

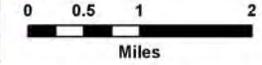
Odell Proposed Raptor Large Bird Points

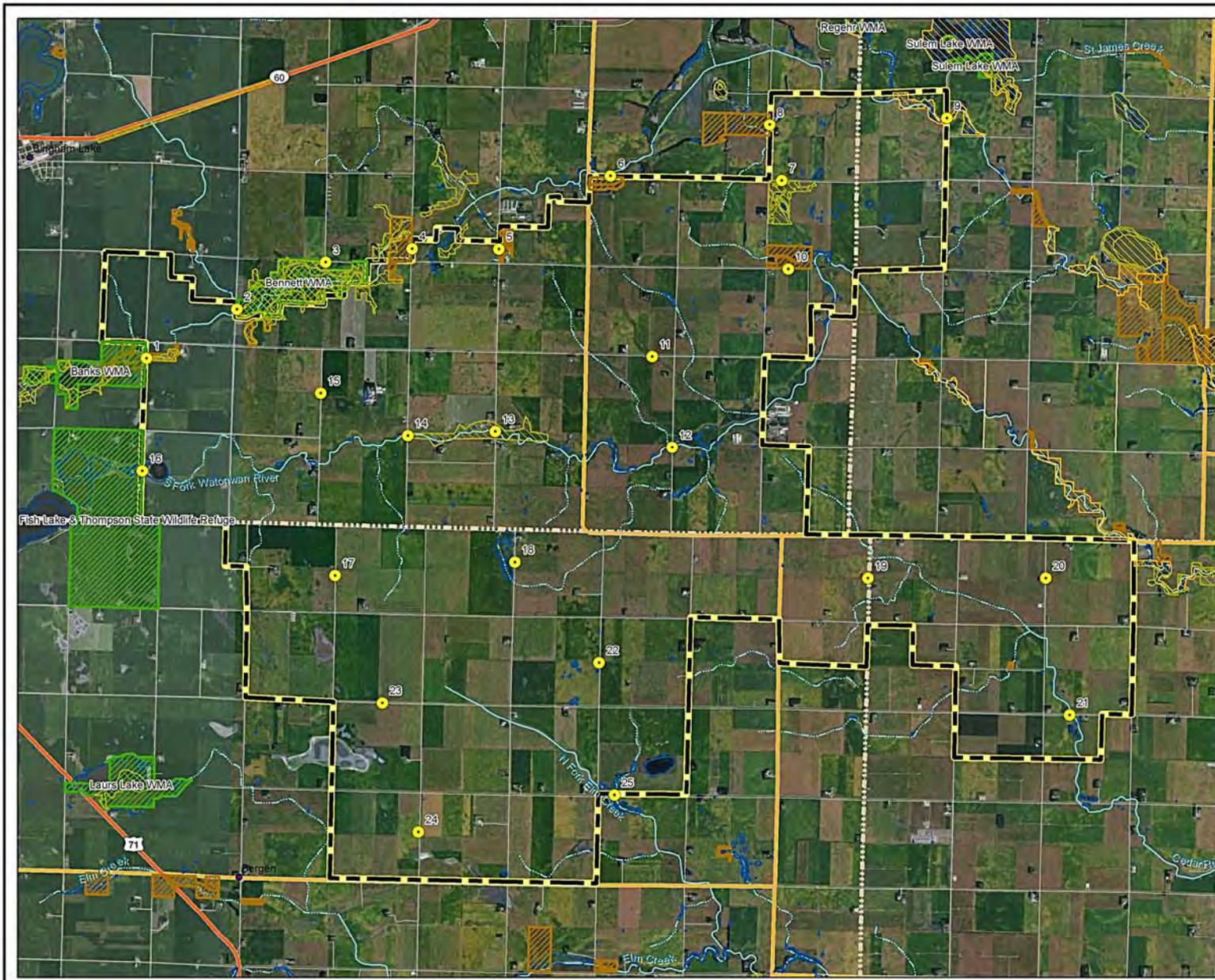
- Site Boundary
- Proposed Raptor Large Bird Points
- 800m point buffer
- 1600m point buffer
- Protected Natural Areas
- RIM Easement
- Cty. Biological Survey - Native Plant Community
- Cty. Biological Survey - Sites of Biological Sig.
- Railroad Prairie
- County Land

Data Sources:
 ESRI Street Map
 Bing Aerial Base Map
 AES Job Number: 12-0974
 Date: 3/26/2013
 File Name: Odell_SpringRLB_draftpts_2013326.mxd



21938 Mudgett Road
 Prior Lake, MN 55372
 952-447-1919
 www.appliedeco.com





Odell Proposed Passerine Points

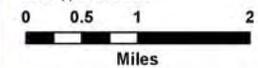
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AES Job Number: 12-0974
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21938 Mudgett Road
Prior Lake, MN 55372
952-447-1919
www.appliedeco.com



From: [Mixon, Kevin \(DNR\)](#)
To: [Heather L. Wayne](#)
Subject: RE: Documents from Odell (Geronimo & AES) meeting with DNR: Email 2 of 2
Date: Friday, March 29, 2013 9:11:09 AM

Heather:

Thanks for the meeting and the DNR has no further comments on your planned methods. If you have any questions let me know.

Good Luck!

Kevin

-----Original Message-----

From: Heather L. Wayne [<mailto:HWayne@geronimowind.com>]

Sent: Thursday, March 28, 2013 1:17 PM

To: Mixon, Kevin (DNR)

Cc: Patrick Smith; heather.kieweg@appliedeco.com

Subject: Documents from Odell (Geronimo & AES) meeting with DNR: Email 2 of 2

Hi Kevin-

Here are the rest of the documents.

I will be writing up the meeting minutes and will provide those to you for your comment.

Thank you again,

Heather

Swenson, Kristen

From: Heather L. Wayne
Sent: Tuesday, May 07, 2013 11:14 AM
To: kevin.mixon@state.mn.us
Cc: Patrick Smith; Jordan B. Burmeister; 'Margaret_Rheude@fws.gov'
Subject: Odell Wind Farm-Bat Monitoring

Hi Kevin-

I'm writing to update you on Geronimo's bat monitoring activities at our Odell Project.

We talked with you in late March about having two bat monitoring stations, with high and low mics, installed starting this month (May) at our Odell Project.

Upon entering the fields for the bat monitoring equipment install, our field technician realized that the most recent ice/wind storm had torn the bat bracket from the meteorological tower.

We were able to install one monitoring station, both high and low, successfully, but we were not able to install the second one on our scheduled date. We are working on getting the equipment for the second station installed as soon as possible, and expect to have it installed sometime in June at the latest.

This circumstance was unforeseen and has caused us to temporarily depart from our planned methodology. We wanted to confirm with you that the DNR understands what happened, and that we are working on getting the second station up as soon as possible.

Heather Wayne
Associate
Geronimo Energy
Direct: 952.641.4043
www.geronimoenergy.com

Swenson, Kristen

From: Heather L. Wayne
Sent: Tuesday, May 14, 2013 2:39 PM
To: 'Schrenzel, Jamie (DNR)'; Mixon, Kevin (DNR)
Cc: Patrick Smith; Jordan B. Burmeister; Margaret_Rheude@fws.gov; Davis, Richard (COMM)
Subject: RE: Odell Wind Farm-Bat Monitoring

Hi Jamie and Kevin-

Geronimo Energy is actively working on the site permit application for our Odell wind energy project (a 200 MW project in southern Minnesota). We have not yet submitted a site permit application. We have been coordinating directly with Mr. Mixon regarding the Odell project. We talked with him in March 2013 to review the project and our planned biological survey methods, including bat and avian surveys. Since the bat pulley equipment was torn off the tower in a storm, I wrote the email below to inform the DNR that our data collection will temporarily vary from what we had initially planned.

Jamie, I'd be happy to talk with you and/or send you more information to get you up to speed.

Heather Wayne
Associate
Geronimo Energy
Direct: 952.641.4043
www.geronimoenergy.com

From: Schrenzel, Jamie (DNR) [<mailto:jamie.schrenzel@state.mn.us>]
Sent: Tuesday, May 14, 2013 2:02 PM
To: Mixon, Kevin (DNR); Heather L. Wayne
Cc: Patrick Smith; Jordan B. Burmeister; Margaret_Rheude@fws.gov; Davis, Richard (COMM)
Subject: RE: Odell Wind Farm-Bat Monitoring

To help with the permit condition question, my records show only DNR early coordination back in 2009 for this project and a Natural Heritage Information System review. It looks like there is an updated NHIS review also underway. I have attached DNR comment letters for reference. For me, a general status update would be helpful to put the discussion below in context.

Thanks,
Jamie

From: Mixon, Kevin (DNR)
Sent: Thursday, May 09, 2013 4:49 PM
To: Heather L. Wayne
Cc: Patrick Smith; Jordan B. Burmeister; Margaret_Rheude@fws.gov; Schrenzel, Jamie (DNR); Davis, Richard (COMM)
Subject: RE: Odell Wind Farm-Bat Monitoring

Heather:

OK these things happen and the key time to get bat data is summer/early fall. My memory is vague...too many projects...on whether the PUC permit required the bat acoustics? If it did then you should be in contact with Rich Davis (Dept. of Commerce, EFP).

Thanks,

Kevin

From: Heather L. Wayne [<mailto:HWayne@geronimowind.com>]
Sent: Tuesday, May 07, 2013 11:14 AM
To: Mixon, Kevin (DNR)
Cc: Patrick Smith; Jordan B. Burmeister; Margaret_Rheude@fws.gov
Subject: Odell Wind Farm-Bat Monitoring

Hi Kevin-

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Heather Wayne
Associate
Geronimo Energy
Direct: 952.641.4043
www.geronimoenergy.com



May 24, 2013

Ms. Jamie Schrenzel
 Minnesota Department of Natural Resources
 500 Lafayette Road
 Saint Paul, MN 55155-4025

RE: Odell Wind Farm and Transmission Line in Southwest Minnesota

Dear Ms. Jamie Schrenzel:

Odell Wind Farm, LLC (Odell Wind Farm), a wholly owned subsidiary of Geronimo Wind Energy, LLC, is gathering information and requesting agency comments for a proposed wind energy project and transmission line in Cottonwood, Jackson, Martin, and Watonwan Counties, Minnesota. The proposed project will be up to 200 MW.

Odell Wind Farm intends to submit a Site Permit Application for a Large Wind Energy Conversion System and a Route Permit Application for a High Voltage Transmission Line to the Minnesota Public Utilities Commission (PUC). The Odell Wind Farm will include wind turbines and associated facilities, including gravel access roads, an underground collector system, two substations, meteorological monitoring stations, an operations and maintenance facility, and a 115 kV transmission line.

Turbine locations, access roads and electrical connections have not been finalized at this time. Table 1 provides the sections of land Odell Wind Farm is evaluating for siting the wind energy project.

Table 1 –Sections within the Odell Wind Farm Project Boundary

County Name	Township Name	Township	Range	Sections
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Cottonwood	Mountain Lake	105N	34W	12, 13, 14, 15, 16, 17, 19, 20, 21, 22, 23, 24, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36
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Jackson	Kimball	104N	34W	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 17, 18, 19, 20, 21
Martin	Cedar	104N	33W	4, 5, 6, 7, 8, 9, 16, 17
Watonwan	Odin	105N	33W	7, 18

Similarly, the transmission line route is not yet finalized. Table 2 identifies the land in the transmission route evaluation area, which is the area currently being considered for the transmission route and possible alternative routes.

Table 2 –Sections Included in the Transmission Route Evaluation Area*

County Name	Township Name	Township	Range	Sections
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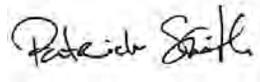
*The Sections in Table 2 are also included in Table 1 because the prospective transmission routes are located within the current Odell Wind Farm boundary.

To facilitate your review, we have enclosed a map of Odell Wind Farm’s location and project boundary. The transmission route evaluation area is also indicated on the map.

To date we have been actively coordinating with Kevin Mixon of your office on surveys and site evaluation. We welcome any additional comments the Minnesota Department of Natural Resources may have at this time or throughout the permit application process. Any comments provided will be incorporated into the PUC review process for the Odell Wind Farm.

