

FINAL

**Environmental Impact Statement
For the
Martinsdale Wind Farm Project**

**Martinsdale Wind Farm LLC,
Horizon Wind Energy
Wheatland & Meagher Counties, Montana**

April 2009



**State of Montana
Department of Natural Resources and Conservation
Northeastern Land Office
613 Northeast Main Street
Lewistown, MT 59457-1021**

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Attachment

- Comment Letter 1: Julie Schneider, Wild West Ecological Consulting
- Comment Letter 2: Ray Mulé, Montana Fish, Wildlife and Parks Region 5
Program Manager
- Comment Letter 3: Vern Larson

**DEPARTMENT OF NATURAL RESOURCES
AND CONSERVATION**

Trust Land Management Division



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April 29, 2009

Dear Interested Party:

The Department of Natural Resources and Conservation (DNRC) has determined that the substance of the 87 written comments received from three commenters in response to the Draft Martinsdale Wind Farm Environmental Impact Statement (DEIS) does not require new scientific analysis warranting the publication of a Final Environmental Impact Statement (FEIS). Therefore, the DNRC has adopted the DEIS as the FEIS for the project, pursuant to the process specified in the Administrative Rules of Montana, 36.2.530.

The FEIS is composed of the DEIS and the following:

- A Record of Decision,
- A table with changes to the DEIS,
- An errata sheet, correcting errors in the text of the DEIS,
- Project Perimeter map,
- A table with a summary of the comments on the DEIS and written response to those comments, and
- A copy of all comments received on the DEIS.

The DNRC intends to negotiate and complete a lease agreement with Martinsdale Wind Farm LLC to allow construction of 7 to 15 wind turbines on the subject state lands. Construction is anticipated to start in 2010.

Questions regarding this decision may be directed to Clive Rooney, Area Manager, Northeastern Land Office, (406) 538-7789.

A handwritten signature in blue ink that reads "Clive Rooney".

Clive Rooney

**MONTANA DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION
TRUST LAND MANAGEMENT DIVISION, NORTHEASTERN LAND OFFICE**

MARTINSDALE WIND FARM RECORD OF DECISION

Introduction and Background

The Montana Department of Natural Resources (DNRC) has considered a Martinsdale Wind Farm LLC proposal to enter into a lease agreement to build, maintain, and operate a wind energy facility on state trust land in Wheatland and Meagher Counties. The Martinsdale Wind Power Project (Project) entails 3,080 acres of school trust land proposed to be used in conjunction with 15,557 acres of private lands, owned by the Martinsdale Hutterite Colony, to produce up to 300 megawatts (MW) of electricity.

The Project would be located in central Montana approximately 20 miles west of Harlowton, Montana. Martinsdale Wind Farm LLC is a subsidiary of Horizon Wind Energy (Horizon). Horizon is based in Houston, Texas and has regional offices in Portland, Oregon and Ellensburg, Washington. The DNRC conducted a competitive bid process to award wind energy development rights for the subject state trust lands to Horizon.

In order to evaluate the environmental impacts of wind farm operation, the DNRC has conducted an Environmental Impact Statement pursuant to the Montana Environmental Policy Act, Title 75, Chapter 1, MCA. The DNRC issued a draft environmental impact statement (DEIS) February 9, 2009 and collected public comment until March 13, 2009. Three written comments were received in response to the DEIS. DNRC concluded that the issues raised in these comments did not require new scientific analysis and the DEIS has been adopted as the final environmental impact statement (FEIS) pursuant to the Administrative Rules of Montana, 36.2.530.

Location

The project would be located on approximately 18,637 acres of private and state land approximately 20 miles west of Harlowton, Montana in one of the windiest areas of central Montana north of the Crazy Mountains. The general area is characterized by rolling hills in a rural landscape of dry, rocky grasslands, areas of irrigated and dry land farming, grazing land and areas covered with a mixture of sagebrush, bitterbrush, and bunch grasses. Turbines would be placed on open ridge tops in the rolling hills above the Musselshell River, where strong northwest winds accelerate as they pass through the valley over the rolling hills. The overall population density in the area is very low with few dwellings in the vicinity of the project site. Land use in the area consists of ranching and farming on privately-owned land held by large landowners and state-owned property managed by DNRC.

Proposed Action

The project is planned to be constructed in two phases because the currently available transmission capacity on the Two Dot to Great Falls transmission line limits the initial stage of the project to approximately 58 MW. This EIS analyzed the impacts of the full build out of the project.

Phase I would consist of 27 wind turbine generators (generators) and have a capacity of approximately 58 MW. The project's major components would include an underground 34.5 kilovolt (kV) electrical collection system, a project step-up and interconnect substation, a Supervisory Control and Data Acquisition (SCADA) communication system, hub height free-standing meteorological towers, transmission lines, access roads, turbines, foundations, grid interconnection facilities, an operations and maintenance (O&M) center, and associated supporting infrastructure and facilities. Phase I of the project would connect directly to NorthWestern Energy's 100-kV Two Dot to Great Falls transmission line that crosses the project site.

The building of Phase II is dependent on the availability of additional transmission capacity. It is expected that Phase II would expand the project to an estimated total capacity of 300 MW. Phase II would add 58 to 115 wind turbines depending on the type and capacity of wind turbines selected. For the purpose of analyzing the potential impacts of this project, it is assumed that Phase II would add 99 additional wind turbine generators.

Alternatives Considered

There are three alternative courses of action analyzed for this project:

The No Action alternative under which there would be no wind turbines, new roads, or power lines on state land and no additional decisions by DNRC. Wind farm development would occur on private land with no use of adjacent state land.

Alternative A, the Proposed Action, under which there would be 7 to 15 wind turbines, new roads, and power lines on state land.

Alternative B under which there would be no wind turbines on state land, however, there would be easements for underground power lines and new roads on state land.

Attainment of Project Objectives

Two objectives were developed to evaluate the alternative courses of action.

Objective #1: Lease the right to use state land for the production of wind energy and generate the maximum legitimate monetary return to the common school trust.

Objective #2: Manage the rangeland for the desired future condition characterized by a healthy native plant and wildlife community.

Attainment of Project Objective #1

Lease the right to use state land for the production of wind energy and generate the maximum legitimate monetary return to the common school trust.

No Action Alternative

Under this alternative, DNRC would not issue a lease for the construction and operation of a wind farm. No additional revenue would be generated for the common school trust and this objective would not be achieved. No public benefit would be obtained from an alternative, non-polluting energy source and the DNRC would have no authority to require mitigations or conditions for construction and operation of the facility. Objective 1 would not be achieved through selection of the No Action Alternative.

Alternative A: Wind Turbines on State Land (The Proposed Action)

Execution of a commercial lease to allow construction and operation of a wind farm would result in the minimum annual receipt of between \$36,750 (7 turbines) and \$78,750 (15 turbines) for the common school trust and Objective #1 would be achieved. If the wind farm produced 15 to 30 MW at \$60 per MWH, the revenue could range from \$89,877 to \$179,755 (MW x 8,760 [hours per year] x 0.38 [capacity factor] x \$60 [per MWH] x 0.03). Objective 1 would be achieved through selection of Alternative A.

Alternative B: Easements on State Land

Under this alternative, DNRC would determine and disclose through completion of this EIS that expected environmental effects associated directly with wind turbine generators located on state land are unacceptable and that DNRC will only issue easements to Martinsdale Wind Farm LLC for crossing state land with roads and underground electrical collection lines. No wind turbines would be located on state land. Issuing these easements would result in the receipt of approximately \$5,216 (easements on 13.04 acres) for the common school trust and Objective #1 would not be achieved.

Attainment of Project Objective #2

Manage the rangeland for the desired future condition characterized by a healthy native plant and wildlife community.

No Action Alternative

Under this alternative, wind farm development would not occur on state land. The state land would remain characterized by healthy native plant communities and healthy wildlife populations. DNRC could not require wind farm construction or operation conditions or mitigations.

Objective #2 would be achieved through selection of the No Action alternative.

