments on the draft, and then address specific sections within the document.

General comments

Non-intentional Eagle Take Permit (50 CFR 22.26)

AWA Wind has indicated its intention to apply for an eagle take permit. The Service would like to see an anticipated timeline as part of the ABPP.

Post-Construction Monitoring

AWA Wind has stated plans for surveying and mortality monitoring for two years post construction. Please note that if AWA Wind applied for a programmatic eagle take permit, monitoring and adaptive management will likely be recommended for the life of the project.

Non-Eagle Migratory Bird Protection

The Service recommends that management measures such as seasonal or daily turbine shutdowns be considered if post-construction monitoring indicates avian mortality trends occurring at specific turbines or clusters of turbines.

Specific Comments

Page 6, 5.1.1: “The new nest is slightly farther from the project footprint than the previously documented nest that was active in 2010 (but found to be inactive in 2011).”

Service Comments: Inactive nests are still protected under BGEPA.

Page 8, 5.1.2: Monitoring Bald Eagle Movements.

Service Comments: Even though flights in the Rotor Swept Zone (RSW) did not always overlap proposed turbine sites, because of the number of eagles in the area, future flights could easily be within the RSZ of turbine.

The ABPP indicates that eagle movement within the RSZ (Rotor Swept Zone) and within 10 meters of the turbine location was quantified. In latter sections of the report it is stated as within the RSZ and within 100 meters of the turbine location. The Service would like clarification that this is a typo, or an explanation as to why the distance from turbine locations varies.

Page 10, Section 5.1.3.1, Migration and Breeding Period. “Point count surveys conducted to date during the fall of 2011 have been seriously compromised by an active baiting program being conducted by project opponents.”

Service Comments: The Service neither agrees nor disagrees with the allegation of an active baiting campaign conducted by county residents. To date, AWA Wind has filed complaints with the Board of Animal Health (BAH). BAH has confirmed that there have been several instances in Goodhue County of improper carcass disposal, one instance of a coyote baiting, and one incident that appears to be “dumping for purposes other than disposal”. At present, no landowner has been cited for illegal dumping, and the BAH has not drawn any correlation between carcass disposal and eagles. The Service acknowledges that baiting activities may influence the point count data, but to state it has seriously compromised survey data would imply there is baseline data collected during previous fall seasons. To date, the Service has not been provided with previous fall data, and if such information is available the project proponent should provide this information for review. The Service recommends AWA Wind analyzes the data they have collected, rather than attempt to extrapolate potential data.

Page 11, 5.1.3.1: “The Minnesota Board of Animal Health (BAH) has confirmed that baiting with livestock carcasses is occurring”.

Service Comments: See Service comment on p. 10: 5.1.3 (above).

Page 11, 5.1.3.1: “It is anticipated that by the 2012 breeding season, road kill clean up and artificial feeding activity on and around the Project Area will be much better controlled than as of the date of this plan”.

Service Comments: The Service encourages AWA Wind to establish protocol for the scenario where either artificial food sources are not diminished or diminished food sources do not lead to a drop in eagle numbers.

Page 11, 5.1.3.2: “...helicopter surveys will be conducted once per month”

Service Comments: Based on the meeting held between the MN DOC, AWA Wind, and the Service (December 22, 2011), the Service encourages AWA Wind to

reevaluate helicopter flight height in order not to disturb nesting eagles, livestock or residences. The Service also does not recommend that helicopters hover close to the canopy or ground for any reason.

Page 11, Section 5.1.3.2: Winter Aerial Surveys. “The March aerial survey will be expanded to serve as the 2012 leaf-off survey for the nests of eagles, other raptors, and colony nesting birds...”

Service Comments: The FWS would like elaboration on this statement. Does this mean expansion of the type/scope of survey, or expansion of the distance from the project footprint? The distance outside of the proposed project that aerial surveys will be completed should be specified. For example, great blue heron can fly eight plus miles from their rookeries to foraging sites; are these aerial surveys intended to identify colony nesting areas at this distance from the proposed project site?

Page 11, 5.1.3.2: Night Roosts

Service Comments: The Minnesota DNR has given the Service information of a possible eagle night roost within project site. This information will be passed on to AWA Wind (if they do not have it already), and is included in this letter (attachment 1 and 2).

Page 12, 5.1.3.3: Winter Ground Transect Surveys

Service Comments: Due to the unusually mild winter (2011-2012), winter survey data gathered this winter may not be indicative of normal winter activity for eagles. Currently, there is much more open water and available food sources than in normal winters. Eagle numbers and eagle movement patterns may be different in subsequent years. The Service recommends additional winter surveys be completed in 2012-2013.