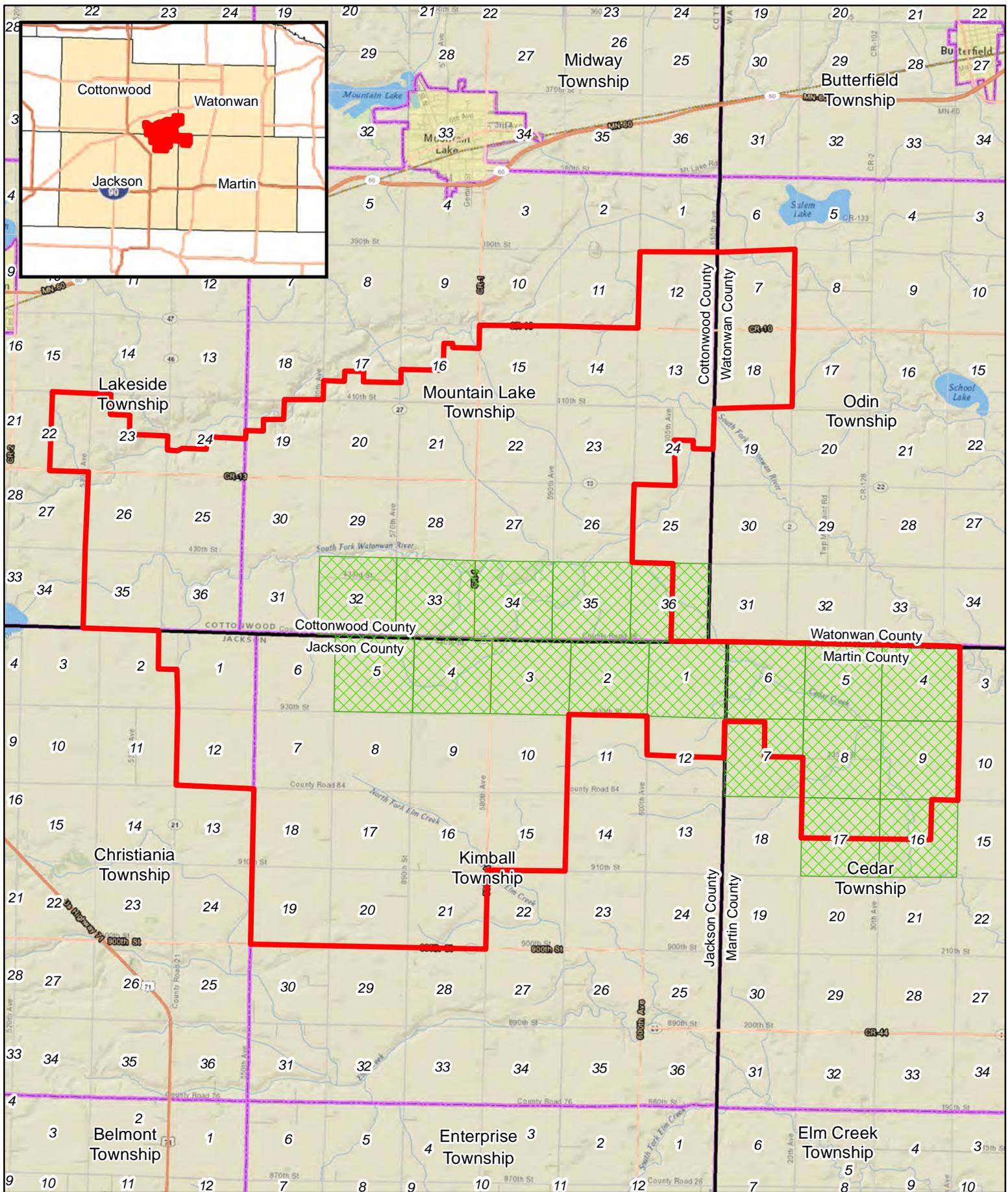
If you require further information or have questions regarding this matter, please contact me at 952-988-9000 or at Patrick@geronimoenergy.com

Sincerely,

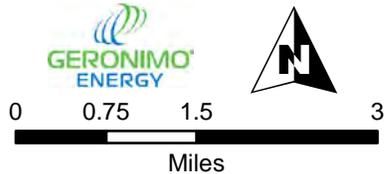


Patrick Smith
Director of Environmental Planning

Enclosures:
Odell Wind Farm Project Location Map



- Odell Footprint
- Route Evaluation Area
- County
- County Subdivisions



Project Location Map



May 24, 2013

Mr. Kevin Mixon
 Minnesota Department of Natural Resources
 261 HWY 15 S
 New Ulm, MN 56073

RE: Odell Wind Farm and Transmission Line in Southwest Minnesota

Dear Mr. Kevin Mixon:

Odell Wind Farm, LLC (Odell Wind Farm), a wholly owned subsidiary of Geronimo Wind Energy, LLC, is gathering information and requesting agency comments for a proposed wind energy project and transmission line in Cottonwood, Jackson, Martin, and Watonwan Counties, Minnesota. The proposed project will be up to 200 MW.

Odell Wind Farm intends to submit a Site Permit Application for a Large Wind Energy Conversion System and a Route Permit Application for a High Voltage Transmission Line to the Minnesota Public Utilities Commission (PUC). The Odell Wind Farm will include wind turbines and associated facilities, including gravel access roads, an underground collector system, two substations, meteorological monitoring stations, an operations and maintenance facility, and a 115 kV transmission line.

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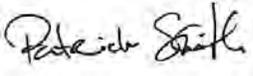
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To facilitate your review, we have enclosed a map of Odell Wind Farm’s location and project boundary. The transmission route evaluation area is also indicated on the map.

We welcome any comments the Minnesota Department of Natural Resources may have at this time or throughout the permit application process. Any comments provided will be incorporated into the PUC review process for the Odell Wind Farm.

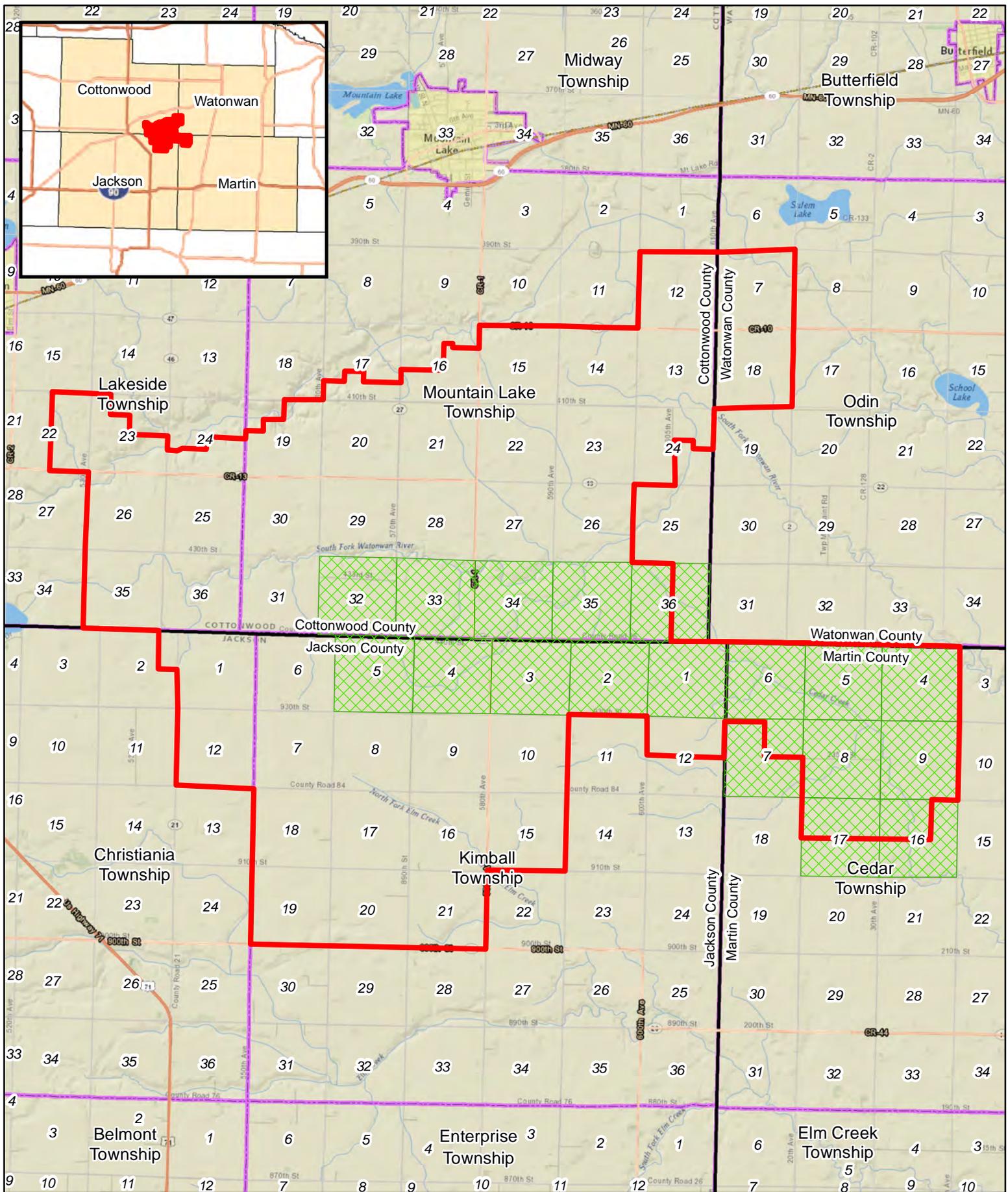
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Sincerely,

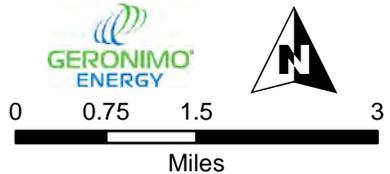


Patrick Smith
 Director of Environmental Planning

Enclosures:
 Odell Wind Farm Project Location Map



- Odell Footprint
- Route Evaluation Area
- County
- County Subdivisions



Project Location Map

Minnesota Department of Natural Resources

Division of Ecological and Water Resources
Southern Region • 261 Highway 15 South • New Ulm, MN • 56073
Phone: 507-359-6073 Email: kevin.mixon@state.mn.us



June 24, 2013

Mr. Patrick Smith
Odell Wind Farm, LLC
7650 Edinborough Way, Suite 725
Edina, MN 55435

In re: Odell Wind Farm and Transmission Line
Preliminary Review
Cottonwood, Jackson, Martin, and Watonwan Counties, MN

Dear Patrick:

The Minnesota Department of Natural Resources (DNR) appreciates the opportunity to review and comment on the Odell Wind Farm. The DNR participated in a conference call on March 28, 2013 concerning the project and this letter is intended to clarify and supplement the prior discussion.

The Bennett and Banks Wildlife Management Areas (WMA) are adjacent to the current project area. The DNR recommends that no direct impacts occur to these public recreational lands from turbine construction, transmission lines, substations, or road networks associated with the project. It is the DNR's responsibility to seek avoidance, minimization, and mitigation for potential impacts to Minnesota Recreation System Units (Minnesota Statutes, chapter 86A) from turbine construction, transmission lines, substations, or road networks associated with a wind project. The wind resource of State lands is protected from encroachment through the wind access buffer of 5 rotor diameters (prevailing wind direction) and 3 rotor diameters (non-prevailing wind direction) that has been established by the PUC to protect non-participating landowners wind rights.

The DNR is aware that various wildlife surveys are currently being conducted within the project area. The bat acoustic data is of special interest as we have had a few projects with higher bat passes per detector night than would be expected in agriculture dominated landscapes. On first glance, the overall project area would pose a low risk to birds and bats. However, the DNR will need to review the wildlife survey data in order to provide an estimated project risk level. The project risk level is related to the post-construction fatality monitoring methods that would be recommended by the DNR.

The northwest portion of the project area near Bennett and Banks WMA is a higher risk area to wildlife due to the exceptionally high waterfowl use in that area. On April 3, 2013 I observed thousands of ducks, geese, and swans using the wetlands within and adjacent to the WMA. The turbine layout should be designed to avoid placing turbines in the north/northwest portion of the project area. Placing turbines in this area may increase the estimated project risk level to avian species.

Previously the DNR provided a link to the DNR Guidance for Commercial Wind Energy Projects (http://www.dnr.state.mn.us/eco/ereview/additional_resources.html). We hope that you have had time to review the document as it contains information on resources that should be identified during early stages of project development. Please contact me directly if you have any questions about the content in this letter or if you would like to further discuss the ongoing wildlife surveys.

Sincerely,



Kevin Mixon
Regional Environmental Assessment Ecologist

Cc: Jamie Schrenzel, DNR
Randy Markl, DNR
Lisa Joyal, DNR
Bernice Cramblit, DNR
R4 REAT
Deb Pile, DOC
Rich Davis, DOC



May 24, 2013

Ms. Deborah Pile, Director
 State of Minnesota, Department of Commerce
 Energy Facility Permitting
 85 7th Place East, Suite 500
 Saint Paul, MN 55101-2198

RE: Odell Wind Farm and Transmission Line in Southwest Minnesota

Dear Ms. Deborah Pile:

Odell Wind Farm, LLC (Odell Wind Farm), a wholly owned subsidiary of Geronimo Wind Energy, LLC, is gathering information and requesting agency comments for a proposed wind energy project and transmission line in Cottonwood, Jackson, Martin, and Watonwan Counties, Minnesota. The proposed project will be up to 200 MW.

Odell Wind Farm intends to submit a Site Permit Application for a Large Wind Energy Conversion System and a Route Permit Application for a High Voltage Transmission Line to the Minnesota Public Utilities Commission (PUC). The Odell Wind Farm will include wind turbines and associated facilities, including gravel access roads, an underground collector system, two substations, meteorological monitoring stations, an operations and maintenance facility, and a 115 kV transmission line.

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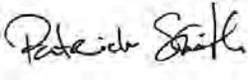
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To facilitate your review, we have enclosed a map of Odell Wind Farm’s location and project boundary. The transmission route evaluation area is also indicated on the map.

We welcome any comments the Department of Commerce, Energy Facility Permitting may have at this time or throughout the permit application process. Any comments provided will be incorporated into the PUC review process for the Odell Wind Farm.