Alternative A, Wind Turbines on State Land (The Proposed Action)

Under this alternative, state land would be developed for the production of wind energy. Placement of up to 7 to 15 wind turbines and associated roads and underground electrical collection lines would eliminate approximately 13.51 to 22.46 acres of native short grass prairie within 3,080 acres of state land. Approximately 99% of the range on state land would remain undisturbed by the project. Existing land use of livestock grazing and recreational use would continue. A nominal amount of displacement of local plant and wildlife species would be expected due to the construction and operation of the wind farm. Wind turbines are expected to kill up to a maximum of 4.62 birds and 13.4 bats per tower per year. The number of estimated bird and bat fatalities is extrapolated from the single year's mortality data available from the Judith Gap facility. Wind farm bird and bat mortality monitoring is an evolving science and improvements to survey protocols are expected. The monitoring data from this facility as well as other operating wind farms will lead to an improved ability to predict the effects of wind farm operation on bird and bats. Currently, data does not exist to estimate bat population. Therefore, the scale of effect from 13.4 bat deaths per tower on bat populations is unknown. Selection of Alternative A allows DNRC to require the construction and operation measures identified in the DEIS for wind farm operation on state land. Objective #2 would be achieved through selection of Alternative A.

Alternative B, Easements on State Land

Under this alternative, easements would be issued to cross state land with roads and underground electrical collection lines. Roads would eliminate approximately 10.1 acres of native short grass prairie within 3,080 acres of state land. Approximately 99% of the range on state land would remain undisturbed by this alternative. Existing land use of livestock grazing and recreational use would continue. DNRC could not require wind farm construction or operation conditions or mitigations not directly related to road or power line easements. Objective #2 would be achieved through selection of Alternative B.

Decision

As Area Manager of the DNRC, Northeastern Land Office, I select Alternative A as described in the DEIS without additional modification. Alternative A meets the purpose and objectives of the project. The proposed mitigations are adequate and feasible. Alternative A is considered the environmentally preferred alternative due to the ability to implement environmental mitigations. These conditions are identified in Appendix C and D of the DEIS.

DNRC will complete a lease agreement with Martinsdale Wind Farm LLC to allow development of the subject school trust land for placement of up to 15 wind turbines on state land.



Clive Rooney
DNRC Area Manager
Northeastern Land Office

CHANGES TO THE DEIS

This table contains the changes to text in the DEIS. The first column cites the page and paragraph where there is a text change. The second column contains the original text that is being deleted for the FEIS. The third column contains the new text that is included in the FEIS to replace the deleted text.

Location	Original Text	New Text
Page 1-9, Add to the last paragraph.		There would be an increase in vehicle exhaust emissions during construction from heavy equipment, trucks, and associated employee vehicles. There would be a smaller increase during operations from operation and maintenance vehicles. Neither of these increases are expected to cause air quality to exceed the Class II airshed standards.
Figures 2.2-1, 2.2-2, 2.2-3, 3.1-1, 3.1-2, 3.2-1, 3.3-1, 4.3-1, top left corner of each map.	Draft Map	Remove text that says “Draft Map.”
Page 4-3, second to last sentence in the first paragraph.	Wind turbines are expected to kill up to a maximum of 4.62 birds and 13.4 bats per tower per year and have little additional effect on migratory populations. Objective #2 would be achieved through selection of the Alternative A.	Wind turbines are expected to kill up to a maximum of 4.62 birds and 13.4 bats per tower per year. The number of estimated bird and bat fatalities is extrapolated from the single year’s mortality data available from the Judith Gap facility. Wind farm bird and bat mortality monitoring is an evolving science and improvements to survey protocols are expected.

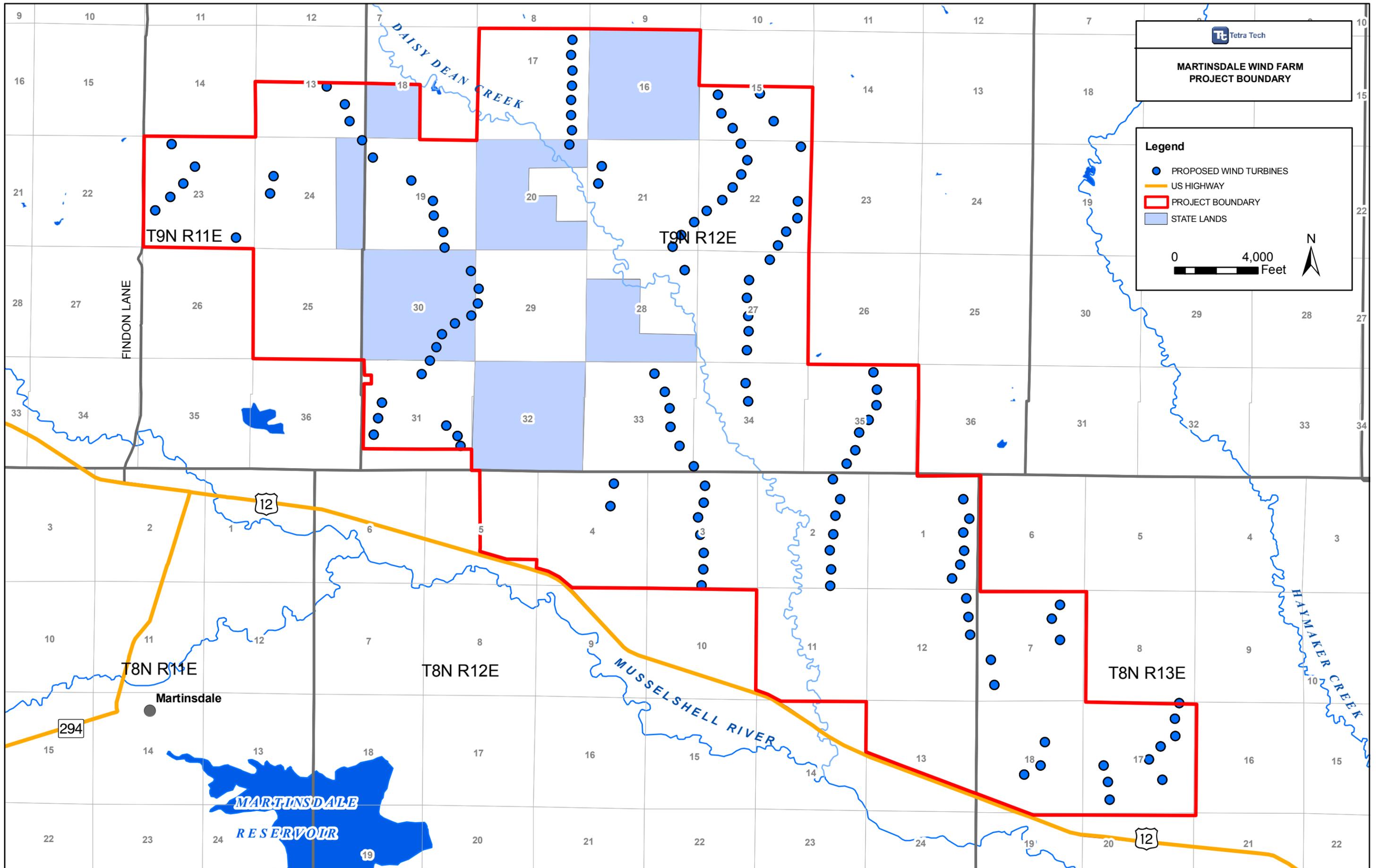
Location	Original Text	New Text
Continued		<p>The monitoring data from this facility, as well as other operating wind farms, will lead to an improved ability to predict the effects of wind farm operation on bird and bats.</p> <p>Presently, data does not exist to estimate bat population. Therefore, the scale of effect from 13.4 bat deaths per tower on bat populations is unknown.</p> <p>Objective #2 would be achieved through selection of the Alternative A.</p>
Table 4.3-8, Subsection “Birds” the eighth line of the subsection.	<i>Tympanuchus phasianellus</i> , Sharp-tailed Grouse	The reference to <i>Tympanuchus phasianellus</i> , Sharp-tailed Grouse, is deleted because the plains sharp-tailed grouse, (subspecies <i>jamesi</i>) as would be found in this area, are not a Species of Concern. (See Comments on the DEIS number 76 from Montana Fish Wildlife and Parks.)

ERRATA

This table contains corrections to text in the DEIS. The first column cites the page and paragraph where there is a text error. The second column contains the original text that was in error. The third column contains the new text that has been corrected for the FEIS. The text in error and the correct text are underlined.

In addition to the text changes there were inconsistencies in the project boundary on some of the maps in the DEIS. An attached map shows the correct perimeter of the project area.