Page 21, Section 6.2: Fatality Monitoring Protocol. “Per recommendations from the MNDNR...for a moderate risk site”

Service Comments: The Service requests a justification as to why the proposed project site should be considered a moderate rather than a high risk site, based on the presence of a high number of nesting bald eagles.

The Service would also like to see more detail on carcass identification training for Operation and Maintenance (O&M) personnel. The Service recommends that O&M personnel not be tasked with identifying bat and many migratory birds, as these identifications can often be difficult, especially if carcasses are incomplete or decomposed. The Service recommends instead that all carcasses be collected with a marked location and other information, bagged and frozen, and identified by a specialist.

Page 22, 7.1: “...most common passerine fatalities tend to be common species...”

Service Comments: All migratory bird species are protected under MBTA, regardless of their population size. Take of any migratory bird without a permit is a violation of MBTA.

Page 24: 7.2: “After studying the draft USFWS model in detail, we have concluded that it would be more appropriate to apply the Band et al. (2007) collision risk model to date from the AWA Goodhue Wind project.”

Service Comments: AWA Wind is encouraged to analyze their data under multiple models. However, The Service would like to see the results of their survey data when analyzed under the Service collision risk model, in addition to any other models AWA Wind chooses. In a letter from Westwood Professional Services to the Service dated December 21, an analysis of data from the Service model was compared to the Band et al. model. Service would like to see the comparison of both models of collision risk assessment to eagles in the final ABPP.

Page 25: "...the fall migration period data has been seriously compromised by an ongoing, organized eagle baiting program"

Service Comments: Please see Service comments from p. 10: 5.1.3 (above).

Page 26 : "This reduction [in the collision risk of eagles] should be reflected in point count data collected and CRM output generated after the food base management program becomes operational in 2012."

Service Comments: Please see Service comments from p. 11: 5.1.3.1 (above).

Page 26, Section 7.2: Bald and Golden Eagles

Service Comments: Adaptive management measures should be clarified, so that if necessary, full turbine curtailment and shut down is an alternative. Alternatively, AWA Wind should clearly establish why full curtailment and shutdown is impracticable.

Page 26, Adaptive Management Measures, "Pursuing location-specific habitat modification to reduce perch sites or remove woody cover for prey species in immediate proximity to the turbine or turbine cluster where collisions are predicted."

Service Comments: AWA should elaborate on this adaptive management technique. To what extent and distance is perch sites/vegetation removal proposed?

Page 27: "As compared to bald eagles, the relative collision to golden eagles should be lower..."

Service Comments: The collision risk to Golden Eagles is substantially higher than for bald eagles due to their foraging behavior. Despite the lower numbers of golden eagles around this project site, golden eagles are vulnerable to turbine collisions, the risk of this project to Golden Eagles should not be discounted (Hunt *et al.* 1999, 2002)¹. Additionally, no take permits for the eastern population of golden eagles are available. Minimizing take to golden eagles should be included in AWA Wind's adaptive management strategy.

¹ Hunt, W. G., R. E. Jackman, T. L. Brown, and L. Culp. 1999. A population study of golden eagles in the Altamont Pass Wind Resource Area: population trend analysis 1994-1997. Report to National Renewable Energy Laboratory, Subcontracts XAT-5-15174-01, XAT-6-16459-01. Predatory Bird Research Group, University of California, Santa Cruz, California, USA.

Hunt, G. 2002. Golden eagles in a perilous landscape: predicting the effects of mitigation for wind turbine bladestrike mortality. California Energy Commission Report P500-02-043F. Sacramento, California, USA.

Page 32, Section 7.5.1: White-Nose Syndrome

Service Comments: The ABPP states that, “the fatal effect of this disease on bats has alarmed biologists and exacerbated concerns regarding potential effects of wind energy on bat populations.” There is available scientific data that indicates that wind power projects pose a threat to bats.

Page 33, 8.1.2.1: Minimizing Construction Disturbance.

Service Comments: If any bald eagle nest (current or future) is within 660 feet of any turbine, road construction, power line construction, or near any potentially disruptive activity associated with the construction of Goodhue Wind, the Service will recommend an eagle disturbance permit if this activity occurs during the eagle breeding season (February-August), or if this construction activity significantly alters the landscape within 660 feet of an eagle nest (regardless of season).