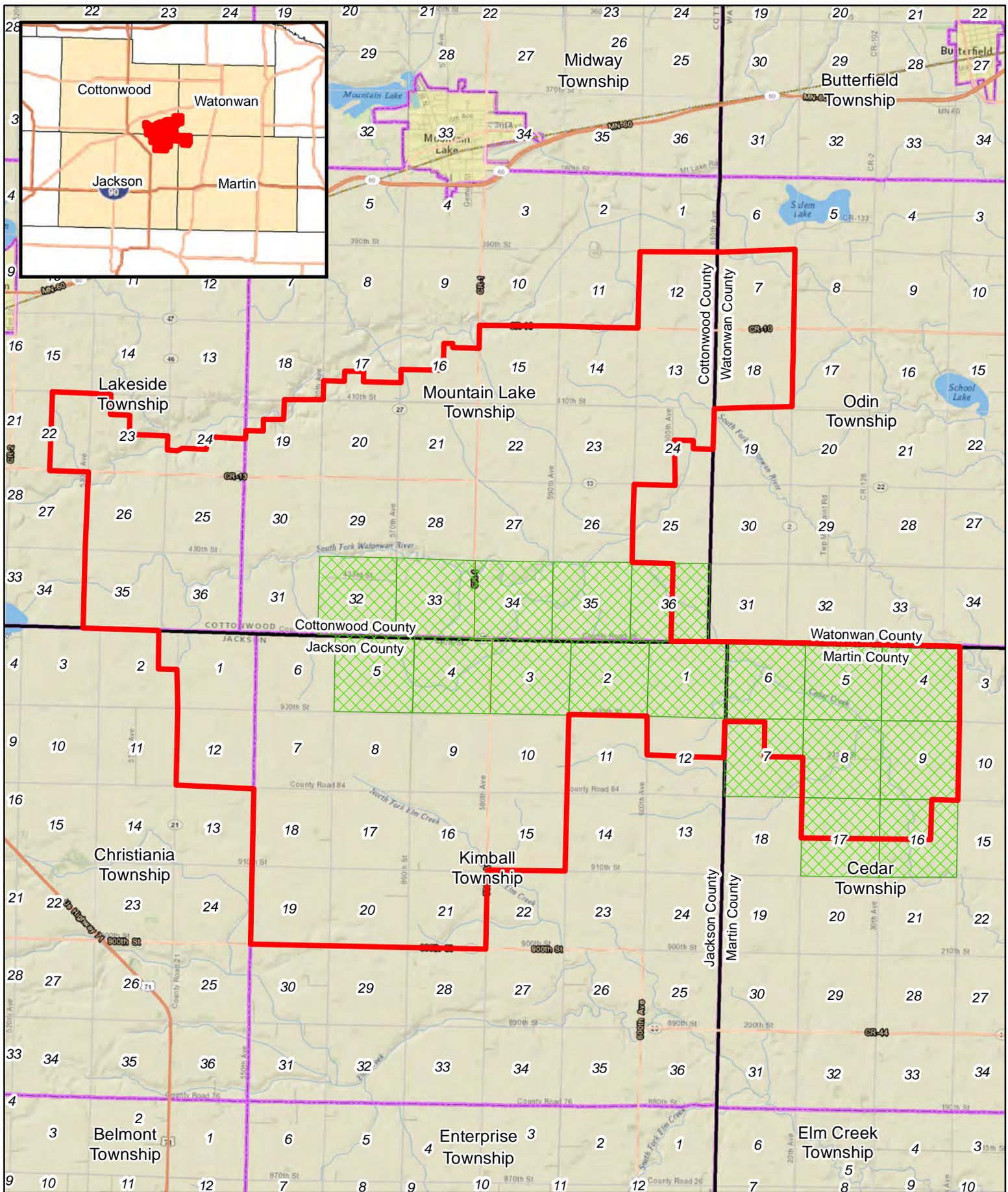
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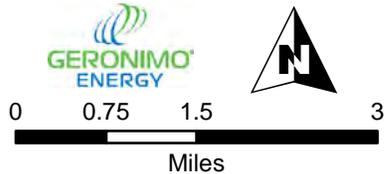


Patrick Smith
Director of Environmental Planning

Enclosures:
Odell Wind Farm Project Location Map



-  Odell Footprint
-  Route Evaluation Area
-  County
-  County Subdivisions



Project Location Map



May 24, 2013

Marilyn Remer, P.E.
 Minnesota Dept. of Transportation
 395 John Ireland Blvd, MS 678
 Saint Paul, MN 55155

RE: Odell Wind Farm and Transmission Line in Southwest Minnesota

Dear Marilyn Remer, P.E.:

Odell Wind Farm, LLC (Odell Wind Farm), a wholly owned subsidiary of Geronimo Wind Energy, LLC, is gathering information and requesting agency comments for a proposed wind energy project and transmission line in Cottonwood, Jackson, Martin, and Watonwan Counties, Minnesota. The proposed project will be up to 200 MW.

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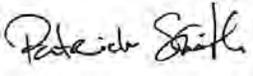
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We welcome any comments the Minnesota Dept. of Transportation may have at this time or throughout the permit application process. Any comments provided will be incorporated into the PUC review process for the Odell Wind Farm.

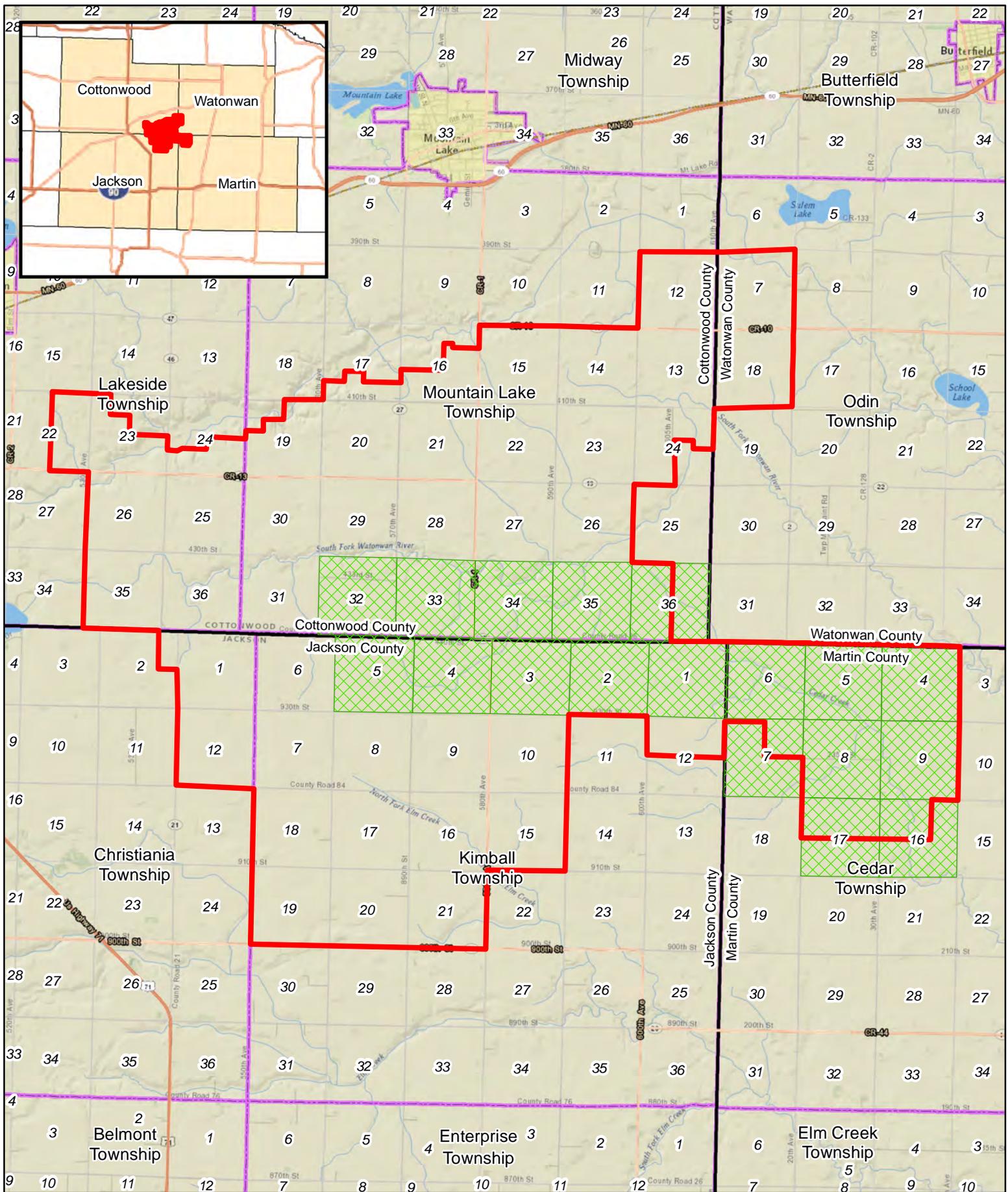
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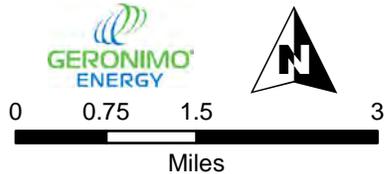


Patrick Smith
 Director of Environmental Planning

Enclosures:
 Odell Wind Farm Project Location Map



- Odell Footprint
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- County Subdivisions



Project Location Map



May 24, 2013

Bryan Stading
 IGNITE - Martin County EDA
 201 Lake Avenue
 Fairmont, MN 56301

RE: Odell Wind Farm and Transmission Line in Southwest Minnesota

Dear Bryan Stading:

Odell Wind Farm, LLC (Odell Wind Farm), a wholly owned subsidiary of Geronimo Wind Energy, LLC, is gathering information and requesting agency comments for a proposed wind energy project and transmission line in Cottonwood, Jackson, Martin, and Watonwan Counties, Minnesota. The proposed project will be up to 200 MW.

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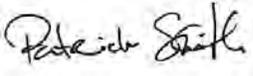
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To facilitate your review, we have enclosed a map of Odell Wind Farm’s location and project boundary. The transmission route evaluation area is also indicated on the map.

We welcome any comments the IGNITE - Martin County EDA may have at this time or throughout the permit application process. Any comments provided will be incorporated into the PUC review process for the Odell Wind Farm.

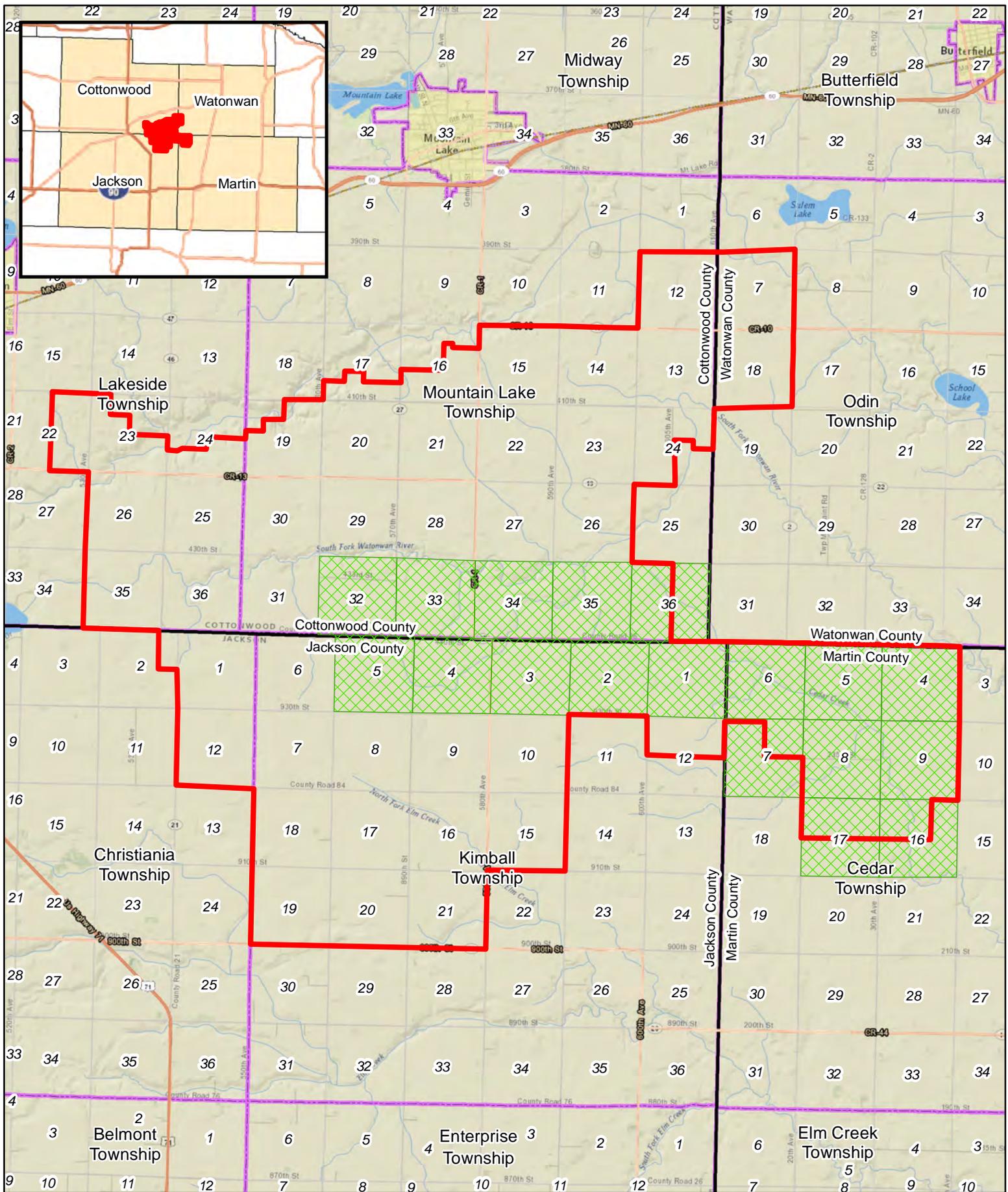
If you require further information or have questions regarding this matter, please contact me at 952-988-9000 or at Patrick@geronimoenergy.com

Sincerely,

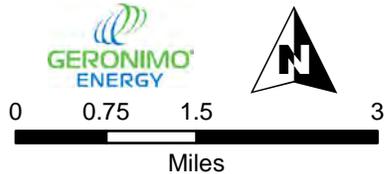


Patrick Smith
 Director of Environmental Planning

Enclosures:
 Odell Wind Farm Project Location Map



- Odell Footprint
- Route Evaluation Area
- County
- County Subdivisions



Project Location Map

From: [Jennifer Feely Bromeland](#)
To: [Patrick Smith](#)
Cc: "[Bob Cohrs](#)"; "[Kaci Nowicki](#)"; "[Eric Hanson](#)"; [Jordan B. Burmeister](#); [Heather L. Wayne](#)
Subject: RE: Wind Energy and Transmission Project
Date: Monday, July 01, 2013 4:52:29 PM

Yes, that's correct.

Sincerely,

Jennifer J. Feely-Bromeland
City Administrator
City of Jackson
80 West Ashley Street
Jackson, MN 56143-1669
P: 507-847-4410
F: 507-847-5586

From: Patrick Smith [mailto:Patrick@geronimoenergy.com]
Sent: Monday, July 01, 2013 4:47 PM
To: Jennifer Feely Bromeland
Cc: 'Bob Cohrs'; 'Kaci Nowicki'; 'Eric Hanson'; Jordan B. Burmeister; Heather L. Wayne
Subject: RE: Wind Energy and Transmission Project

Thank you, Jennifer. After reviewing the plan I was wondering if you could confirm that everything provided on it is built as shown. It appears to be the layout we analyzed when selecting our project location but I want to make sure.