Location in the Draft	Original Text	Corrected Text
Cover Sheet	Township 9 North, Range 11 East, P.M.M., <u>Wheatland</u> County	Township 9 North, Range 11 East, P.M.M., <u>Meagher</u> County
Page 2-11, Table 2.2-2	Township 9 North, Range 12 East, <u>Meagher</u> County	Township 9 North, Range 12 East, <u>Wheatland</u> County
Page 3-14, second paragraph	Species observed weregreater sage grouse, sharp-tailed grouse . . .	Delete greater sage grouse and sharp-tailed grouse.
Page 3-14, third paragraph	Species observed in this habitat were: greater sage grouse . . .	Delete greater sage grouse.
Page 3-17, first paragraph after Table 3.3-1.	Based on the Montana FWP summary of the survey (Montana FWP 2008), the majority of the antelope observed were in the <u>northeast</u> portion of the project area within small grain crop areas or grassland herbaceous cover.	Based on the Montana FWP summary of the survey (Montana FWP 2008), the majority of the antelope observed were in the <u>northwest</u> portion of the project area within small grain crop areas or grassland herbaceous cover. (See comment number 74 from Fish Wildlife and Parks)
Page 4-31, Table 4.3-8	Sharp-tailed Grouse	Delete sharp-tailed Grouse.
Page 5-2	Representative Harry <u>Clock</u>	Representative Harry <u>Klock</u>
Project boundary on maps	Some maps have incorrect project perimeter.	The attached map has the correct project perimeter.



Tetra Tech

**MARTINSDALE WIND FARM
PROJECT BOUNDARY**

Legend

- PROPOSED WIND TURBINES
- US HIGHWAY
- PROJECT BOUNDARY
- STATE LANDS

0 4,000 Feet

N

COMMENTS AND RESPONSES TO COMMENTS

#	Name	Issue	Response
1	Schneider	Reports should include the names, and qualifications of all contributors	Comment Noted
2	Schneider	. . . information contained in the draft EIS is inadequate to assess the impacts of the proposed project as pertains to Objective No. 2: Manage the rangeland for the desired future condition characterized by healthy native plant and wildlife communities.	<i>Section 4.2.2.3</i> points out that over 99% of the state land would remain undisturbed and that the existing land uses of grazing and recreational use could continue if the state lands were included in the proposed project. <i>Table 2.4-2</i> summarizes the effects of the alternatives on Objective No. 2.
3	Schneider	. . . what cost in terms of real dollars? Would the proposed wind energy development result in the state needing to spend more money in monitoring and maintaining the property?	<p>Martinsdale Wind Farm LLC is responsible for operation and maintenance of the wind farm.</p> <p>Based upon experience with the Judith Gap project, there is an initial commitment of DNRC staff time during project construction. Post construction, little staff time has been needed to monitor operations as wind farm operation and existing livestock and agricultural uses are compatible. There is a commitment of DNRC staff time to the Avian / Bat technical advisory committee.</p> <p>The additional commitment of staff time is modest and commensurate with the increased income generated from the project.</p>
4	Schneider	. . . who pays for both short term and long term monitoring and maintenance.	Please see the response to comment number 3.
5	Schneider	Description needs more detail and should include such information as location in relation to the Little Belt and Castle Mountains, along with Daisy Dean Creek; the presence of pine forest habitat; and it's location within Meagher and Wheatland Counties.	<i>Figure 1.1</i> shows the location of the project in relation to the counties, forested lands, Daisy Dean Creek, and the Little Belt and Castle Mountains.

**COMMENTS AND RESPONSES TO COMMENTS
(Cont.)**

#	Name	Issue	Response
6	Schneider	Section 10.01 include statements such as soil maps for the area were examined to determine locations of highly erodible soils. Efforts were then made to design the project so that these areas were avoided or that special mitigation measures were taken to prevent erosion by ...	<i>Section 4.3.1.1</i> discusses avoidance of fragile, unstable, and erodible soils in the project design.
7	Schneider	... subsections of 10.10, it is anticipated that a potential impact would be identified followed by a brief description of the studies conducted to address that impact.	Comment Noted
8	Schneider	The proposed project, if constructed, would result in the loss of habitat and vegetation for wildlife. Studies to address this issue included ... detailed habitat mapping, perhaps?	<i>Figures 2A and 2B</i> of the wildlife study provide habitat maps of the project area.
9	Schneider	10.3 There is no mention of large mammals here, although the impacts to large mammals are definitely an issue	<i>Section 4.3.3.2 Big Game</i> discusses impacts to large mammals.
10	Schneider	10.3 There is no mention of listed or sensitive species	<i>Section 4.3.4 Special Status Species</i> discusses impacts to listed and sensitive species.
11	Schneider	10.3 ... no distinction in terms of types of birds, such as raptors versus grassland songbirds	<i>Section 4.3.3.2, Birds</i> differentiates impacts on raptors, game birds, and grassland birds.
12	Schneider	10.3 Once the potential areas of impacts are described than [sic] the studies that were performed to address these concerns should be, for example raptor surveys and nest surveys were performed to identify potential impacts to raptors.	Comment Noted
13	Schneider	1.11.1 Water Quantity, Quality, and Distribution should be placed under Section 1.10	Comment Noted
14	Schneider	I disagree with the statement "... there are few small wetland areas.	Comment Noted
15	Schneider	... there are significant areas of wetlands all along Daisy Dean Creek and along sections of some of the seasonal tributaries	Wetlands are included in the riparian areas shown on <i>Figure 3.2-1</i> and discussed in <i>Section 3.3.2, Riparian</i> .

**COMMENTS AND RESPONSES TO COMMENTS
(Cont.)**

#	Name	Issue	Response
16	Schneider	This section should acknowledge the presence and importance of both Daisy Dean Creek and the surrounding wetlands. Daisy Dean Creek wetlands could be restored as part of the project's mitigation measures	Comment Noted
17	Schneider	Daisy Dean Creek is a valuable surface water feature. It's valuable to the fish and wildlife of the project area	Comment Noted
18	Schneider	1.11.1 does not convincingly make the argument that a Section 404 permit is not required for this project.	Fill of less than 1/2 acre of wetlands is allowed under the Army Corps of Engineers Nationwide 12 permit. The project is anticipated to disturb less than 1/2 acre of wetlands so an individual 404 permit is not needed.
19	Schneider	Section 1.11.1 should also state that no construction activities shall occur within these habitats nor within a surrounding buffer area of X meters	There would be construction disturbance associated with the crossing of Daisy Dean Creek. It is anticipated that the total disturbance of wetlands would be less than 1/2 acre. Please see the response to comment 18.
20	Schneider	Section 1.11.1 should also state that mitigation measures shall be put in place that will protect these sensitive habitats from sedimentation due to erosion and pollutants, such as oil leaked from maintenance vehicles or turbines.	<i>Section 1.11</i> explains that the storm water pollution prevention plan addresses these issues. Also please see Section 2.3, <i>Martinsdale Wind Farm LLC Best Management Practices During Wind Farm Construction</i> .
21	Schneider	Section 1.11.2. Air quality will be impacted by an increase in exhaust emitting vehicles being driven in the area for construction and maintenance purposes . . . document . . . needs to acknowledge such facts as increased emissions from an increased number of cars and then make the argument that the amount of increase is insignificant	A statement concerning vehicle exhaust emissions has been added to Section 1.11.2. Please see the Changes to the EIS section.
22	Schneider	Section 1.11.3 Recreational Use should be placed under Section 1.10	Recreational use was an issue eliminated from further study and is included in the section containing all the other issues eliminated from further study.

**COMMENTS AND RESPONSES TO COMMENTS
(Cont.)**

#	Name	Issue	Response
23	Schneider	The decision to lift the closure could have significant impacts on large game species in the area	There is currently no recreational closure. Public use is limited by lack of legal access. This situation is not expected to change.
24	Schneider	The project will have an impact on wildlife, especially large game species, but that impact may be partially mitigated by the closure of the area to hunting	Impacts to big game are discussed in <i>Section 4.3.3.2, <u>Big Game</u></i> .
25	Schneider	If an issue requires mitigation to become insignificant, then it needs to be discussed under Section 1.10. Public Safety requires mitigation, therefore it needs to be discussed	Public safety was an issue eliminated from further study and is included in the section containing all the other issues eliminated from further study.
26	Schneider	Noxious weeds needs to be under Section 1.10	Noxious weeds was an issue eliminated from further study and is included in the section containing all the other issues eliminated from further study.
27	Schneider	If an issue requires mitigation, then it requires review to ensure that the mitigation will be adequate	Comment Noted
28	Schneider	. . . the description of the project impacts to wildlife and their habitat is inadequate	Comment Noted
29	Schneider	The project has the potential to significantly impact pronghorn antelope, elk, black bear, Montana Fish Wildlife and Parks deer, and white tail deer. The EIS, however, fails to address this impact	Impacts to big game are discussed in <i>Section 4.3.3.2, <u>Big Game</u></i> .