The ABPP states that native seed mixes will be emphasized to limit the introduction and spread of invasive species. For this to be as successful as possible the Service recommends the ABPP state that native seed mixes will be used.

Page 35, 8.1.3.2: Follow APLIC Guidelines for Transmission Lines

Service Comments: Please address if AWA wind plans to do carcass searches under newly built transmission lines for avian collisions. If so, include information on methods and duration of monitoring.

Page 36, Section 8.2.1.1 Turbine Siting : “Neither the current USFWS ECP guidelines nor the 2003 Service Interim Guidelines for Avoiding and Minimizing Impacts from Wind Turbines contain any recommendations for a spatial buffer distance from bald eagle nests.”

Service Comments: The 2003 Service Interim Guidance provides a recommendation to site potentially lethal infrastructure, including wind turbines, a minimum of two miles from bald eagle nests. Additionally, the National Bald Eagle Management Guidelines (USFWS 2007) contains explicit spatial buffer recommendations for avoiding disturbance around eagle nests and Important Eagle Use Areas. The literature cited of this ABPP does not reflect that AWA Wind included this document in their plan development. The Management Guidelines can be found: <http://www.fws.gov/pacific/eagle/NationalBaldEagleManagementGuidelines.pdf>. This document should also be consulted for any where construction may impact bald eagles, such as road construction, turbine construction, and transmission line placement.

Page 36, Section 8.2.1.2: Continued Bald Eagle Monitoring/Risk Modeling

Service Comments: This section of the ABPP states that the USFWS risk assessment modeling results will be updated throughout the pre-operational phase of the Project. On page 24 of the ABPP it was stated that the Band et al. (2007) collision risk model was being utilized as opposed to the USFWS risk assessment model. The Service recommends clarification throughout the ABPP as to which collision risk assessment model(s) is/are being utilized. As stated above, the Service wishes to see collision risk assessment modeling for both the Band et al. model and the FWS model.

Page 36, 8.2.1.3: “Carcasses that have the potential to attract raptors to the Project Area, and, in particular, turbine locations, will be immediately removed.”

Service Comments: When feasible, the Service would like more details on this plan for immediate carcass removal. Will this include daily inspections by O&M personnel? Will they be equipped to handle moving large carcasses? Will any of this be done on private land?

Page 37, Section 8.2.1.3: Initiation of Food Base Management

Service Comments: The ABPP cites the USFWS Draft ECP Guidance recommending against the improper disposal of livestock carcasses when it recommends “...responsible livestock husbandry (e.g. removing carcasses, fencing out livestock)... if grazing occurs around turbines.” The Service would like this removed from the ABPP as it is taken out of context. This section of the USFWS ECP Guidance is referring to grazing activities around wind turbines, and the removal of still born livestock, or livestock that may die of natural causes in close proximity to a wind turbine, which may attract foraging eagles. This section of the USFWS ECP Guidance is not intended for application to baiting activities.

Page 37: 8.2.1.3: “6. Responsible livestock husbandry will be encouraged among both participating landowners and neighbors”

Service Comments: The Service encourages AWA wind to develop good relationships with all landowners in the project footprint to ensure that carcasses are removed in a timely manner.

“7. Artificial and/or natural habitats near turbine locations that attract prey species may be undertaken if eagles exhibit risky flight behavior after the forgoing measures are in place”

Service Comments: This statement is unclear, and needs further explanation
“8. Prey-based enhancement and/or land acquisition and management to draw eagles out of a project footprint may be undertaken...”

Service Comments: This measure has been suggested by AWA wind in previous ABPP drafts, and the Service has discouraged such action (September 23, 2011 Service letter to Westwood). Please refer to this letter for the Service’s rationale for not wanting such a measure included in the ABPP.

“Both of the two new bald eagle nests identified in 2011 were directly associated with artificial feeding activities involving the disposal of livestock carcasses.”

Service Comments: As stated in previous letters (September 23, 2011 Service letter to Westwood), the Service does not believe that the new eagle nests are directly correlated with carcass dumps. Eagles require more than just food sources for breeding habitat; eagles were mostly likely already present in the area and opportunistically nested near food sources. Additionally, landowners have by law 72 hours to dispose of carcasses. Due to the large number of eagles already present in the area, it is likely eagles will discover carcasses quickly. Therefore, eagles feeding on carcasses will likely be a long-term issue for AWA Wind.