Best Regards,

Patrick

Patrick Smith
Director of Env. Planning

Phone: 952-988-9000
Fax: 952-988-9001
Email: patrick@geronimoenergy.com

Geronimo Energy
7650 Edinborough Way, Suite 725
Edina MN 55435

From: Jennifer Feely Bromeland [mailto:jbromeland@cityofjacksonmn.com]
Sent: Monday, July 01, 2013 4:24 PM
To: Patrick Smith

Cc: 'Bob Cohrs'; 'Kaci Nowicki'; 'Eric Hanson'
Subject: Wind Energy and Transmission Project

Dear Mr. Smith:

Attached you will find a copy of the Jackson Municipal Airport's existing Airport Layout Plan (ALP). In an effort to ensure that the proposed Wind Energy and Transmission Project does not negatively impact the Jackson Municipal Airport, please be sure to keep us informed throughout your development process.

Thank you.

Sincerely,

Jennifer J. Feely-Bromeland
City Administrator
City of Jackson
80 West Ashley Street
Jackson, MN 56143-1669
P: 507-847-4410
F: 507-847-5586

Swenson, Kristen

From: Jennifer Feely Bromeland <jbromeland@cityofjacksonmn.com>
Sent: Monday, July 01, 2013 4:24 PM
To: Patrick Smith
Cc: 'Bob Cohrs'; 'Kaci Nowicki'; 'Eric Hanson'
Subject: Wind Energy and Transmission Project
Attachments: Existing ALP.pdf

Dear Mr. Smith:

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Thank you.

Sincerely,

Jennifer J. Feely-Bromeland
City Administrator
City of Jackson
80 West Ashley Street
Jackson, MN 56143-1669
P: 507-847-4410
F: 507-847-5586



May 24, 2013

Craig Affeldt
 Minnesota Pollution Control Agency
 520 Lafayette Road N
 Saint Paul, MN 55155

RE: Odell Wind Farm and Transmission Line in Southwest Minnesota

Dear Craig Affeldt:

Odell Wind Farm, LLC (Odell Wind Farm), a wholly owned subsidiary of Geronimo Wind Energy, LLC, is gathering information and requesting agency comments for a proposed wind energy project and transmission line in Cottonwood, Jackson, Martin, and Watonwan Counties, Minnesota. The proposed project will be up to 200 MW.

Odell Wind Farm intends to submit a Site Permit Application for a Large Wind Energy Conversion System and a Route Permit Application for a High Voltage Transmission Line to the Minnesota Public Utilities Commission (PUC). The Odell Wind Farm will include wind turbines and associated facilities, including gravel access roads, an underground collector system, two substations, meteorological monitoring stations, an operations and maintenance facility, and a 115 kV transmission line.

Turbine locations, access roads and electrical connections have not been finalized at this time. Table 1 provides the sections of land Odell Wind Farm is evaluating for siting the wind energy project.

Table 1 –Sections within the Odell Wind Farm Project Boundary

County Name	Township Name	Township	Range	Sections
Cottonwood	Lakeside	105N	35W	22, 23, 24, 25, 26, 35, 36
Cottonwood	Mountain Lake	105N	34W	12, 13, 14, 15, 16, 17, 19, 20, 21, 22, 23, 24, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36
Jackson	Christiana	104N	35W	1, 2, 12
Jackson	Kimball	104N	34W	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 17, 18, 19, 20, 21
Martin	Cedar	104N	33W	4, 5, 6, 7, 8, 9, 16, 17
Watonwan	Odin	105N	33W	7, 18

Similarly, the transmission line route is not yet finalized. Table 2 identifies the land in the transmission route evaluation area, which is the area currently being considered for the transmission route and possible alternative routes.

Table 2 –Sections Included in the Transmission Route Evaluation Area*

County Name	Township Name	Township	Range	Sections
Cottonwood	Mountain Lake	105N	34W	32, 33, 34, 35, 36
Jackson	Kimball	104N	34W	1, 2, 3, 4, 5
Martin	Cedar	104N	33W	4, 5, 6, 7, 8, 9, 16, 17

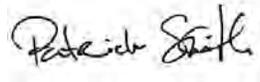
*The Sections in Table 2 are also included in Table 1 because the prospective transmission routes are located within the current Odell Wind Farm boundary.

To facilitate your review, we have enclosed a map of Odell Wind Farm’s location and project boundary. The transmission route evaluation area is also indicated on the map.

We welcome any comments the Minnesota Pollution Control Agency may have at this time or throughout the permit application process. Any comments provided will be incorporated into the PUC review process for the Odell Wind Farm.

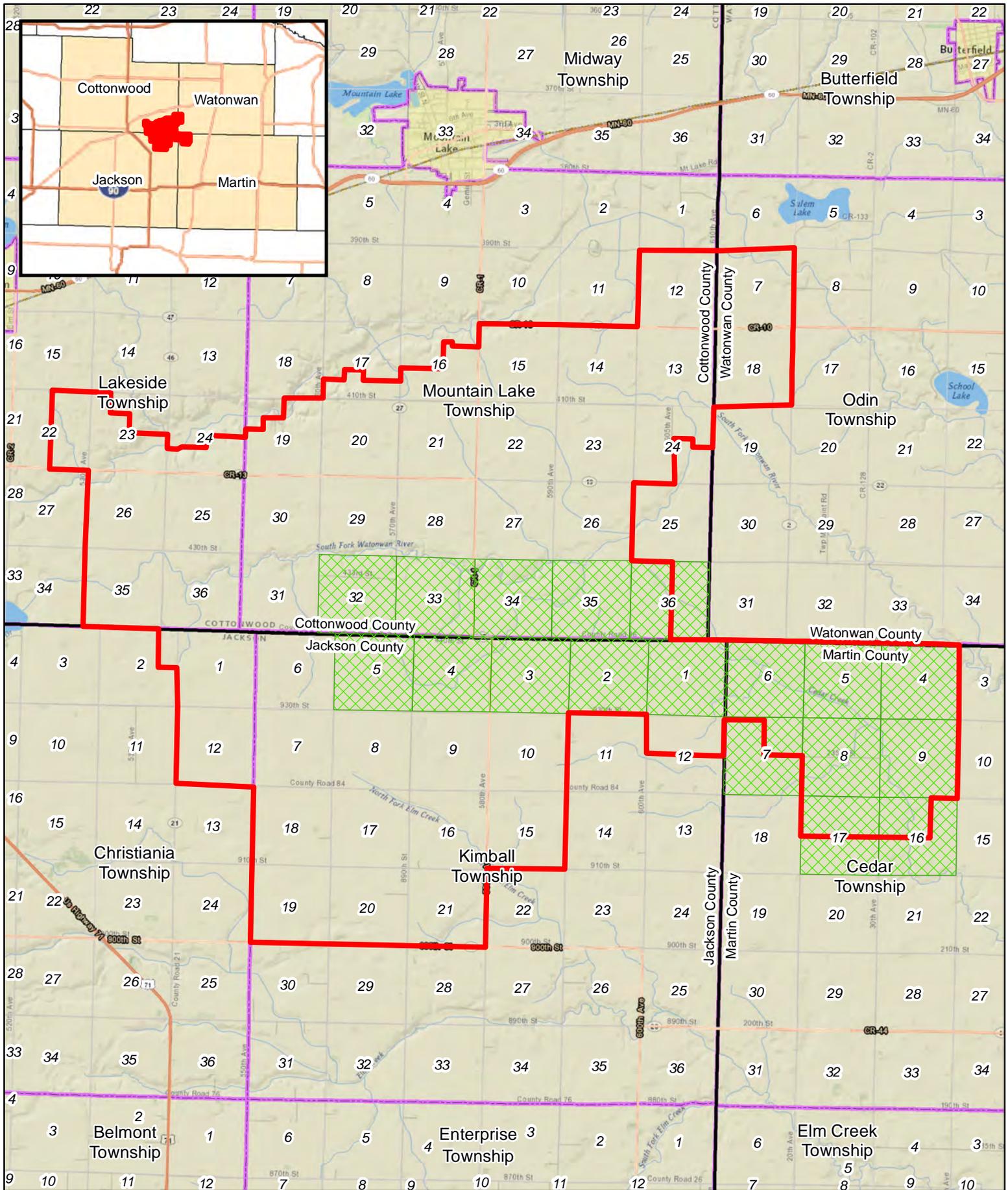
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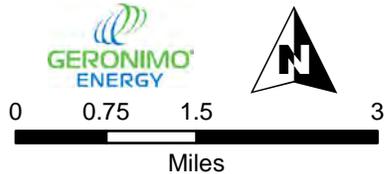


Patrick Smith
Director of Environmental Planning

Enclosures:
Odell Wind Farm Project Location Map



-  Odell Footprint
-  Route Evaluation Area
-  County
-  County Subdivisions



Project Location Map



Minnesota Pollution Control Agency

520 Lafayette Road North | St. Paul, Minnesota 55155-4194 | 651-296-6300

800-657-3864 | 651-282-5332 TTY | www.pca.state.mn.us | Equal Opportunity Employer

June 27, 2013

Mr. Patrick Smith
Director of Environmental Planning
Odell Wind Farm
7650 Edinborough Way, Suite 725
Edina, MN 55435

Re: Odell Wind Farm and Transmission Line

Dear Mr. Smith:

The Minnesota Pollution Control Agency (MPCA) Environmental Review Unit has reviewed the information in the letter and attachment dated May 24, 2013, regarding the Odell Wind Farm and Transmission Line in Cottonwood, Jackson, Martin, and Watonwan counties, Minnesota. Based on the limited information provided, and regarding matters for which the MPCA has regulatory responsibility and other interests, the MPCA staff has the following comments for your consideration.

- If the project will disturb a total of one acre or more of land, a National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) Construction Stormwater Permit (CSW Permit) is required from the MPCA. The owner and operator (usually the general contractor) are jointly responsible for obtaining and complying with the conditions of the CSW Permit. A detailed Stormwater Pollution Prevention Plan (SWPPP), containing stormwater management requirements both during and post construction, as well as erosion control and sediment control requirements during construction, must be prepared prior to submitting a CSW Permit application. CSW Permit coverage is required prior to commencing land disturbing activities (i.e., clearing, grading, filling, or excavating) relating to the project. For an overview of this permit and program, please refer to the following factsheet: <http://www.pca.state.mn.us/publications/wq-strm2-05.pdf>. Questions regarding CSW Permit requirements should be directed to Roberta Getman at 507-206-2629.
- Please be aware that if a U.S. Army Corps of Engineers (USACE) Section 404 Individual Permit is required for any project related wetland impacts, an MPCA Clean Water Act (CWA) Section 401 Water Quality Certification or waiver must also be obtained as part of the permitting process. The Section 401 Water Quality Certification ensures that the activity will comply with the state water quality standards. Any conditions required within the MPCA 401 Certificate are then incorporated into the USACE 404 Permit. You can find additional information about the MPCA's 401 Certification process at www.pca.state.mn.us/water/401.html. For further information about the 401 Water Quality Certification process, please contact Jim Brist at 651-757-2245.

Mr. Patrick Smith
Page 2
June 27, 2013

We appreciate the opportunity to review this project. Please be aware that this letter does not constitute approval by the MPCA of any or all elements of the project for the purpose of pending or future permit action(s) by the MPCA. Ultimately, it is the responsibility of the project proposer to secure any required permits and to comply with any requisite permit conditions. If you have any questions concerning our review of this project, please contact me at 651-757-2508.

Sincerely,



Karen Kromar
Planner Principal
Environmental Review Unit
Resource Management and Assistance Division

cc: Craig Affeldt, MPCA, St. Paul
Roberta Getman, MPCA, Rochester
Jim Brist, MPCA, St. Paul
Randy Hukriede, MPCA, Marshall



Minnesota Pollution Control Agency

520 Lafayette Road North | St. Paul, Minnesota 55155-4194 | 651-296-6300

800-657-3864 | 651-282-5332 TTY | www.pca.state.mn.us | Equal Opportunity Employer

August 29, 2013

Dr. Burl W. Haar
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101-2147

RE: PUC DOCKET NO. E002/M-13-603—IN THE MATTER OF THE PETITION OF NORTHERN STATES POWER COMPANY FOR APPROVAL OF THE ACQUISITION OF 600 MW OF WIND GENERATION

Dear Dr. Haar,

The Minnesota Pollution Control Agency (MPCA) appreciates the opportunity to provide comments to the Minnesota Public Utilities Commission (PUC) regarding Xcel Energy's Petition for the acquisition of 600 MW of wind generation. The MPCA's mission is to protect and improve the environment and enhance human health. The MPCA's comments below address the public interests in ensuring a safe and reliable electric power system in Minnesota that protects the environment and human health.

The Next Generation Energy Act, adopted by the Minnesota Legislature in 2007, established greenhouse gas (GHG) reduction goals for Minnesota. Specifically, the Next Generation Energy Act established goals to reduce statewide GHG emissions from all economic sectors by 15% from 2005 levels by 2015, 30% by 2025 and 80% by 2050.¹ Because most GHG emissions arise from the combustion of fossil fuels, the addition of renewable energy sources, including wind, biogas, biomass or solar energy will allow Minnesota to continue making progress in meeting the GHG reduction goals established in the Next Generation Energy Act.

The MPCA believes that Xcel Energy's proposal to acquire 600 MW of wind energy is in the public interest because the project will result in GHG emission reductions and emission reductions for conventional air pollutants. The anticipated emission reductions in conventional air pollutants from the avoidance of fossil fuel combustion will contribute to significant human health benefits that have not been included in Xcel Energy's accounting of benefits of this project. The anticipated GHG emission reductions will allow Minnesota to maintain progress towards the emission reduction goals in the Next Generation Energy Act.

Xcel Energy's proposal will continue progress in achieving Next Generation Energy Act greenhouse gas reduction goals.