**COMMENTS AND RESPONSES TO COMMENTS
(Cont.)**

#	Name	Issue	Response
30	Schneider	Antelope, elk, and deer species (particularly antelope and elk) may either abandon the project area all together or the stress from the additional disturbance may result in weaker animals. Abandonment of the habitat results in either overcrowding of adjacent habitat already occupied to capacity or having to resort to lower quality habitat. In either case the end result means weaker animals, including young that aren't strong enough to avoid predation, along with adults and young alike that become more susceptible to death from disease, starvation, and weather extremes	Comment Noted
31	Schneider	Mitigation measures should include either the removal or replacement of area fencing with wildlife friendly fencing	Comment Noted
32	Schneider	If hunting were to be ceased within the project area then it would mitigate the increased stress and possible abandonment of habitat that may result from the development of this project	Comment Noted
33	Schneider	The number of elk using the project site are probably much higher than were observed, especially during the winter months. It is likely that the elk come down from the surrounding hills usually around dusk or right after it gets dark and leave at dawn in order to avoid human predators.	Comment Noted
34	Schneider	The big game data from the Wildlife Assessment Report in Appendix A has substantial limitations to its value. The data was not collected in a systematic manner and so it is not comparable across time	Comment Noted

**COMMENTS AND RESPONSES TO COMMENTS
(Cont.)**

#	Name	Issue	Response
35	Schneider	The studies conducted for the Wildlife Assessment, included in Appendix A, do not provide meaningful information on the potential impact to bats . . . A much better study of bat usage of the project site needs to be designed and implemented	Comment Noted
36	Schneider	The only meaningful data collected during the studies was bat species presence, not absence. . . . additional bat species may also occur in the area that were not recorded	Comment Noted
37	Schneider	At this time we know very little about how bats may be using the project area, including it's habitats. Do they move back and forth between the surrounding mountains and the grassland habitat on a daily basis? Do they follow the creek corridor? Are there major migration corridors along these mountain ranges? Do they feed above the ridges in the area of the proposed turbine blades?	Comment Noted. The fatality monitoring will provide additional information useful at future installations or to make changes in the operation of this facility.
38	Schneider	I don't see how a mortality study conducted after the project is built will mitigate bat mortality	Ongoing mortality studies are designed to gather knowledge of how wind farms impact the species in the area.
39	Schneider	. . . further studies need to be conducted to determine the potential impact of wind energy development on bat species in this area and that these studies should be conducted prior to project development, not after	Studies are to be ongoing.
40	Schneider	. . . data collected about bats during 2007, did not take in to consideration that it was a drought year and there was a low number of mosquitoes	Comment Noted
41	Schneider	The EIS does not clearly point out the impacts that the project is likely to have on raptors	Section 4.3.3.2, <i>Raptors</i> , discusses the impact the project would have on raptors.

**COMMENTS AND RESPONSES TO COMMENTS
(Cont.)**

#	Name	Issue	Response
42	Schneider	There is potential that eagle and goshawk breeding habitat will be abandoned once the wind turbines are built that are proposed to be placed in the vicinity of these forested areas	Comment Noted
43	Schneider	Ferruginous hawks that utilize the grassland areas for hunting and breeding may also abandon the area after development of the project	Comment Noted
44	Schneider	The Wildlife Assessment in Appendix A did not take into account that 2007 was an unusual year for the area. Not just because of the drought and relatively low number of mosquitoes, but also because the Martinsdale Reservoir was drained that year for repairs	Comment Noted
45	Schneider	. . . because the Martinsdale Reservoir was drained in 2007 for repairs. Therefore potential impacts/mortalities to raptors may be higher than anticipated by some people's estimates	Comment Noted
46	Schneider	. . . how did Horizon come up with the turbine array and road alignments that are being proposed? It appears that the project site plan did not take wildlife impacts into consideration at all. If it had it would have avoided placing turbines along Daisy Dean Creek and forested ridges, areas of high importance to wildlife. Instead the site plan would have placed more turbines in areas anticipated to have less impacts on wildlife	Placement of wind turbines is generally restricted to locations having wind conditions that are most favorable for operation of the generators.
47	Montana Fish Wildlife and Parks	There is some discrepancy in the identified project area boundary	A corrected map has been attached.

COMMENTS AND RESPONSES TO COMMENTS
(Cont.)

#	Name	Issue	Response
48	Montana Fish Wildlife and Parks	Request that loss of recreational opportunities be addressed in the event that state lands currently available to the public will be closed to public use	<i>Section 1.11.3</i> discusses the lifting of the recreational closure normally imposed for commercial leases. No state lands currently accessible without adjacent landowner permission are involved in the project area. No loss of existing recreational access will occur.
49	Montana Fish Wildlife and Parks	MFWP disagrees that a rate of 13.4 bats/turbine/year killed would have little impact on migratory populations	The statement in Section 4.2.2 has been changed to clarify what is known about the impact on migratory bat populations. Please see the Changes to the EIS section.
50	Montana Fish Wildlife and Parks	Martinsdale Wind farm should identify potential mitigation if fatality estimates suggest that this fatality rate is plausible. Mitigation measures should include increasing the cut-in speed of turbines during the migration period if fatality estimates prove to be high	The technical advisory committee may recommend mitigation measures as necessary.
51	Montana Fish Wildlife and Parks	. . . potential number of mortalities of bats (e.g. >1600 animals per year, including those identified as Species of Concern) needs to be closely monitored	<i>Appendix C</i> contains the ongoing monitoring plan.
52	Montana Fish Wildlife and Parks	The EIS fails to mention the development of an additional wind project by Gaelectric (Great Falls Tribune, March 8, 2009). This project proposes to install up to 180 3.0 MW turbines between Judith Gap and Harlowton. . . it should be taken into account when analyzing the cumulative impacts for birds, bats, and wildlife displacement in the final EIS	The Administrative Rules of Montana, Section 36.2.522 (7) states that “Related future actions must also be considered when these actions are under concurrent consideration by any state agency through pre-impact statement studies, separate impact statement evaluation, or permit processing procedures.” The EIS discusses all the known projects at the time of publication. It is the understanding of the agency that any new project would be dependent on the construction of additional transmission capacity. Until there is a definite plan for increased transmission capacity, additional projects are speculative.

COMMENTS AND RESPONSES TO COMMENTS
(Cont.)

#	Name	Issue	Response
53	Montana Fish Wildlife and Parks	The cumulative impacts are of particular concern with respect to potential bat mortality in the area as identified above. The prospect of approximately 1500 bats per year at as many as 3 wind projects is of concern. The proposed fatality monitoring should identify potential concerns, and a minimum of 1-week intervals for post-construction monitoring is encouraged	Please see the response to comment number 52. The technical advisory committee will use adaptive management to adjust monitoring protocols as necessary.
54	Montana Fish Wildlife and Parks	. . . the potential number of wind energy projects in the area suggests that we should continue to be alert to potential cumulative impacts of multiple industrial wind parks on grassland birds	Please see the response to comment number 52.
55	Montana Fish Wildlife and Parks	. . . studies on grassland bird displacement have not been conducted in areas with greater than 40 turbines. Extrapolating that data to this area with potential for greater than 400 turbines is probably not appropriate	Section 4.3.3.2, <i>Rationale for not Conducting Displacement Studies of Grassland Birds</i> , discusses why this was not done. Also, please see the response to comment number 52.
56	Montana Fish Wildlife and Parks	If map 1.1-1 were the project boundary, then all of one section and a portion of another section would be legally accessible from Findon Lane	No state lands adjacent to Findon Lane are within the project boundary. Please see the attached corrected map.
57	Montana Fish Wildlife and Parks	Since state lands subject to a commercial lease are closed to recreational use as part of a group of categorical closures (page 1-10) these sections would be closed to hunting and public recreation. MFWP would be opposed to the closure of these sections to the public	Section 1.11.3 discusses the lifting of the recreational closure.
58	Montana Fish Wildlife and Parks	If these sections were included in the project boundary, then MFWP would suggest that recreational use of the area should not be excluded from analysis in the EIS. Given the number of wind projects in the vicinity, the cumulative impacts on public access to hunting and outdoor recreation may be impacted	Please see the attached corrected map and the response to comment number 57.