Although Service Eagle Guidelines (2007) discourages artificial feeding of eagles, there is no federal law which prohibits such feeding, unless it results in the take of an

eagle. The Service recommends AWA Wind resolve this matter through cooperative efforts with landowners.

Page 38, 8.2.2.2. Construction phasing to minimize disturbance.

Service Comments: Please see comment for section p. 33: 8.1.2.1.

“AWA Goodhue will fund the establishment of an appropriately sited and managed central road kill disposal location...”

Service Comments: The Service requests more information on this disposal area, such as location, and how its potential impacts to eagles and other.

Page 39, 8.2.3.1: “...USFWS risk assessment modeling results will be updated for two years...”

Service Comments: Elsewhere in this ABPP, AWA Wind has indicated they will be using the Band et al. model for collision risk assessment. Please also see earlier comments on p. 24: 7.2 where the Service encourages AWA Wind to analyze eagle data through the FWS model, in addition to any other model they choose. Please note also that monitoring associated with an eagle take permit may require more than two years of risk assessment modeling.

Page 40, 8.2.3.3: Curtailment: “An internet search revealed only one incident of bald eagle mortality at a wind project in North America...USFWS staff members have suggested as many as five bald eagle fatalities associated with North American wind farms...USFWS indicated that it was unable to supply the requested documentation.”

Service Comments: To date, the Service has documented 5 bald eagle takes at North American wind farms (4 mortalities and one injury). These results are currently being compiled for publication, and will be available for public review once published. Additionally, many of these cases are active law enforcement investigations; sharing information on these incidents may compromise the investigation.

Pages 41 and 42, Section 8.2.3.3: Curtailment

Service Comments: Barrier effect is acknowledged by the Service, but not as a mitigation measure as the ABPP is implying. The Service recommends projects minimize or avoid creating barrier effect. Barrier effect is thought to increase energy expenditure of individual birds as they will have to fly further to avoid and move around obstacles within their flight path. Barrier effect can also cause birds to abandon the use of foraging habitats or nesting areas. Clustering of turbines providing flight pathways for migratory birds is an approach preferred by the Service. Implementation of this mitigation measure should be established based on siting turbines away from flight pathways as opposed to creating flight pathways, or making the assumption that migratory birds will adjust to the new landscape modified by wind turbine placement.

The curtailment scenario provided on page 42 of the ABPP would not be a curtailment alternative the Service would be considering or recommending. Eagle activity has already been confirmed within the proposed project site, so if the curtailment alternative outlined in the ABPP was utilized the turbines would realistically be shut down all the time. The Service recommends that seasonal and/or temporary curtailment and full shut down of turbines within two miles of bald eagle nests be considered as a

legitimate risk avoidance measure. The Service requests citations from AWA Wind to provide evidence that slowing down (rather than halting) turbines provide a greater protection to eagles against collision.

Page 42, Curtailment: 8.2.3.3: “Artificial baiting of eagles in the Project Area (which has been document in multiple locations and is ongoing)...

Service Comments: Please see Service comments on p. 10: 5.1.3 (above) regarding artificial baiting.

Page 48, Section 8.5: Trumpeter Swan

Service Comments: If adaptive management measure item six is to be employed, turbines in the immediate vicinity of the proposed bird diversion activities must be shut down prior to undertaking the diversion activities.

Pages 48 and 49, Sections 8.6.1: Pre-Construction and Section 8.6.2 Construction

Service Comments: Sentence two of Section 8.6.1 Pre-Construction, states that all proposed turbine locations are more than 0.25 mile of raptor nests. Sentence two of Section 8.6.2: Construction, states that three turbines are planned within 0.25 mile of possible raptor nests. The Service recommends that this be clarified in the ABPP.

Page 48: 8.6.1: “If suitable habitat exists around the turbine such that foraging raptors may be attracted to it, AWA Goodhue may pursue habitat modification to minimize its attractiveness to prey species.”

Service Comments: Please provide more detail as to the kind and amount of habitat modification AWA is proposing. In past ABPP drafts, AWA Wind has suggested to remove perching trees in the project area to prevent raptor roosting and nesting. The Service has previous advised against such action. Details for Service stance against large-scale tree removal can be found in FWS comments on earlier drafts of the ABPP to Westwood, in a September 23, 2011 letter.

Page 51, 9.1.2: Construction Stage Environmental Training.