The MPCA estimates that the addition of this 600 MW of wind generation will avoid the emissions of 1.9 million CO₂-equivalent tons of GHGs each year over the forecast period of 2016-2025. This project is in the public interest because these avoided GHG emissions will continue the progress in GHG emission reductions from the electric power sector, which currently accounts for approximately 32% of the state's total GHG emissions.²

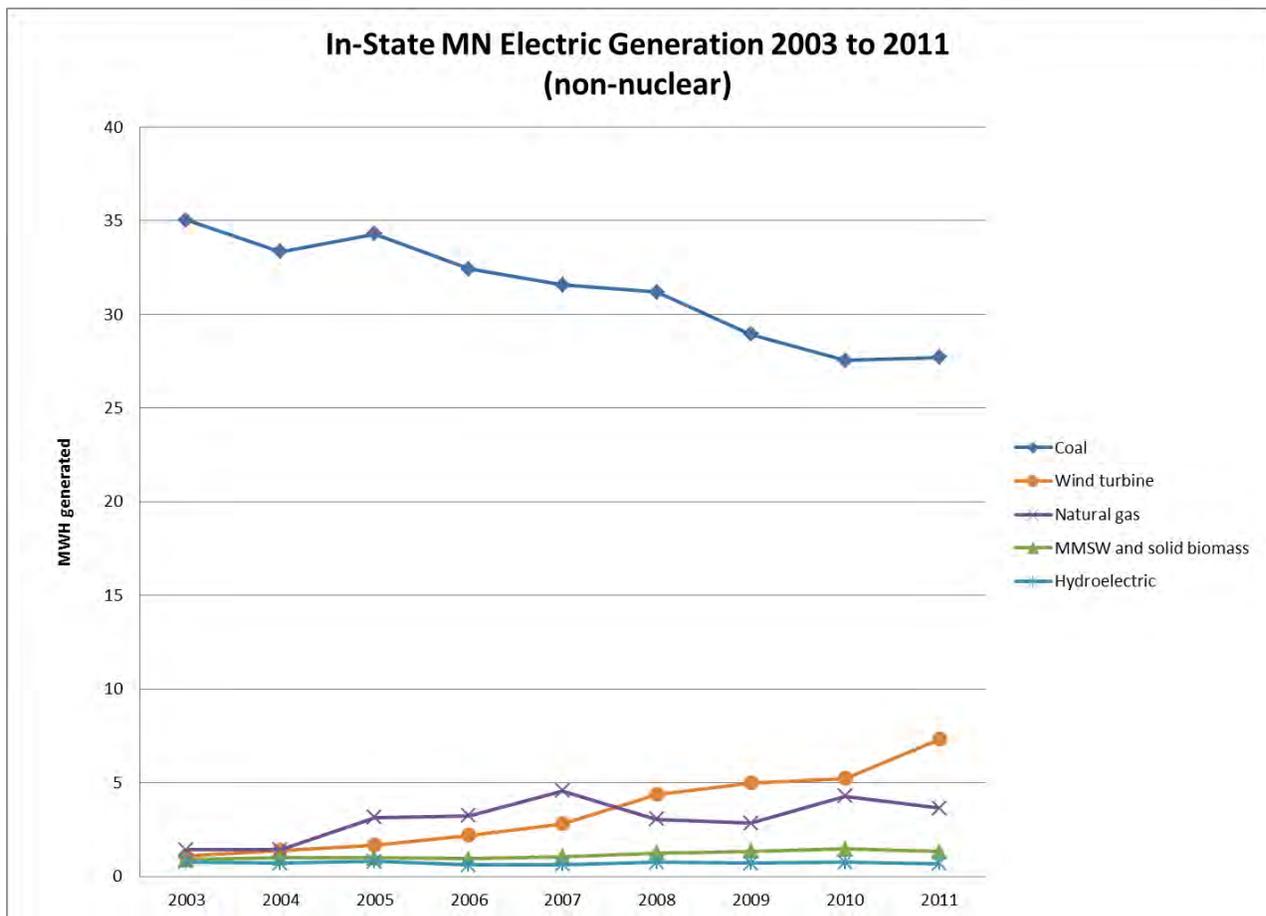
¹ Minn. Stat. §216B.02, subd. 1.

² Minnesota Pollution Control Agency, Minnesota Department of Commerce, [Greenhouse Gas Emissions Reduction Biennial Report of the Minnesota Legislature](http://www.pca.state.mn.us/index.php/view-document.html?gid=18931), January 2013 <available at <http://www.pca.state.mn.us/index.php/view-document.html?gid=18931>>.

For the electric power sector, the MPCA tracks GHG emissions on an in-state-plus-net-imports basis. This tracking shows that Minnesota's electric power sector GHG emissions have declined about 13 percent since 2005, the baseline year for the Next Generation Energy Act.

The MPCA also develops forecasts of future electric power sector GHG emissions out to 2025. The MPCA's current forecast anticipates that the electric power sector will fall short of the GHG emission reductions needed to meet the Next Generation Energy Act reduction goals by 2 million CO₂-equivalent tons in 2017 and, by 2020, the electric power sector will fall 5 million CO₂-equivalent tons short of its needed reductions.

In addition, the MPCA's analysis of historical generation also shows that wind projects are displacing fossil fuel generation. The years 2003 to 2011 saw the most intensive period of wind expansion in Minnesota. Over this period, wind generation in the state increased 6.3 million MWH. Concurrently, in-state coal-based generation declined 7.3 million MWH. This dynamic yielded a ratio of approximately 1 MWH of coal-based generation removed for each 1 MWH of wind added. The graph below shows how coal generation in Minnesota has been progressively decreasing, while wind generation continued to grow.



The MPCA's analysis is generally consistent with the results from the published peer-reviewed literature for the Midwest (MRO NERC reliability region). Siler-Evans, *et al.*, report that in the MRO region, over this period, coal-based generation was the resource at the margin about 80% of the time and, therefore, with wind additions, the most likely existing resource not to be dispatched.³

It is possible that as the costs of generation change, coal may cease to be the existing resource mostly likely to be displaced with each extra added increment of new wind. However, the historic record shows that coal generation is being displaced by wind generation.

Xcel Energy's proposal is in the public interest because the human health benefits are substantial due to the reduction of conventional air pollutants.

The MPCA estimated the potential human health benefits from this project by using the U.S. Environmental Protection Agency's (EPA) Co-Benefits Risk Assessment (COBRA) screening model. The model estimated the total, in state, economic value of the potential reductions in negative health impacts from this proposal to be between \$60 million and \$150 million, for the years 2017 and beyond. While this estimate is based on a variety of assumptions, with varying degrees of uncertainty, the MPCA believes the range provides a fair approximation of the potential health benefits of this proposal.

The health benefits of this project arise as a result of the reductions in fossil fuel power generation from this proposal. Fossil fuel power generation is a significant source of harmful air pollutants, including sulfur dioxide (SO₂), nitrogen oxides (NO_x) and particulate matter (PM). The release of these pollutants leads to higher ambient levels of fine particulate matter air pollution, which causes several human health impacts, including premature mortality, heat attacks, respiratory and cardiovascular problems, bronchitis, and asthma attacks.

To calculate the estimated health benefits of this project, the MPCA used information provided by Xcel Energy in their petition along with reasonable assumptions for model inputs. In its petition, Xcel Energy projected that the addition of 600 MW of wind power will displace approximately 2.2 million MWH of electricity production annually at fossil fuel plants. The displaced fossil fuel power generation will include a combination of natural gas, coal, and market energy purchases.

The key modeling assumptions made by the MPCA included the allotment of the total amount of displaced fossil fuel power generation between natural gas and coal, as well as the potential locations where these reductions would occur. The MPCA based its assumptions on the estimated proportions of coal and natural gas displacement from Xcel Energy's July 16, 2013 letter to the PUC and assumed that these reductions would occur at Xcel Energy's natural gas and coal plants in the Twin Cities metro area (Dakota, Hennepin, and Ramsey counties). The projected emission reductions for SO₂, NO_x and PM resulting from reduced fossil fuel power generation were based on Xcel Energy's published rates of air emissions by fuel type.⁴ Additional assumptions included the choice of health impact functions that translate changes in air quality levels to detrimental health impacts and the choice of the discount rate

³K. Siler-Evans, *et al.*, "Marginal Emission Factors for the U.S. Electricity System," *Environmental Science and Technology* 46 (2012): 4,742-4,748.

⁴Xcel Energy Inc., "Inside Your 2012 Electric Bill," 2012. Available at https://myaccount.xcelenergy.com/ebill/2012_August/00086161/MN_EnvDisclosure.jsp.

Dr. Burl W. Harl
Page 4
August 29, 2013

used. In making these assumptions, the MPCA used methods endorsed by the EPA from peer-reviewed literature to derive this range of health benefits.

For the reasons provided above, the MPCA believes that Xcel Energy's 600 MW wind proposal is in the public interest. The MPCA remains committed to working with the PUC and the Minnesota Department of Commerce to ensure that Minnesota's electricity needs are met with safe, clean and reliable sources. Minnesota is a leader in proactively addressing pollutants such as mercury, sulfur dioxide, nitrogen oxides and GHGs from electric generating utilities. The MPCA believes it is in the public interest to continue the reductions achieved in GHG emissions and conventional air pollutants from Minnesota's electric power sector. The MPCA looks forward to providing active support to the PUC to ensure the protection and improvement of Minnesota's environment and enhancement of human health.

Thank you again for the opportunity to comment on this important matter. If you have any further questions, please contact me at Frank.Kohlasch@state.mn.us or 651-757-2500.

Sincerely,

/s/ Frank L Kohlasch

Frank L. Kohlasch
Air Assessment Section
Environmental Analysis and Outcomes Division

FLK/fik

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Received _____	Due _____	RUSH	
Related ERDB# _____			
Search Radius _____ ml.	ER/All _____	Map'd _____	EOs _____
NoR/ NoC/ NoE/ Std/ Sub	Let _____	Inv _____	Log out _____

MINNESOTA NATURAL HERITAGE INFORMATION SYSTEM (NHIS) DATA REQUEST FORM

DATE OF REQUEST 9/30/08

WHO IS REQUESTING THE INFORMATION?

Name and Title Patrick Smith, GIS Specialist

Agency/Company Geronimo Wind Energy

Mailing Address 5050 Lincoln Dr #420 Edina MN 55436

(Street) (City) (State) (Zip Code)

Phone 952-988-9000 FAX 952-988-9001 e-mail patrick@geronimowind.com

WHAT INFORMATION DO YOU NEED?

Preferred Reply Method: Email US Mail

- Printouts of known occurrences of federally and state listed plants and animals; native plant communities; and aggregation sites such as bat hibernacula, colonial waterbird nesting sites, and prairie chicken booming grounds.
 - With Environmental Review
 - Printouts Only; No Review Needed
- Printouts of information listed above, plus geological features and state rare species with no legal status.
 - With Environmental Review
 - Printouts Only; No Review Needed
- Other (describe) _____

INFORMATION WE NEED FROM YOU:

- 1) Enclose a map of the project boundary (topographic maps or aerial photos are preferred).
- 2) If possible, please provide a GIS shapefile (NAD 83, UTM Zone 15N) of the project area.
- 3) List the following locational information (attach additional sheets if necessary):

<small>For Agency Use Only</small>	<u>County</u> _____	<u>Township #</u> _____	<u>Range #</u> _____	<u>Section(s) (please list all sections)</u> _____
	_____	_____	_____	<u>Please see attached list</u>
	_____	_____	_____	_____
	_____	_____	_____	_____
	_____	_____	_____	_____

- 4) Please provide the following information (attach additional sheets if necessary):

Project Name <u>Southfork Windfarm</u>
Project Proposer <u>Geronimo Wind</u>
Detailed Project Description (see instructions, please) <u>Please see attached</u>

Current/Past Land-Use of Project Site <u>Please See attached</u>

5) You will be provided with a response letter, an index database printout, and a detailed database printout. Describe how you plan to use this information, including in what form and detail, if any, you wish to publish this information. (Please note that we do not generally give permission to publish the detailed database printout.)

This information will be used to identify major environmental constraints to development of the proposed project. The database check may be included in the permitting of the site, however Geronimo Wind has no intention of publishing or otherwise making the information publicly available.

TURN-AROUND TIME

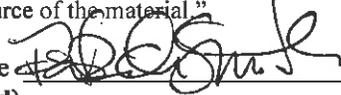
Requests generally take 3 weeks from date of receipt to process, and are processed in the order received. Rush requests are processed in 2 weeks or less, and include an extra fee.

FEES

For-profit organizations, including consultants working for governmental agencies, are charged a fee for this service. In addition, a fee may be charged for large requests from any source. A surcharge of \$50 is applied for ALL rush orders; if this is a rush order, please check the blank below. All fees are subject to change. Please do not include payment with your request; an invoice will be sent to you.

Rush - (\$50 fee for ALL rush orders)

"The information supplied above is complete and accurate. I understand that material supplied to me from the Minnesota Natural Heritage Information System is copyrighted and that I am not permitted to reproduce or publish any of this copyrighted material without prior written permission from the Minnesota DNR. Further, if permission to publish is given, I understand that I must credit the Minnesota Natural Heritage and Nongame Research Program, Minnesota Department of Natural Resources as the source of the material."

Signature 
(required)

Mail or email completed forms to:

For further information call:

Lisa Joyal (for projects associated with environmental reviews; e.g., EAWs)
Endangered Species Environmental Review Coordinator
lisa.joyal@dnr.state.mn.us

(651) 259-5109

or

Sharron Nelson (for general requests)
Assistant Database Manager
sharron.nelson@dnr.state.mn.us

(651) 259-5123

at

Natural Heritage and Nongame Research Program
Minnesota Department of Natural Resources
500 Lafayette Road, Box 25
St. Paul, Minnesota 55155

Or FAX completed forms to: (651) 296-1811

Additional information about the Natural Heritage & Nongame Research Program is available at
<http://www.dnr.state.mn.us/eco/nhnrp/>

For Agency Use Only:

EO's requiring comment _____

Sources contacted	Topic	Response
_____	_____	_____
_____	_____	_____
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Response Summary _____

Responder _____

For Agency Use Only:			
Received _____	Due _____	RUSH	
Related ERDB# _____			
Search Radius _____ mi.	ER/All	Map'd _____	EOs _____
NoR/ NoC/ NoE/ Std/ Sub	Let _____	Inv _____	Log out _____

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WHO IS REQUESTING THE INFORMATION?