COMMENTS AND RESPONSES TO COMMENTS
(Cont.)

#	Name	Issue	Response
59	Montana Fish Wildlife and Parks	. . . recommend that the east bench be avoided if possible and if it is not avoided that windmills be set as far back from the ponderosa pine habitat as possible	Comment Noted.
60	Montana Fish Wildlife and Parks	If T9N R12 E section 16 is within the project area, MFWP would recommend that no development be done in the east ½ of the section. If the only development would be a road in the SW ¼ we would recommend that rest of section be removed from the project	At this time the road is the only development anticipated in section 16. The entire section is part of the DNRC lease.
61	Montana Fish Wildlife and Parks	We recommend that turbines be placed a minimum of 300 ft from riparian habitats	Comment Noted.
62	Montana Fish Wildlife and Parks	MFWP recommends reseeding disturbed areas to regionally native species to reduce the overall impacts of disturbed areas	Where there was native vegetation prior to construction, appropriate native species will be required for revegetation..
63	Montana Fish Wildlife and Parks	Turbines should be placed at a minimum of ¼ mile (but preferably ½ mile) from known raptor nest	<i>Appendix D, Mitigation Measures</i> specifies turbines a minimum of 1/2 mile from known raptor nests.
64	Montana Fish Wildlife and Parks	. . . construction activities in the vicinity of nesting ferruginous hawks should be avoided during the nesting season (April – July).	Comment Noted.
65	Montana Fish Wildlife and Parks	. . . avoid placing turbines amidst ground squirrel colonies to reduce the attractiveness of the area to raptors. A map of the ground squirrel colonies would be a valuable addition to the EIS	Comment Noted.
66	Montana Fish Wildlife and Parks	The mitigation measures identified in the Wildlife Assessment should be employed, including the application of Avian Power Line Interaction Committee (APLIC, 1994) guidelines	Mitigation measures are identified in <i>Appendix D, Mitigation Measures</i> . All internal collector lines for the project are to be buried lines.
67	Montana Fish Wildlife and Parks	MFWP encourages carcass searches be conducted no less frequently than once per week.	Please see the response to comment number 53.

**COMMENTS AND RESPONSES TO COMMENTS
(Cont.)**

#	Name	Issue	Response
68	Montana Fish Wildlife and Parks	As part of the scavenger removal trials, we encourage the use of bat carcasses as often as possible. It has been suggested that small birds (e.g. house sparrows) do not accurately represent a bat carcass to scavengers	Comment Noted.
69	Montana Fish Wildlife and Parks	In the event that scavenger removal trials suggest that scavenger removal rates are high, MFWP would recommend that carcass search intervals be reduced.	Comment Noted.
70	Montana Fish Wildlife and Parks	MFWP would like to see an effort to monitor pronghorn antelope responses to or displacement from the wind farm. We would recommend that monitoring should start in July of 2009 and be completed annually for at least 5 years	The operator may be interested in participating in a wider area study if one is developed.
71	Montana Fish Wildlife and Parks	MFWP strongly recommends pursuing a grassland bird displacement study, and conducting pre-construction grassland bird surveys at least on School State Trust lands	Please see the response to comment number 55.
72	Montana Fish Wildlife and Parks	There is no basis to extrapolate the behavior of chestnut-colored longspurs and western meadowlarks post-construction of turbines to McCown's longspur	Please see the response to comment number 53.
73	Montana Fish Wildlife and Parks	Monitoring efforts should consider addressing the impacts of the wind project on mountain plover, burrowing owl and long-billed curlew	Please see the response to comment number 53.
74	Montana Fish Wildlife and Parks	On page 3-17 the discussion of location of antelope in the winter should have stated they were located in the northwest portion, not northeast portion of the area. During the winter survey 3 groups, 53 antelope were seen in T9N R11E sections 26 representing 23% of all antelope observed on this flight	The text in <i>Section 3.3.2, Big Game</i> , been corrected. Please see the errata section.
75	Montana Fish Wildlife and Parks	If T9N R11E sections 26 is included within the project area winter habitat for pronghorn should be identified and avoided	Section 26 is not included in the project boundary. Please see the project boundaries on the attached corrected map.

COMMENTS AND RESPONSES TO COMMENTS
(Cont.)

#	Name	Issue	Response
76	Montana Fish Wildlife and Parks	The EIS the Wildlife Assessment state sharp-tailed grouse are a Species of Concern (S1). Plains sharp-tailed grouse, (subspecies jamesi) as would be found in this area are not a Species of Concern	Thank you for the clarification. The text in Table 4.3-8 referring to sharp-tailed grouse has been deleted. Please see the Changes to the EIS section.
77	Montana Fish Wildlife and Parks	MFWP could not find the “Appendix Fig. 1” referenced on page 12 of the “Martinsdale Wind Power Project Assessment”	Comment Noted.
78	Montana Fish Wildlife and Parks	On page 50 of the Wildlife Assessment, the number of bald eagles observed between February 15 and November 15 is identified as “XX”.	Comment Noted.
79	Montana Fish Wildlife and Parks	Are turbines proposed on School State Trust Lands in Phase I of this project?	Up to 15 turbines could be erected on state lands during Phase I
80	Montana Fish Wildlife and Parks	Would DNRC consider submitting the wildlife data collected to the Natural Heritage Program point observation database?	Any data collected by or submitted to DNRC should be available to another agency as well as the public. Martinsdale Wind Farm LLC would consider sharing monitoring data with the Natural Heritage Program.
81	Larson	I'd like to go on record as opposing the wind farm as proposed, generally, in any of the options or alternatives presented.	Comment Noted.
82	Larson	. . . failure for the project to mitigate ELECTRIC RATES FOR MONTANA CONSUMERS.	Comment Noted.
83	Larson	. . . inadequate and somewhat cursory treatment of visual resources. . . . none of the models project any sort of view from the town of Martinsdale	From some places in Martinsdale it is likely that the tops of the blades of the nearest 406 foot Suzlon wind turbines will be visible above the cottonwood tress.
84	Larson	The estimates of bird fatalities (4 per year?) at the Judith Gap wind farm seem extraordinarily low.	Table 4.3-6 lists the estimated bird fatalities at Judith Gap as 4.5 per turbine per year. Multiply that by 90 turbines to get a total estimate of 405 birds per year.
85	Larson	. . . a suggestion that impact from roads can be lessened by 'posting speed limits' is naive, and perhaps something akin to wishful thinking.	At the Judith Gap project and the Express pipeline projects speed limits were effective in preventing wildlife vehicle interactions.

COMMENTS AND RESPONSES TO COMMENTS
(Cont.)

#	Name	Issue	Response
86	Larson	. . . ambiguous statements concerning transmission lines built "either" above or underground are misleading. Certainly, these options have already been evaluated, with the preferred (cheapest, easiest) alternatives likely to be adopted, regardless of long-term impacts	<i>Section 4.3.2, Birds</i> states that all internal collection lines are anticipated to be buried lines.
87	Larson	. . . other alternatives were not seriously considered.	Comment Noted.

COMMENT LETTERS

Montana Dept. of Natural Resources and Conservation
Northeastern Land Office
Martinsdale Wind Farm
PO Box 1021
Lewistown, MT 59457

RE: MARTINSDALE WIND FARM DRAFT EIS

Dear Sir/Madam:

Thank you for the opportunity to comment on the Martinsdale Wind Farm Draft EIS. I believe I hold a unique and significant perspective for reviewing this document for the following reasons:

- I was a principal biologist involved in collecting a significant portion of the wildlife and wildlife habitat field data used in this EIS, so I understand the validity or lack of validity of the data being referenced;
- I grew up in the Tehachapi Mountains, one of the first areas developed in the west for wind energy, so I have first hand knowledge of what it is like to live in a rural farming and ranching area that is developed for wind energy;
- Many years ago I worked for the Tehachapi Resource Conservation District (TRCD) for whom one of my responsibilities included reviewing the grading plans of wind energy projects for Kern County, so I have background in the “on the ground” impacts of wind energy construction;
- I gave tours of wind farms for TRCD in which my role was to explain the impacts of wind energy on the natural resources of the area, including wildlife;
- I was employed as a research associate by the California Energy Commission to work on a project that assessed bird mortalities resulting from wind energy development in the Tehachapi and San Gabriel passes;
- I have been responsible for writing and reviewing many environmental documents, including Environmental Impact Statements;
- I was a Natural Resource Planner for Santa Cruz County, California; and
- I am a professional biologist, whose primary area of expertise is the area of wildlife biology, but who also has a background in botany, hydrology, erosion control, civil engineering and construction, visual aesthetics, farming and ranching.