Service Comments: Please see Service comments on p. 21: 6.2: Fatality Monitoring Protocol, regarding bat and avian carcass identification. Additionally, the Service recommends that O&M personnel do not attempt to handle any injured raptor, including eagles. Only biologists or licensed rehabilitators trained in raptor handling and transport should handle injured raptors. Inexperience with handling raptors can lead to further raptor injury or death, as well as injury to the handler.

Page 53, 9.2.2: Adaptive Management: “If the USFWS and/or MNDNR develop electronic procedures for fatality reporting, AWA Goodhue Wind will work with agencies to adopt and implement the new reporting procedures.”

Service Comments: The Service currently has an on-line reporting system for avian powerline collisions:
<https://birdreport.fws.gov/BirdReportHomePage.cfm>. Xcel Energy also has an on-line system for powerline collision reporting (contact Xcel Energy for website). Once an on-

line reporting system becomes available for wind turbine collision reporting, the Service will share this with AWA Wind.

Page 55, Section 9.2.3.5: Informal Avian and Bat Injury Fatality Reporting, 24 Hour Reporting

Service Comments: The Service does not need to be notified within 24 hours of discovery of 5 or more dead or injured non-protected avian or bat species. This information could be provided to the Service in the form of quarterly or annual reports.

General Appendices

Service Comments: The Project Area outlined in Exhibit 1, 3, 9, 12, and 16 are different from the identified Operational Project Boundary outline in Exhibit 2, 10, & 11. When referring to the footprint of the project, AWA Wind should indicate to which boundary they refer. As these outlines are different sizes, they affect the size of recommended buffer distances outlined in Service recommendations.

Appendix C: Bald and Golden Eagle Protection Act (BGEPA): “If the USFWS determines that take is not likely to occur, they may issue the permit if specific permit issuance criteria are met.”

Service Comments: As stated in the September 23, 2011 Service letter to Westwood, the Service will not recommend permits where take is unlikely. Permits are recommended when take is likely. Permits include avoidance and minimization measures to reduce the take to an acceptable level.

Appendix E: Summary of Agency Coordination to Date: “Over the summer and fall of 2010, Westwood prepared a pre-construction avian survey and risk assessment report... which were provided to USFWS and MDNR on October 10, 2010.”

Service Comments: The avian risk assessment report was provided to the Service in October 2010; however survey work is documented as occurring in April and May of 2010. The report provided to the Service was dated July 19, 2010.

Appendix F: Minnesota DNR Fatality Monitoring Report Forms

Service Comments: Forms should also include injuries, as well as fatalities. Please also include date of Service notification on the forms. The Service also recommends providing copies of the Wildlife Incident Reporting Form (Appendix H) to interested landowners; many landowners will likely perform their own carcass searches, and using the same form will help to keep data consistent.

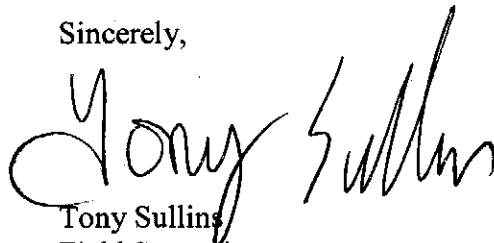
Appendix G: Eagle Collision Risk Modeling – 2011 Breeding Season Data

Service Comments: Please see comments on p. 24: 7.2, where the Service requests that FWS collision model data also be included.

Finally, please note that the State's approval and implementation of the project proponent's ABPP shall not limit potential conditions, Best Management Practices (BMPs), and/or Reasonable and Prudent Measures (RPMs) to be utilized in future eagle or any federally listed species Incidental Take Permits.

Thank you for the opportunity to provide comments on this proposed project. Please contact me at (612) 725-3548, ext. 2201, Rich Davis, Fish and Wildlife Biologist, at (612) 725-3548, ext. 2214, or Mags Rheude at (612) 725-3548, ext. 2202 if we can be of further assistance.

Sincerely,

A handwritten signature in black ink that reads "Tony Sullins". The signature is written in a cursive, flowing style.

Tony Sullins
Field Supervisor

cc: Deborah Pile, MN Department of Commerce
Jamie Schrenzel, MN Department of Natural Resources
Jamie Edwards, MN Department of Natural Resources
Melissa Doperalski, MN Department of Natural Resources

Attachments: 2



0 0.25 0.5 1 Miles

**Eagle High Activity Area
Goodhue County
Belle Creek Township
Observed November 2011**





0 0.2 0.4 0.8 Miles

**Eagle Roosting Area
Goodhue County
Belle Creek Township
T111, R16, S2
Observed November 2011**