Name and Title Patrick Smith, GIS Specialist

Agency/Company Geronimo Wind Energy

Mailing Address 5050 Lincoln Dr #420 Edina MN 55436

(Street) (City) (State) (Zip Code)

Phone 952-988-9000 FAX 952-988-9001 e-mail patrick@geronimowind.com

WHAT INFORMATION DO YOU NEED?

Preferred Reply Method: Email US Mail

- Printouts of known occurrences of federally and state listed plants and animals; native plant communities; and aggregation sites such as bat hibernacula, colonial waterbird nesting sites, and prairie chicken booming grounds.
 - With Environmental Review
 - Printouts Only; No Review Needed
- Printouts of information listed above, plus geological features and state rare species with no legal status.
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	_____ <u>Please see attached list</u>

- 4) Please provide the following information (attach additional sheets if necessary):

Project Name <u>Paynesville Windfarm</u>
Project Proposer <u>Geronimo Wind</u>
Detailed Project Description (see instructions, please) <u>Please see attached</u>

Current/Past Land-Use of Project Site <u>Please See attached</u>

5) You will be provided with a response letter, an index database printout, and a detailed database printout. **Describe how you plan to use this information, including** in what form and detail, if any, you wish to publish this information. (Please note that we do not generally give permission to publish the detailed database printout.) _____

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TURN-AROUND TIME

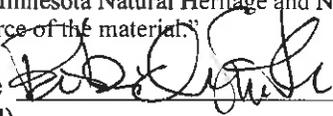
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Signature 
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Mail or email completed forms to:

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Endangered Species Environmental Review Coordinator
lisa.joyal@dnr.state.mn.us

(651) 259-5109

or

Sharron Nelson (for general requests)
Assistant Database Manager
sharron.nelson@dnr.state.mn.us

(651) 259-5123

at

Natural Heritage and Nongame Research Program
Minnesota Department of Natural Resources
500 Lafayette Road, Box 25
St. Paul, Minnesota 55155

Or FAX completed forms to: (651) 296-1811

Additional information about the Natural Heritage & Nongame Research Program is available at
<http://www.dnr.state.mn.us/eco/nhnrp/>

For Agency Use Only:
EO's requiring comment _____

Sources contacted	Topic	Response
_____	_____	_____
_____	_____	_____
_____	_____	_____

Response Summary _____

_____ Responder _____

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Related ERDB# _____			
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 - With Environmental Review
 - Printouts Only; No Review Needed
- Printouts of information listed above, plus geological features and state rare species with no legal status.
 - With Environmental Review
 - Printouts Only; No Review Needed
- Other (describe) _____

INFORMATION WE NEED FROM YOU:

- 1) Enclose a map of the project boundary (topographic maps or aerial photos are preferred).
- 2) If possible, please provide a GIS shapefile (NAD 83, UTM Zone 15N) of the project area.
- 3) List the following locational information (attach additional sheets if necessary):

For Agency Use Only	<u>County</u> _____ <u>Township #</u> _____ <u>Range #</u> _____ <u>Section(s) (please list all sections)</u> _____
	_____ <u>Please see attached list</u> _____
	_____ _____ _____ _____
	_____ _____ _____ _____
	_____ _____ _____ _____

- 4) Please provide the following information (attach additional sheets if necessary):

Project Name <u>Albany Windfarm</u>
Project Proposer <u>Geronimo Wind</u>
Detailed Project Description (see instructions, please) <u>Please see attached</u>

Current/Past Land-Use of Project Site <u>Please See attached</u>

5) You will be provided with a response letter, an index database printout, and a detailed database printout. Describe how you plan to use this information, including in what form and detail, if any, you wish to publish this information. (Please note that we do not generally give permission to publish the detailed database printout.)

This information will be used to identify major environmental constraints to development of the proposed project. The database check may be included in the permitting of the site, however Geronimo Wind has no intention of publishing or otherwise making the information publicly available.

TURN-AROUND TIME

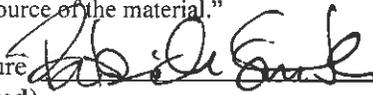
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FEEES

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Rush - (\$50 fee for ALL rush orders)

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Signature 
(required)

Mail or email completed forms to:

For further information call:

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Endangered Species Environmental Review Coordinator
lisa.joyal@dnr.state.mn.us

(651) 259-5109

or

Sharron Nelson (for general requests)
Assistant Database Manager
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Natural Heritage and Nongame Research Program
Minnesota Department of Natural Resources
500 Lafayette Road, Box 25
St. Paul, Minnesota 55155

Or FAX completed forms to: (651) 296-1811

Additional information about the Natural Heritage & Nongame Research Program is available at
<http://www.dnr.state.mn.us/eco/nhnrp/>

For Agency Use Only:
EO's requiring comment _____

Sources contacted	Topic	Response
_____	_____	_____
_____	_____	_____
_____	_____	_____

Response Summary _____

_____ Responder _____

For Agency Use Only:			
Received _____	Due _____	RUSH	
Related ERDB# _____			
Search Radius _____ mi.	ER/All	Map'd _____	EOs _____
NoR/ NoC/ NoE/ Std/ Sub	Let _____	Inv _____	Log out _____

MINNESOTA NATURAL HERITAGE INFORMATION SYSTEM (NHIS) DATA REQUEST FORM

DATE OF REQUEST 9/30/08

WHO IS REQUESTING THE INFORMATION?

Name and Title Patrick Smith, GIS Specialist

Agency/Company Geronimo Wind Energy

Mailing Address 5050 Lincoln Dr #420 Edina MN 55436

(Street) (City) (State) (Zip Code)

Phone 952-988-9000 FAX 952-988-9001 e-mail patrick@geronimowind.com

WHAT INFORMATION DO YOU NEED?

Preferred Reply Method: Email US Mail

- Printouts of known occurrences of federally and state listed plants and animals; native plant communities; and aggregation sites such as bat hibernacula, colonial waterbird nesting sites, and prairie chicken booming grounds.
 - With Environmental Review
 - Printouts Only; No Review Needed
- Printouts of information listed above, plus geological features and state rare species with no legal status.
 - With Environmental Review
 - Printouts Only; No Review Needed
- Other (describe) _____

INFORMATION WE NEED FROM YOU:

- 1) Enclose a map of the project boundary (topographic maps or aerial photos are preferred).
- 2) If possible, please provide a GIS shapefile (NAD 83, UTM Zone 15N) of the project area.
- 3) List the following locational information (attach additional sheets if necessary):

<small>For Agency Use Only</small>	<u>County</u> _____ <u>Township #</u> _____ <u>Range #</u> _____ <u>Section(s) (please list all sections)</u> _____
	_____ <u>Please see attached list</u> _____
	_____ _____ _____ _____
	_____ _____ _____ _____
	_____ _____ _____ _____

- 4) Please provide the following information (attach additional sheets if necessary):

Project Name <u>Sheridan Windfarm</u>
Project Proposer <u>Geronimo Wind</u>
Detailed Project Description (see instructions, please) <u>Please see attached</u>

Current/Past Land-Use of Project Site <u>Please See attached</u>

5) You will be provided with a response letter, an index database printout, and a detailed database printout. Describe how you plan to use this information, including in what form and detail, if any, you wish to publish this information. (Please note that we do not generally give permission to publish the detailed database printout.)

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TURN-AROUND TIME

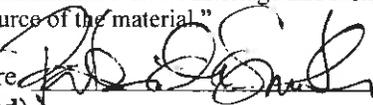
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For Agency Use Only:

EO's requiring comment _____

Sources contacted	Topic	Response
_____	_____	_____
_____	_____	_____
_____	_____	_____

Response Summary _____

Responder _____

For Agency Use Only:			
Received _____	Due _____	RUSH	
Related ERDB# _____			
Search Radius _____ mi.	ER/All _____	Map'd _____	EOs _____
NoR/ NoC/ NoE/ Std/ Sub _____	Let _____	Inv _____	Log out _____

MINNESOTA NATURAL HERITAGE INFORMATION SYSTEM (NHIS) DATA REQUEST FORM

DATE OF REQUEST 9/30/08

WHO IS REQUESTING THE INFORMATION?

Name and Title Patrick Smith, GIS Specialist

Agency/Company Geronimo Wind Energy

Mailing Address 5050 Lincoln Dr #420 Edina MN 55436

(Street) (City) (State) (Zip Code)

Phone 952-988-9000 FAX 952-988-9001 e-mail patrick@geronimowind.com

WHAT INFORMATION DO YOU NEED?

Preferred Reply Method: Email US Mail

- Printouts of known occurrences of federally and state listed plants and animals; native plant communities; and aggregation sites such as bat hibernacula, colonial waterbird nesting sites, and prairie chicken booming grounds.
 - With Environmental Review
 - Printouts Only; No Review Needed
- Printouts of information listed above, plus geological features and state rare species with no legal status.
 - With Environmental Review
 - Printouts Only; No Review Needed
- Other (describe) _____

INFORMATION WE NEED FROM YOU:

- 1) **Enclose a map** of the project boundary (topographic maps or aerial photos are preferred).
- 2) If possible, please **provide a GIS shapefile** (NAD 83, UTM Zone 15N) of the project area.
- 3) List the following locational information (attach additional sheets if necessary):

<small>For Agency Use Only</small>	County _____ Township # _____ Range # _____ Section(s) (please list all sections) _____
	Please see attached list

- 4) Please provide the following information (attach additional sheets if necessary):

Project Name <u>Morgan Wind Farm</u>
Project Proposer <u>Geronimo Wind</u>
Detailed Project Description (see instructions, please) <u>Please see attached</u>

Current/Past Land-Use of Project Site <u>Please See attached</u>

5) You will be provided with a response letter, an index database printout, and a detailed database printout. Describe how you plan to use this information, including in what form and detail, if any, you wish to publish this information. (Please note that we do not generally give permission to publish the detailed database printout.)

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TURN-AROUND TIME

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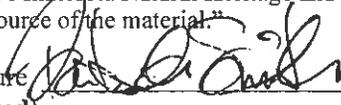
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For Agency Use Only:

EO's requiring comment _____

Sources contacted	Topic	Response
_____	_____	_____
_____	_____	_____
_____	_____	_____

Response Summary _____

_____ Responder _____

For Agency Use Only:		
Received _____	Due _____	RUSH
Related ERDB# _____		
Search Radius _____ mi.	ER/All Map'd _____	EOs _____
NoR/ NoC/ NoE/ Std/ Sub	Let _____	Inv _____ Log out _____

MINNESOTA NATURAL HERITAGE INFORMATION SYSTEM (NHIS) DATA REQUEST FORM

DATE OF REQUEST 9/30/08

WHO IS REQUESTING THE INFORMATION?

Name and Title Patrick Smith, GIS Specialist

Agency/Company Geronimo Wind Energy

Mailing Address 5050 Lincoln Dr #420 Edina MN 55436

(Street) (City) (State) (Zip Code)

Phone 952-988-9000 FAX 952-988-9001 e-mail patrick@geronimowind.com

WHAT INFORMATION DO YOU NEED?

Preferred Reply Method: Email US Mail

- Printouts of known occurrences of federally and state listed plants and animals; native plant communities; and aggregation sites such as bat hibernacula, colonial waterbird nesting sites, and prairie chicken booming grounds.
 - With Environmental Review
 - Printouts Only; No Review Needed
- Printouts of information listed above, plus geological features and state rare species with no legal status.
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- Other (describe) _____

INFORMATION WE NEED FROM YOU:

- 1) Enclose a **map** of the project boundary (topographic maps or aerial photos are preferred).
- 2) If possible, please **provide a GIS shapefile** (NAD 83, UTM Zone 15N) of the project area.
- 3) List the following locational information (attach additional sheets if necessary):

For Agency Use Only.	<u>County</u> _____ <u>Township #</u> _____ <u>Range #</u> _____ <u>Section(s) (please list all sections)</u> _____
	_____ <u>Please see attached list</u>

- 4) Please provide the following information (attach additional sheets if necessary):

Project Name <u>Goodhue Wind Farm</u>
Project Proposer <u>Geronimo Wind</u>
Detailed Project Description (see instructions, please) <u>Please see attached</u>

Current/Past Land-Use of Project Site _____
<u>Please See attached</u>

5) You will be provided with a response letter, an index database printout, and a detailed database printout. **Describe how you plan to use this information, including** in what form and detail, if any, you wish to publish this information. (Please note that we do not generally give permission to publish the detailed database printout.)

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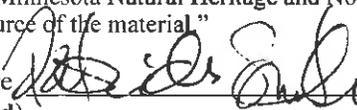
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For Agency Use Only:

EO's requiring comment _____

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_____	_____	_____

Response Summary _____

_____ Responder _____

For Agency Use Only:		
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Related ERDB# _____		
Search Radius _____ ml.	ER/All Map'd _____	EOs _____
NoR/ NoC/ NoE/ Std/ Sub	Let _____	Inv _____ Log out _____

MINNESOTA NATURAL HERITAGE INFORMATION SYSTEM (NHIS) DATA REQUEST FORM

DATE OF REQUEST 9/30/08

WHO IS REQUESTING THE INFORMATION?

Name and Title Patrick Smith, GIS Specialist

Agency/Company Geronimo Wind Energy

Mailing Address 5050 Lincoln Dr #420 Edina MN 55436
(Street) (City) (State) (Zip Code)

Phone 952-988-9000 FAX 952-988-9001 e-mail patrick@geronimowind.com

WHAT INFORMATION DO YOU NEED?