As both a general comment and specific to this report, including the report in Appendix A, it is my professional opinion that all biological reports should include the names of all individuals involved in both the data collection and the report writing. That information should be specific as to the field data that was collected and the report sections that were authored or contributed to by an individual. Report editors should also be noted, along with their specific contributions, such as whether it was content or grammar. All biological reports should also include at a minimum a brief description of each individual’s qualifications in regards to the tasks performed, if not a complete resume that is included as an attachment. Without such information the reader has no way to assess the reliability of data collected or the validity of final conclusions.

Please find attached my specific comments in regards to this draft EIS. It is my professional opinion that the information contained in the draft EIS is inadequate to assess the impacts of the proposed project as pertains to Objective No. 2: Manage the rangeland for the desired future condition characterized by healthy native plant and wildlife communities.

In regards to Objective No. 1, obviously the leasing of the land for wind energy development will bring in more revenue. My only question is at what cost in terms of real dollars? Would the proposed wind energy development result in the state needing to spend more money in monitoring and maintaining the property? If it does, although the school trust may gain money in its coffers, it could be like robbing Peter to pay Paul... another agency, probably DNRC and the highway department, would have to spend more money. That might not bother DNRC, but it might bother the taxpayers if they knew that they were just paying for more bureaucracy and not gaining any real money. I do not know this to be the case, but the EIS doesn't really discuss who pays for both short term and long term monitoring and maintenance. Roads don't maintain themselves and you can't expect the fox to monitor the hen house, not if you want any hens left; but the fox could pay for the monitoring and maintenance, instead of the Montana taxpayers, in exchange for some of the golden eggs. Just something that I felt needed to be discussed in the document.

Respectfully,

Julie Schneider
Wildlife Ecologist

Comments on the Draft EIS for Horizon Wind Energy's Martinsdale Wind Farm

1.2. Location

Description needs more detail and should include such information as location in relation to the Little Belt and Castle Mountains, along with Daisy Dean Creek; the presence of pine forest habitat; and its location within Meagher and Wheatland Counties.

1.10 Issues Studied in Detail

The section heading implies that this section will address those issues for which there are either known or potential impacts.

10.1.1 Soil Resources

Potential adverse impacts to soil include increased soil erosion as a result of disturbance to soil and increased runoff as a result of soil compaction and loss of vegetation cover. In response to that impact, one might expect this section then to include statements such as *soil maps for the area were examined to determine locations of highly erodible soils. Efforts were then made to design the project so that these areas were avoided or that special mitigation measures were taken to prevent erosion by ...*

Same with all of the other subsections of 10.10, it is anticipated that a potential impact would be identified followed by a brief description of the studies conducted to address that impact.

10.1.2 Land Use and Vegetation

The proposed project, if constructed, would result in the loss of habitat and vegetation for wildlife. Studies to address this issue included ... detailed habitat mapping, perhaps?

1.10.3 Wildlife

Only birds, bats, and small mammals are briefly mentioned in this section. There is no mention of large mammals here, although the impacts to large mammals are definitely an issue. There is no mention of listed or sensitive species, no distinction in terms of types of birds, such as raptors versus grassland songbirds. Once the potential areas of impacts are described then the studies that were performed to address these concerns should be, for example raptor surveys and nest surveys were performed to identify potential impacts to raptors.

1.11 Issues Eliminated From Further Studies

1.11.1 Water Quantity, Quality, and Distribution

This issue should be placed under Section 1.10, as it requires mitigation measures in order to be properly addressed. I disagree with the statement "... there are few small wetland areas." It implies that the amount of wetlands in the area is insignificant, however, there are significant

areas of wetlands all along Daisy Dean Creek and along sections of some of the seasonal tributaries. In a dry region, such as this project site, areas of wetland habitat become even more critical. True, these wetlands have been degraded due to grazing practices, but they could be restored as part of the project's mitigation measures.

I also disagree with the statement "Because of the absence of valuable surface water features,..." Daisy Dean Creek is a valuable surface water feature. It's valuable to the fish and wildlife of the project area.

This section does not convincingly make the argument that a Section 404 permit is not required for this project. This section should acknowledge the presence and importance of both Daisy Dean Creek and the surrounding wetlands. It should also state that no construction activities shall occur within these habitats nor within a surrounding buffer area of X meters. It should also state that mitigation measures shall be put in place that will protect these sensitive habitats from sedimentation due to erosion and pollutants, such as oil leaked from maintenance vehicles or turbines.

1.11.2 Air Quality

Air quality will be impacted by an increase in exhaust emitting vehicles being driven in the area for construction and maintenance purposes. Will these increases be significant, probably not, but a document such as this needs to acknowledge such facts as increased emissions from an increased number of cars and then make the argument that the amount of increase is insignificant (if the argument can be made).

1.11.3 Recreational Use

This issue should be placed under Section 1.10. I disagree with the decision to lift the recreational use closure and this issue definitely needs to be placed under Section 1.10 Issues Studied in Detail. The decision to lift the closure could have significant impacts on large game species in the area. The project will have an impact on wildlife, especially large game species, but that impact may be partially mitigated by the closure of the area to hunting. This rationale will be explained in greater detail further along in my review.

1.11.4 Public Safety

If an issue requires mitigation to become insignificant, then it needs to be discussed under Section 1.10. This issue requires mitigation, therefore it needs to be discussed, even if that discussion is brief.

1.11.5 Noxious Weeds

Again, this issue needs to be under Section 1.10. It is an issue that hopefully will be mitigated by an as of yet non-existent weed control plan. Anything that requires mitigation is an issue that needs to be discussed under Section 1.10. If it is such a non-existent issue as to not require

mitigation, then it can come under Section 1.11. If it requires mitigation, then it requires review to ensure that the mitigation will be adequate.

As time is running short for me to get my comments in I am foregoing the detailed blow by blow commenting on this very long document. In general the description of the project impacts to wildlife and their habitat is inadequate at this time.

Large Game Species

The project has the potential to significantly impact pronghorn antelope, elk, black bear, mule deer, and white tail deer. The EIS, however, fails to address this impact.

Antelope, elk, and deer species (particularly antelope and elk) may either abandon the project area all together or the stress from the additional disturbance may result in weaker animals. Abandonment of the habitat results in either overcrowding of adjacent habitat already occupied to capacity or having to resort to lower quality habitat. In either case the end result means weaker animals, including young that aren't strong enough to avoid predation, along with adults and young alike that become more susceptible to death from disease, starvation, and weather extremes.

Most of the state lands have fencing that creates barriers to large game species, particularly antelope. Mitigation measures should include either the removal or replacement of area fencing with wildlife friendly fencing. This would help reduce stresses on these wildlife species by allowing them to escape perceived threats more easily. A barrier just creates additional physiological stress on animals due to fear and panic.

Although it may seem like large game species can adapt to the presence of humans when one drives through areas such Yellowstone Park where elk can be seen lying around visitor centers and parking lots. You would not see such behavior if someone occasionally showed up and shot at them. The game species may be able to adapt to the disturbance of the wind turbines and additional humans in the area, but not if they continue to be hunted. Continued hunting will only result in higher stress levels for these animals whenever humans are around. If hunting were to be ceased within the project area then it would mitigate the increased stress and possible abandonment of habitat that may result from the development of this project.

The number of elk using the project site are probably much higher than were observed, especially during the winter months. It is likely that the elk come down from the surrounding hills usually around dusk or right after it gets dark and leave at dawn in order to avoid human predators.

The big game data from the Wildlife Assessment Report in Appendix A has substantial limitations to its value. The data was not collected in a systematic manner and so it is not comparable across time. For instance, there may have been 100 antelope observed over a series of days because the observer was doing a task that required them to drive extensive distances around the project site. Later on there may have been only 20 or so antelope observed over a series a days and that is because the observer drove only a short distance on the project site those

days and through habitat that was less desirable to antelope than where they drove on previous occasions. That doesn't mean that there was a seasonal movement of antelope.

Bats

The studies conducted for the Wildlife Assessment, included in Appendix A, do not provide meaningful information on the potential impact to bats from this project. A much better study of bat usage of the project site needs to be designed and implemented before anyone can have the slightest idea what potential impacts to bats may occur from this project.

The only meaningful data collected during the studies was bat species presence, not absence. Most of the species anticipated to occur within the project area were identified through recordings of echolocations, however, additional bat species may also occur in the area that were not recorded.

At this time we know very little about how bats may be using the project area, including it's habitats. Do they move back and forth between the surrounding mountains and the grassland habitat on a daily basis? Do they follow the creek corridor? Are there major migration corridors along these mountain ranges? Do they feed above the ridges in the area of the proposed turbine blades?

I don't see how a mortality study conducted after the project is built will mitigate bat mortality. I doubt that the state will require the turbines to be dismantled if bats are being killed at higher than anticipated rates, so how is that loss really mitigated. It seems to me that further studies need to be conducted to determine the potential impact of wind energy development on bat species in this area and that these studies should be conducted prior to project development, not after.

What little data there was collected about bats during 2007, did not take in to consideration that it was a drought year for the area. I was told that normally a person would be eaten alive by mosquitos during certain parts of the summer, but that summer there were virtually no mosquitos, which could have resulted in a temporary decrease in bats for the area as they left temporarily for better hunting grounds.

Raptors

The EIS does not clearly point out the impacts that the project is likely to have on raptors. Two eagle nests were found in the pine forests along the ridge tops. Based on behavior, it also appeared that there was a goshawk nest in one of the pine forested areas as well. There is potential that this breeding habitat will be abandoned once the wind turbines are built that are proposed to be placed in the vicinity of these forested areas.

Ferruginous hawks that utilize the grassland areas for hunting and breeding may also abandon the area after development of the project.

The Wildlife Assessment in Appendix A did not take into account that 2007 was an unusual year for the area. Not just because of the drought and relatively low number of mosquitos, but also because the Martinsdale Reservoir was drained that year for repairs. The normally fish-stocked

lake attracts many raptors, especially eagles. Local residents have said that it is not unusual for there to be as many as 30 eagles observed around town at one time. At no time during our surveys in 2007 were raptors observed in such high densities, which suggests that it may have been an unusual year for raptors in the area with their numbers being lower than normal. Therefore potential impacts/mortalities to raptors may be higher than anticipated by some people's estimates.

I'd like to know more about how Horizon came up with the turbine array and road alignments that are being proposed. It appears that the project site plan did not take wildlife impacts into consideration at all. If it had it would have avoided placing turbines along Daisy Dean Creek and forested ridges, areas of high importance to wildlife. Instead the site plan would have placed more turbines in areas anticipated to have less impacts on wildlife.

I would like to provide further comments, but my time is up. Please feel free to contact me by email if you would like to discuss any of my comments in further detail or if you need clarification. Unfortunately I didn't start my review of the EIS soon enough, so I apologize for the shortcomings of this review, but thank you again for the opportunity.

Julie Schneider
Wild West Ecological Consulting



March 13, 2009

2300 Lake Elmo
Drive, Billings, MT
59105



**Montana Fish,
Wildlife & Parks**

March 13, 2009

Montana Department of Natural Resources and Conservation (DNRC)
Northeastern Land Office
P.O. Box 1021
Lewistown, MT 59457
MartinsdaleWindFarm@mt.gov

Attention: Mr. Clive Rooney

RE: Martinsdale Windfarm Project Draft EIS

Montana Fish, Wildlife and Parks (MFWP) received a copy of the draft Environmental Impact Statement (EIS) for the proposed Martinsdale Windfarm LLC (February 2009). MFWP appreciates the opportunity to comment, and in general, found the EIS to be thorough and well organized. We do have a few comments regarding the proposed wind project (and proposed alternative) that we submit here for your consideration.

First, there is some discrepancy in the identified project area boundary. Maps provided throughout the document show at least three different project boundaries and table 2.2-2 indicates yet a fourth project boundary. The only project boundary that includes 3080 acres of state land is the boundary provided in table 2.2-2. The map as found in Figure 1.1-1 includes state lands in T9N R11E sections 14 and 26 and in T8N, R13E sections 8 and 16 while other maps such as 2.2-1 do not include those sections. Table 2.2-2 includes T9N R12 E section 16, which is not shown as being within the project boundary on either of the previous maps discussed above, but the SW $\frac{1}{4}$ is shown within the project boundary in Figure 3.1-2. In addition, many of sections in Table 2.2-2 are shown to be in Meagher County when in fact they are in Wheatland County. We request that the project boundary be clarified in the final EIS, and that loss of recreational opportunities be addressed in the event that state lands currently available to the public will be closed to public use (as in Figure 1.1-1, see below).

MFWP disagrees that a rate of 13.4 bats/turbine/year killed would have little impact on migratory populations. A rate of 13.4 bats/turbine/year is high in comparison to other projects in the Western U.S, although comparable to Judith Gap Energy Center (draft report January 2008) and southern Alberta (e.g. 0->30 bats/turbine/year, Erin Baerwald, University of Calgary, personal communication, March 2009). Given the pulse of bat activity identified during fall migration in the Wildlife Assessment, the Martinsdale Windfarm should identify potential mitigation if fatality estimates suggest that this fatality rate is plausible. Mitigation measures should include increasing the cut-in speed of turbines during the migration period if fatality estimates prove to be high. Although we may not have the data to identify the size of

migrating (or resident) bat populations, the potential number of mortalities of bats (e.g. >1600 animals per year, including those identified as Species of Concern) needs to be closely monitored.

Cumulative Impacts

On page 2-27, the EIS identifies reasonably foreseeable relevant actions not part of the proposed action. Here, it appropriately includes an expansion of the Judith Gap Energy Center. However, it fails to mention the development of an additional wind project by Gaelectric (Great Falls Tribune, March 8, 2009). This project proposes to install up to 180 3.0 MW turbines between Judith Gap and Harlowton. It is understandable that this information may not have been available during the development of the draft EIS, but it should be taken into account when analyzing the cumulative impacts for birds, bats, and wildlife displacement in the vicinity of the Martinsdale project in the final EIS.

The cumulative impacts are of particular concern with respect to potential bat mortality in the area as identified above. The prospect of approximately 1500 bats per year at as many as 3 wind projects is of concern. The proposed fatality monitoring should identify potential concerns, and a minimum of 1-week intervals for post-construction monitoring is encouraged.

Similarly, the potential number of wind energy projects in the area suggests that we should continue to be alert to potential cumulative impacts of multiple industrial wind parks on grassland birds. The studies that have been conducted on grassland bird displacement have not been conducted in areas with greater than 40 turbines, and extrapolating that data to this area in Montana with potential for greater than 400 turbines is probably not appropriate (J. Shaffer, USGS, Jamestown, ND, personal communication, March 2009).

Public Access

On page 1-10 the document states that the state land within the project area is not legally accessible to the public. This is true, unless map 1.1-1 is the actual project boundary. If map 1.1-1 were the project boundary, then all of one section and a portion of another section would be legally accessible from Findon Lane. Since state lands subject to a commercial lease are closed to recreational use as part of a group of categorical closures (page 1-10) these sections would be closed to hunting and public recreation. MFWP would be opposed to the closure of these sections to the public. If these sections were included in the project boundary, then MFWP would suggest that recreational use of the area should not be excluded from analysis in the EIS. Given the number of wind projects in the vicinity, the cumulative impacts on public access to hunting and outdoor recreation may be impacted.

Recommended Mitigation

Both the EIS and the "Martinsdale Wind Power Project Assessment" identified the east bench as very important to raptors and ponderosa pine habitat as important to wildlife (big game and raptors in particular) in the area. It was recommended that these areas be avoided, yet it would appear that one of the highest concentrations of turbines is proposed for the northeast corner of the project area in one of two areas on the entire project with ponderosa

pine. We would recommend that this area be avoided if possible and if it is not avoided that windmills be set as far back from the ponderosa pine habitat as possible.

If indeed T9N R12 E section 16 were included within the project area, MFWP would recommend that no development be done in the east ½ of the section. It would appear that the only development that might take place would be a road access in the SW ¼ (figure 3.1-2). If that were true then we would recommend that rest of the state school section should be removed from within the project boundary.

Maps appear to identify turbines placed adjacent to Daisy Dean Creek. We recommend that turbines be placed a minimum of 300 ft from riparian habitats (Ellis 2008).

Ellis, J.H. 2008. Scientific Recommendations on the Size of Stream Vegetated Buffers Needed to Protect Wildlife and Wildlife Habitat, Part Three, The Need for Stream Vegetated Buffers: What Does the Science Say? Report to Montana Department of Environmental Quality, EPA/DEQ Wetland Development Grant. Montana Audubon, Helena, MT. 24 pp.

MFWP recommends reseeding disturbed areas to regionally native species to reduce the overall impacts of disturbed areas.

Turbines should be placed at a minimum of ¼ mile (but preferably ½ mile) from known raptor nest (in particular golden eagles and ferruginous hawks).

Ferruginous hawks can be extremely sensitive to disturbance, and construction activities in the vicinity of nesting ferruginous hawks should be avoided during the nesting season (April – July).

The Wildlife Assessment identifies a number of Richardson's ground squirrel colonies in the project area. Care should be taken to avoid placing turbines amidst ground squirrel colonies to reduce the attractiveness of the area to raptors. A map of the ground squirrel colonies would be a valuable addition to the EIS.

The mitigation measures identified in the Wildlife Assessment should be employed, including the application of Avian Power Line Interaction Committee (APLIC, 1994) guidelines.

The proposed monitoring plan reflects many of the newest understandings in the attempt to determine fatality estimates at wind energy facilities, and we appreciate that effort to propose current survey methodology. MFWP encourages carcass searches be conducted no less frequently than once per week. As part of the scavenger removal trials, we encourage the use of bat carcasses as often as possible. It has been suggested that small birds (e.g. house sparrows) do not accurately represent a bat carcass to scavengers. In the event that scavenger removal trials suggest that scavenger removal rates are high, MFWP would recommend that carcass search intervals be reduced.

Future Research

On page 2-16, future studies, MFWP would like to see an effort to monitor pronghorn antelope responses to the wind farm. Currently the Department has data (six total surveys) on pronghorn use of this area going back to 1984. If indeed there was a shift in use on the property we should be able to detect it. Monitoring would involve counting all antelope within the impacted area in July. We would recommend that monitoring should start in July of 2009 and be completed annually for at least 5 years. Again, given the potential cumulative impacts of multiple wind projects in the area, displacement of pronghorn is a concern that should be monitored.

MFWP strongly recommends pursuing a grassland bird displacement study, and conducting pre-construction grassland bird surveys at least on School State Trust lands included in the project area. There is no basis to extrapolate the behavior of chestnut-colored longspurs and western meadowlarks post-construction of turbines to McCown's longspur (J. Shaffer, USGS, Jamestown, ND, personal communication, March 2009). Although McCown's longspur did not appear to be identified in surveys the Wildlife Assessment, they are identified as a common species on the site (Table S-2). McCown's longspurs are a Species of Concern with behavior and habitat that is different from the other species identified. McCown's longspurs have aerial displays in which males flutter upward up to 10 m, and prefer sparse grassland. The discrepancies in pre- and post- surveys at the Judith Gap Energy Project (draft report January 2008) have not resolved the potential for displacement of grassland birds in Montana.

Monitoring efforts should consider addressing the impacts of the wind project on mountain plover, burrowing owl and long-billed curlew. All three species are Species of Concern and likely (or documented) in the area.

Recommended Clarifications

In addition to the project boundary, we did find a handful of inaccuracies in the document. Here we've provided corrected information. On page 3-17 the discussion of location of antelope in the winter should have stated they were located in the northwest portion, not northeast portion of the area. During the winter survey 3 groups, 53 antelope were seen in T9N R11E sections 26 representing 23% of all antelope observed on this flight. If this section is included within the project area winter habitat for pronghorn should be identified and avoided.

There are at least two references, one in the EIS portion and one in the Wildlife Assessment, that state sharp-tailed grouse are a Species of Concern (S1). This is incorrect. Plains sharp-tailed grouse, (subspecies *jamesi*) as would be found in this area are not a Species of Concern, but Columbian sharp-tailed grouse (subspecies *columbianus*) found in NW Montana are an S1 Species of Concern.

MFWP could not find the "Appendix Fig. 1" referenced on page 12 of the "Martinsdale Wind Power Project Assessment".

On page 50 of the Wildlife Assessment, the number of bald eagles observed between February 15 and November 15 is identified as "XX".

Questions

Are turbines proposed on School State Trust Lands in Phase I of this project?

Would DNRC consider submitting the wildlife data collected to the Natural Heritage Program point observation database? Some of the findings in the Wildlife Assessment (bat data in particular) would be a valuable addition to the database for all state agencies and organizations that call on NHP for data requests.

Thank you again for the opportunity to provide comments. MFWP realizes that most of the project occurs on private land, and we appreciate the time and effort that was taken with the EIS to include School State Trust lands, and therefore providing our Department with an opportunity for input. We look forward to continued cooperation through participation in the Technical Advisory Committee. If you have any questions or clarifications on our comments, please contact Allison Puchniak Begley at (406) 247-2966 or apuchniak@mt.gov.



Sincerely,

Ray Mulé
MFWP Region 5 Wildlife Program Manager
Montana Fish, Wildlife and Parks

Cc: Gary Hammond, Region 5 Regional Supervisor
Jay Newell, MFWP Wildlife Biologist, Roundup
Allison Puchniak Begley, MFWP Wildlife Biologist, Billings

From: Vern Larson [REDACTED]
Sent: Friday, March 13, 2009 4:03 PM
To: DNR Martinsdale
Subject: EIS Comment

I wish to submit the following comments concerning the proposed wind farm near Martinsdale, MT. I realize today, March 13, 2009 is the last day for submission.

I'd like to go on record as opposing the wind farm as proposed, generally, in any of the options or alternatives presented. My reasons, first and foremost, have to do with a failure for the project to mitigate ELECTRIC RATES FOR MONTANA CONSUMERS. I understand the provision to collect tax revenues based on the lease of state-owned or school trust lands, however, those amounts are rather insignificant, particularly given the scope and projected lifetime of the project or compared to the revenues and profits generated. I believe it's yet another chapter in Montana's long and sorry history as an energy or resource producer - the main beneficiaries are PRIVATE parties like out-of-state investors or utilities. Montanans will once again be left 'holding the bag' .. dealing with long term impacts and permanent alterations to the land we inhabit.

My second criticism concerns what I deem to be an inadequate and somewhat cursory treatment of 'visual resources.' The projected views contained in the EIS are taken from the area highways, with a singular model view having a perspective from Martinsdale Reservoir. The OBVIOUS OMISSION is that none of the models project any sort of view from the town of Martinsdale itself! Yes, the population there may only number a couple hundred permanent residents .. but it is these people who will be living with the results - a permanent blight upon the PRISTINE VIEW OF THE MOUNTAINS as it now exists. Obviously, people traveling the highways or recreating at the reservoir are simply 'passing through.' PERMANENT local residents will be dealing with a forever-altered view .. FOREVER. Ignoring the plethora of other suitable sites, virtually along the entire Musselshell valley, seems really short-sighted. This is not a "NIMBY" response .. only an observation that the view north to the Little Belt Mountains is exquisite, pristine, and unique; it SHOULD BE PRESERVED FOR FUTURE GENERATIONS.

I have other concerns about some of the EIS data, conclusions and recommendations. The estimates of bird fatalities (4 per year?) at the Judith Gap windfarm seem extraordinarily low. Also, a suggestion that impact from roads can be lessened by 'posting speed limits' is naive, and perhaps something akin to wishful thinking. I also believe that ambiguous statements concerning transmission lines built "either" above or underground are misleading. Certainly, these options have already been evaluated, with the preferred (cheapest, easiest) alternatives likely to be adopted, regardless of long-term impacts. Obviously, once the dozens of wind turbines have been erected, no one is likely to notice or complain about the aesthetics of the large transmission towers and lines .. IT WILL BE TOO LATE!

Thanks you for letting me express an opinion, and thank you in advance, and on behalf of my grandchildren, for this misguided and misplaced project which will compromise the scenery for all time!! Seriously, the State of Montana could do SO much better. This is a complete 'rush' job and other alternatives were not seriously considered.