Preferred Reply Method: Email US Mail

- Printouts of known occurrences of federally and state listed plants and animals; native plant communities; and aggregation sites such as bat hibernacula, colonial waterbird nesting sites, and prairie chicken booming grounds.
 - With Environmental Review
 - Printouts Only; No Review Needed
- Printouts of information listed above, plus geological features and state rare species with no legal status.
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- Other (describe) _____

INFORMATION WE NEED FROM YOU:

- 1) **Enclose a map** of the project boundary (topographic maps or aerial photos are preferred).
- 2) If possible, please **provide a GIS shapefile** (NAD 83, UTM Zone 15N) of the project area.
- 3) List the following locational information (attach additional sheets if necessary):

<small>For Agency Use Only</small>	County _____ Township # _____ Range # _____ Section(s) (please list all sections) _____
	_____ Please see attached list _____

- 4) Please provide the following information (attach additional sheets if necessary):

Project Name <u>Black Oak Wind Farm</u>
Project Proposer <u>Geronimo Wind</u>
Detailed Project Description (see instructions, please) <u>Please see attached</u>

Current/Past Land-Use of Project Site <u>Please See attached</u>

5) You will be provided with a response letter, an index database printout, and a detailed database printout. Describe how you plan to use this information, including in what form and detail, if any, you wish to publish this information. (Please note that we do not generally give permission to publish the detailed database printout.) _____

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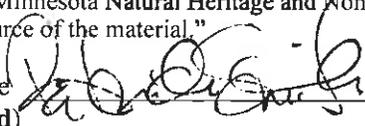
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_____	_____	_____
_____	_____	_____

Response Summary _____

_____ Responder _____

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Related ERDB# _____			
Search Radius _____ mi.	ER/All _____	Map'd _____	EOs _____
NoR/ NoC/ NoE/ Std/ Sub _____	Let _____	Inv _____	Log out _____

MINNESOTA NATURAL HERITAGE INFORMATION SYSTEM (NHIS) DATA REQUEST FORM

DATE OF REQUEST 9/30/08

WHO IS REQUESTING THE INFORMATION?

Name and Title Patrick Smith, GIS Specialist

Agency/Company Geronimo Wind Energy

Mailing Address 5050 Lincoln Dr #420 Edina MN 55436
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Phone 952-988-9000 FAX 952-988-9001 e-mail patrick@geronimowind.com

WHAT INFORMATION DO YOU NEED?

Preferred Reply Method: Email US Mail

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INFORMATION WE NEED FROM YOU:

- 1) **Enclose a map** of the project boundary (topographic maps or aerial photos are preferred).
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For Agency Use Only	<u>County</u> _____ <u>Township #</u> _____ <u>Range #</u> _____ <u>Section(s) (please list all sections)</u> _____
	_____ <u>Please see attached list</u> _____

- 4) Please provide the following information (attach additional sheets if necessary):

Project Name <u>Zion Wind Farm</u>
Project Proposer <u>Geronimo Wind</u>
Detailed Project Description (see instructions, please) <u>Please see attached</u>

Current/Past Land-Use of Project Site _____
<u>Please See attached</u>

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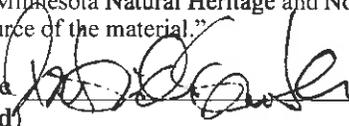
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Signature
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Response Summary _____

_____ Responder _____

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MINNESOTA NATURAL HERITAGE INFORMATION SYSTEM (NHIS) DATA REQUEST FORM

DATE OF REQUEST 9/30/08

WHO IS REQUESTING THE INFORMATION?

Name and Title Patrick Smith, GIS Specialist

Agency/Company Geronimo Wind Energy

Mailing Address 5050 Lincoln Dr #420 Edina MN 55436
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Phone 952-988-9000 FAX 952-988-9001 e-mail patrick@geronimowind.com

WHAT INFORMATION DO YOU NEED?

Preferred Reply Method: Email US Mail

- Printouts of known occurrences of federally and state listed plants and animals; native plant communities; and aggregation sites such as bat hibernacula, colonial waterbird nesting sites, and prairie chicken booming grounds.
 - With Environmental Review
 - Printouts Only; No Review Needed
- Printouts of information listed above, plus geological features and state rare species with no legal status.
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 - Printouts Only; No Review Needed
- Other (describe) _____

INFORMATION WE NEED FROM YOU:

- 1) Enclose a map of the project boundary (topographic maps or aerial photos are preferred).
- 2) If possible, please provide a GIS shapefile (NAD 83, UTM Zone 15N) of the project area.
- 3) List the following locational information (attach additional sheets if necessary):

For Agency Use Only	County _____ Township # _____ Range # _____ Section(s) (please list all sections) _____
	_____ Please see attached list _____

- 4) Please provide the following information (attach additional sheets if necessary):

Project Name <u>Bird Island Wind Farm</u>
Project Proposer <u>Geronimo Wind</u>
Detailed Project Description (see instructions, please) <u>Please see attached</u>

Current/Past Land-Use of Project Site <u>Please See attached</u>

5) You will be provided with a response letter, an index database printout, and a detailed database printout. Describe how you plan to use this information, including in what form and detail, if any, you wish to publish this information. (Please note that we do not generally give permission to publish the detailed database printout.)

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TURN-AROUND TIME

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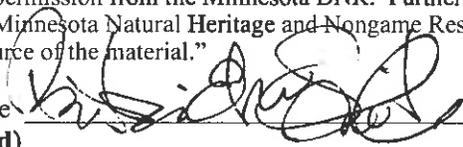
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Signature
(required)



Mail or email completed forms to:

For further information call:

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Endangered Species Environmental Review Coordinator
lisa.joyal@dnr.state.mn.us

(651) 259-5109

or

Sharron Nelson (for general requests)
Assistant Database Manager
sharron.nelson@dnr.state.mn.us

(651) 259-5123

at

Natural Heritage and Nongame Research Program
Minnesota Department of Natural Resources
500 Lafayette Road, Box 25
St. Paul, Minnesota 55155

Or FAX completed forms to: (651) 296-1811

Additional information about the Natural Heritage & Nongame Research Program is available at
<http://www.dnr.state.mn.us/eco/nhnrp/>

For Agency Use Only:
EO's requiring comment _____

Sources contacted	Topic	Response
_____	_____	_____
_____	_____	_____
_____	_____	_____

Response Summary _____

_____ Responder _____

For Agency Use Only:		
Received _____	Due _____	RUSH
Related ERDB# _____		
Search Radius _____ mi.	ER/All Map'd _____	EOs _____
NoR/ NoC/ NoE/ Std/ Sub	Let _____	Inv _____ Log out _____

MINNESOTA NATURAL HERITAGE INFORMATION SYSTEM (NHIS) DATA REQUEST FORM

DATE OF REQUEST 9/30/08

WHO IS REQUESTING THE INFORMATION?

Name and Title Patrick Smith, GIS Specialist

Agency/Company Geronimo Wind Energy

Mailing Address 5050 Lincoln Dr #420 Edina MN 55436
(Street) (City) (State) (Zip Code)

Phone 952-988-9000 FAX 952-988-9001 e-mail patrick@geronimowind.com

WHAT INFORMATION DO YOU NEED?

Preferred Reply Method: Email US Mail

- Printouts of known occurrences of federally and state listed plants and animals; native plant communities; and aggregation sites such as bat hibernacula, colonial waterbird nesting sites, and prairie chicken booming grounds.
 - With Environmental Review
 - Printouts Only; No Review Needed
- Printouts of information listed above, plus geological features and state rare species with no legal status.
 - With Environmental Review
 - Printouts Only; No Review Needed
- Other (describe) _____

INFORMATION WE NEED FROM YOU:

- 1) **Enclose a map** of the project boundary (topographic maps or aerial photos are preferred).
- 2) If possible, please **provide a GIS shapefile** (NAD 83, UTM Zone 15N) of the project area.
- 3) List the following locational information (attach additional sheets if necessary):

For Agency Use Only	<u>County</u> _____ <u>Township #</u> _____ <u>Range #</u> _____ <u>Section(s) (please list all sections)</u> _____
	_____ <u>Please see attached list</u> _____
	_____ _____ _____ _____
	_____ _____ _____ _____
	_____ _____ _____ _____

- 4) Please provide the following information (attach additional sheets if necessary):

Project Name <u>North Star Wind Farm</u>
Project Proposer <u>Geronimo Wind</u>
Detailed Project Description (see instructions, please) _____
<u>Please see attached</u>

Current/Past Land-Use of Project Site _____
<u>Please See attached</u>

5) You will be provided with a response letter, an index database printout, and a detailed database printout. Describe how you plan to use this information, including in what form and detail, if any, you wish to publish this information. (Please note that we do not generally give permission to publish the detailed database printout.)

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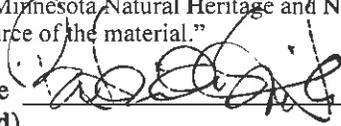
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For Agency Use Only:

EO's requiring comment _____

Sources contacted	Topic	Response
_____	_____	_____
_____	_____	_____
_____	_____	_____

Response Summary _____

_____ Responder _____

For Agency Use Only:		
Received _____	Due _____	RUSH
Related ERDB# _____		
Search Radius _____ mi.	ER/All Map'd _____	EOs _____
NoR/ NoC/ NoE/ Std/ Sub	Let _____	Inv _____ Log out _____

MINNESOTA NATURAL HERITAGE INFORMATION SYSTEM (NHIS) DATA REQUEST FORM

DATE OF REQUEST 9/30/08

WHO IS REQUESTING THE INFORMATION?

Name and Title Patrick Smith, GIS Specialist

Agency/Company Geronimo Wind Energy

Mailing Address 5050 Lincoln Dr #420 Edina MN 55436

(Street)

(City)

(State)

(Zip Code)

Phone 952-988-9000 FAX 952-988-9001 e-mail patrick@geronimowind.com

WHAT INFORMATION DO YOU NEED?

Preferred Reply Method: Email US Mail

- Printouts of known occurrences of federally and state listed plants and animals; native plant communities; and aggregation sites such as bat hibernacula, colonial waterbird nesting sites, and prairie chicken booming grounds.
 - With Environmental Review
 - Printouts Only; No Review Needed
- Printouts of information listed above, plus geological features and state rare species with no legal status.
 - With Environmental Review
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- Other (describe) _____

INFORMATION WE NEED FROM YOU:

- 1) **Enclose a map** of the project boundary (topographic maps or aerial photos are preferred).
- 2) If possible, please **provide a GIS shapefile** (NAD 83, UTM Zone 15N) of the project area.
- 3) List the following locational information (attach additional sheets if necessary):

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	_____ <u>Please see attached list</u> _____

- 4) Please provide the following information (attach additional sheets if necessary):

Project Name <u>Butterfield Wind Farm</u>
Project Proposer <u>Geronimo Wind</u>
Detailed Project Description (see instructions, please) _____
<u>Please see attached</u>

Current/Past Land-Use of Project Site _____
<u>Please See attached</u>

5) You will be provided with a response letter, an index database printout, and a detailed database printout. Describe how you plan to use this information, including in what form and detail, if any, you wish to publish this information. (Please note that we do not generally give permission to publish the detailed database printout.)

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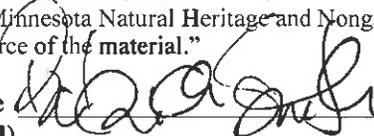
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For Agency Use Only:

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Response Summary _____

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NoR/ NoC/ NoE/ Std/ Sub	Let _____	Inv _____	Log out _____

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DATE OF REQUEST 9/30/08

WHO IS REQUESTING THE INFORMATION?

Name and Title Patrick Smith, GIS Specialist

Agency/Company Geronimo Wind Energy

Mailing Address 5050 Lincoln Dr #420 Edina MN 55436
(Street) (City) (State) (Zip Code)

Phone 952-988-9000 FAX 952-988-9001 e-mail patrick@geronimowind.com

WHAT INFORMATION DO YOU NEED?

Preferred Reply Method: Email US Mail

- Printouts of known occurrences of federally and state listed plants and animals; native plant communities; and aggregation sites such as bat hibernacula, colonial waterbird nesting sites, and prairie chicken booming grounds.
 - With Environmental Review
 - Printouts Only; No Review Needed
- Printouts of information listed above, plus geological features and state rare species with no legal status.
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INFORMATION WE NEED FROM YOU:

- 1) Enclose a map of the project boundary (topographic maps or aerial photos are preferred).
- 2) If possible, please provide a GIS shapefile (NAD 83, UTM Zone 15N) of the project area.
- 3) List the following locational information (attach additional sheets if necessary):

For Agency Use Only	County _____ Township # _____ Range # _____ Section(s) (please list all sections) _____
	_____ Please see attached list _____

- 4) Please provide the following information (attach additional sheets if necessary):

Project Name <u>Springfield Wind Farm</u>
Project Proposer <u>Geronimo Wind</u>
Detailed Project Description (see instructions, please) <u>Please see attached</u>

Current/Past Land-Use of Project Site _____
<u>Please See attached</u>

5) You will be provided with a response letter, an index database printout, and a detailed database printout. Describe how you plan to use this information, including in what form and detail, if any, you wish to publish this information. (Please note that we do not generally give permission to publish the detailed database printout.) _____

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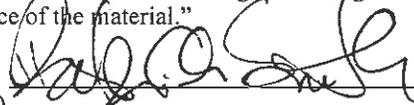
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NO STAPLES
PLEASE

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For Agency Use Only	<u>County</u> _____ <u>Township #</u> _____ <u>Range #</u> _____ <u>Section(s) (please list all sections)</u> _____
	_____ <u>Please see attached list</u> _____

- 4) Please provide the following information (attach additional sheets if necessary):

Project Name <u>Prairie Rose Wind Farm</u>
Project Proposer <u>Geronimo Wind</u>
Detailed Project Description (see instructions, please) _____
<u>Please see attached</u>

Current/Past Land-Use of Project Site _____
<u>Please See attached</u>

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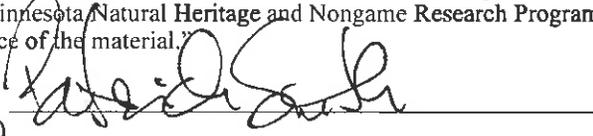
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For Agency Use Only:

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_____	_____	_____

Response Summary _____

_____ Responder _____

Printed October 2008
 Data valid for one year

Minnesota Natural Heritage Information System: Rare Features Database

Index Report of records within 1 mile radius of:

Northstar Windfarm
 Multiple TRS
 Cottonwood County

Element Name and Occurrence Number	Federal Status	MN Status	State Rank	Global Rank	Last Observed Date	EO ID #
Cottonwood County, MN						
<u>Asclepias sullivantii</u> (Sullivant's Milkweed) #23 Location Description: T105N R35W S12		THR	S2	G5	1992-08-22	19065
<u>Dry Hill Prairie (Southern) Type</u> #282 Location Description: T105N R35W S20, T105N R35W S30, T105N R35W S19, T105N R35W S29		N/A	S2	GNR	2001-10-01	29056
<u>Lespedeza leptostachya</u> (Prairie Bush Clover) #65 Location Description: T105N R35W S20, T105N R35W S30, T105N R35W S19, T105N R35W S29	LT	THR	S2	G3	2001-09-27	29054
<u>Mesic Prairie (Southern) Type</u> #199 Location Description: T105N R34W S14, T105N R34W S12, T105N R34W S13, T105N R34W S11		N/A	S2	GNR	1999	402
<u>Mesic Prairie (Southern) Type</u> #235 Location Description: T105N R35W S1, T105N R35W S12		N/A	S2	GNR	1997-09-19	24314
<u>Mesic Prairie (Southern) Type</u> #373 Location Description: T105N R35W S17		N/A	S2	GNR	1997-09-21	12337
<u>Native Plant Community, Undetermined Class</u> #894 Location Description: T105N R34W S2, T105N R34W S11		N/A	SNR	GNR	1980	8655

Records Printed = 7



Minnesota Department of Natural Resources

Division of Ecological Resources, Box 25

500 Lafayette Road

St. Paul, Minnesota 55155-4025

Phone: (651) 259-5109 Fax: (651) 296-1811 E-mail: lisa.joyal@dnr.state.mn.us

November 17, 2008

Mr. Patrick Smith
Geronimo Wind Energy
5050 Lincoln Drive, #420
Edina, MN 55436

Re: Request for Natural Heritage information in the vicinity of the proposed North Star Wind Farm;
T105N R35W Sections 1, 11-15, 21-23 and T105N R34W Sections 7-10, 15-18, 21, 22; Cottonwood County
Correspondence # : ERDB 20090189

Dear Mr. Smith,

As requested, the Minnesota Natural Heritage Information System has been queried to determine if any rare species or other significant natural features are known to occur within an approximate one-mile radius of the proposed project. Based on this query, several rare features have been documented within the search area (for details, see the enclosed database reports). Please address the following issues in the Public Utilities Commission (PUC) Site Permit Application for this project:

- The Minnesota County Biological Survey (MCBS) has identified two high-quality mesic prairie remnants in the right-of-way of the Union Pacific Railroad in T105N R35W Sections 11 & 12. (GIS shapefiles of MCBS Railroad Rights-of-Way Prairies can be downloaded from the DNR's Data Deli website at http://deli.dnr.state.mn.us/data_search.html.) The 1997 Minnesota State Legislature directed the DNR to conduct a field review of active railroad rights-of-way (ROW) to identify native prairie. The DNR surveyed 3,240 miles of railroad ROW, of which 487 discontinuous miles of native prairie were identified. The prairie fragments were ranked *very good*, *good*, or *fair* based on the coverage of native prairie plant species, abundance of woody shrubs, and level of disturbance (such as herbicide use or equipment storage). The prairie remnants in the vicinity of the project area (EO ID #24314 on the enclosed reports) were considered to be in very good condition, and they also contain a population of Sullivant's milkweed (*Asclepias sullivantii*), a state-listed threatened plant species. Minnesota's endangered species law (*Minnesota Statutes*, section 84.0895) and associated rules (*Minnesota Rules*, part 6212.1800 to 6212.2300 and 6134) prohibit the taking of threatened or endangered species without a permit. As such, disturbance to these prairie remnants should be avoided. **Please contact me again if avoidance is not possible**, as a botanical survey will be required. We will need to discuss potential surveyors, survey protocol, and other requirements before any survey work is initiated.
- Several Wildlife Management Areas (WMAs) are located in the vicinity of the project area. (GIS shapefiles of the WMA boundaries can be downloaded from the DNR's Data Deli website at <http://deli.dnr.state.mn.us/>.) We recommend a minimum ¼ mile setback from all WMAs. In addition, please contact the Area Wildlife Manager, Randy Markl at (507) 831-2900, to discuss any concerns he may have about turbines being sited near the WMAs.

The Natural Heritage Information System (NHIS), a collection of databases that contains information about Minnesota's rare natural features, is maintained by the Division of Ecological Resources, Department of Natural Resources. The NHIS is continually updated as new information becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant species, native plant communities, and other natural features. However, the NHIS is not an exhaustive inventory and thus does not represent all of the occurrences of rare features within the state. Therefore, ecologically significant features for which we have no records may exist within the project area.

The enclosed results include an Index Report and a Detailed Report of records in the Rare Features Database, the main database of the NHIS. To control the release of specific location information, which might result in the destruction of a rare feature, both reports are copyrighted.

The Index Report provides rare feature locations only to the nearest section, and may be reprinted, unaltered, in an environmental review document (e.g., EAW or EIS), municipal natural resource plan, or report compiled by your company for the project listed above. If you wish to reproduce the index report for any other purpose, please contact me to request written permission. **The Detailed Report is for your personal use only as it may include specific location information that is considered nonpublic data under *Minnesota Statutes*, section 84.0872, subd. 2. If you wish to reprint or publish the Detailed Report for any purpose, please contact me to request written permission.**

Please be aware that this letter focuses only on potential effects to *rare natural features*; there may be other natural resource concerns associated with the proposed project. This letter does not constitute review or approval by the Department of Natural Resources as a whole. An invoice in the amount of \$96.67 will be mailed to you under separate cover within two weeks of the date of this letter. You are being billed for the database search and printouts, and staff scientist review. Thank you for consulting us on this matter, and for your interest in preserving Minnesota's rare natural resources.

Sincerely,



Lisa Joyal
Endangered Species Environmental Review Coordinator

enc. Rare Features Database: Index Report
Rare Features Database: Detail Report
Rare Features Database Reports: An Explanation of Fields

cc: John Schladweiler

Swenson, Kristen

From: Patrick Smith
Sent: Friday, June 12, 2009 11:20 AM
To: Lisa Joyal
Subject: Odell Wind Farm - NHIS Request
Attachments: OdellSiteMap.jpg; Odell_NHISRequestFormSupliment06112009.pdf; odednr.pdf; GWE_OdellWindFarm_06122009.zip

Dear Ms. Joyal,

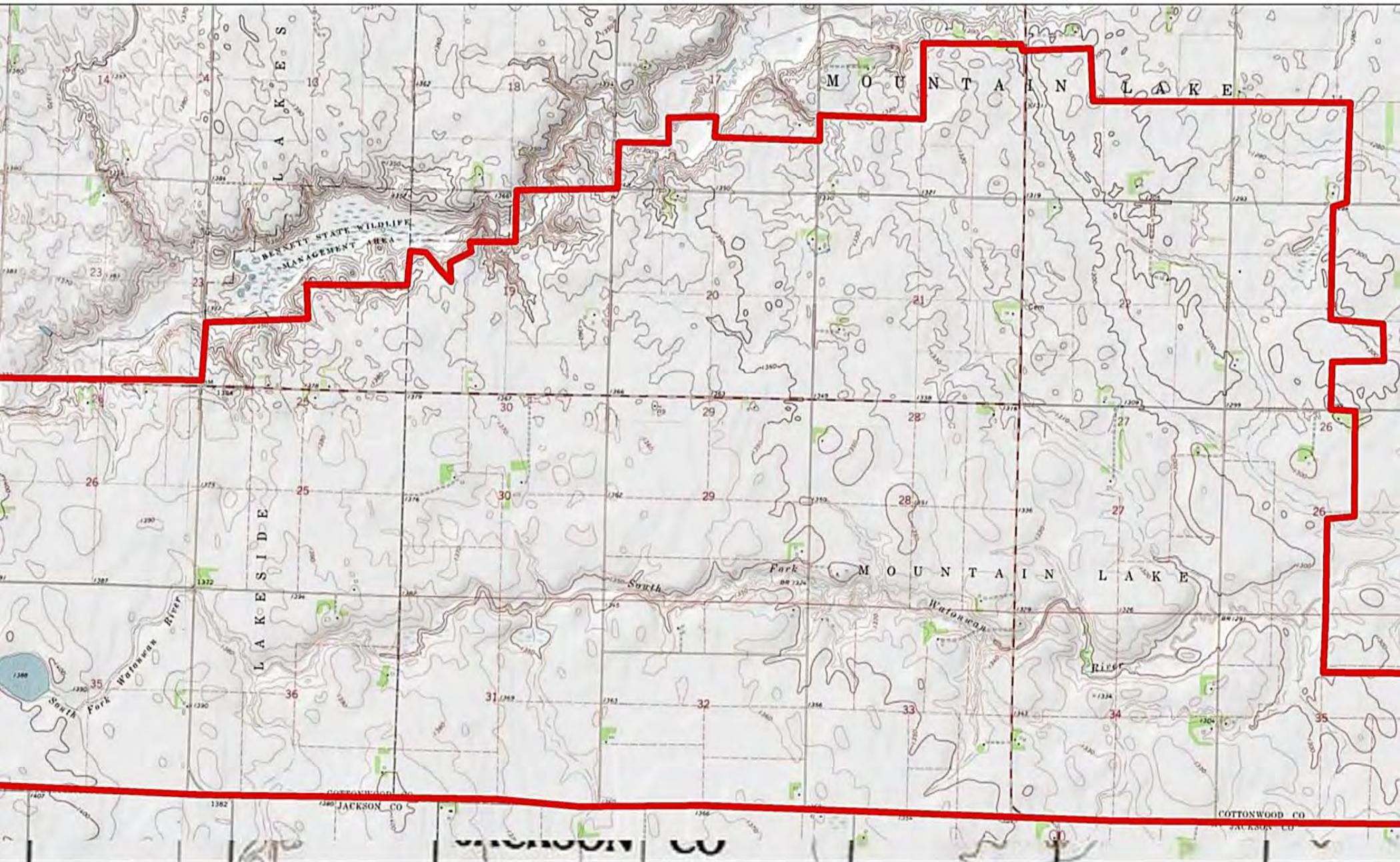
Attached is information associated with Geronimo Wind Energy's Odell Wind Farm project, this information includes: the MN MNHIS data Request form and supplemental project description, site map and project shapefile. GWE is applying to the Minnesota Public Utilities Commission for a Large Wind Energy Conversion System (LWECS) Site Permit (MN Rules Chapter 7836). This request is pursuant to PUC rules. Geronimo Wind Energy is requesting a search of the NHIS with an environmental review for the Odell project.

Thank you for your assistance.

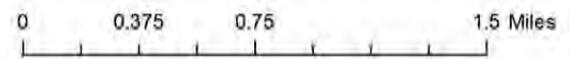
Best Regards,

Patrick Smith
Environmental Specialist

Geronimo Wind Energy
5050 Lincoln Dr. Suite 420
Edina MN 55436
Phone: 952-988-9000
Fax: 952-988-9001



Odell Wind Farm



For Agency Use Only:			
Received _____	Due _____	RUSH	
Related ERDB# _____			
Search Radius _____ mi.	ER/All _____	Map'd _____	EOs _____
NoR/ NoC/ NoE/ Std/ Sub _____	Let _____	Inv _____	Log out _____

MINNESOTA NATURAL HERITAGE INFORMATION SYSTEM (NHIS) DATA REQUEST FORM

DATE OF REQUEST 6/11/2009

WHO IS REQUESTING THE INFORMATION?

Name and Title Patrick Smith, Environmental Specialist

Agency/Company Geronimo Wind Energy

Mailing Address 5050 Lincoln Dr #420 Edina MN 55436
(Street) (City) (State) (Zip Code)

Phone 952-988-9000 FAX 952-988-9001 e-mail patrick@geronimowind.com

WHAT INFORMATION DO YOU NEED?

Preferred Reply Method: Email US Mail

- Printouts of known occurrences of federally and state listed plants and animals; native plant communities; and aggregation sites such as bat hibernacula, colonial waterbird nesting sites, and prairie chicken booming grounds.
 - With Environmental Review
 - Printouts Only; No Review Needed
- Printouts of information listed above, plus geological features and state rare species with no legal status.
 - With Environmental Review
 - Printouts Only; No Review Needed
- Other (describe) _____

INFORMATION WE NEED FROM YOU:

- 1) **Enclose a map** of the project boundary (topographic maps or aerial photos are preferred).
- 2) If possible, please **provide a GIS shapefile** (NAD 83, UTM Zone 15N) of the project area.
- 3) List the following locational information (attach additional sheets if necessary):

For Agency Use Only	<u>County</u>	<u>Township #</u>	<u>Range #</u>	<u>Section(s) (please list all sections)</u>
	Cottonwood	105	35	24, 25, 26, 35, 36
	Cottonwood	105	34	14 - 17, 19 - 22, 26 - 29, 31 - 35
	_____	_____	_____	_____
	_____	_____	_____	_____

- 4) Please provide the following information (attach additional sheets if necessary):

Project Name <u>Odell Wind Farm</u>
Project Proposer <u>Geronimo Wind Energy</u>
Detailed Project Description (see instructions, please) <u>See Attached</u>

Current/Past Land-Use of Project Site <u>See Attached</u>

5) You will be provided with a response letter, an index database printout, and a detailed database printout. **Describe how you plan to use this information, including** in what form and detail, if any, you wish to publish this information. (Please note that we do not generally give permission to publish the detailed database printout.) _____

The information will be used for project planning and permitting.

TURN-AROUND TIME

Requests generally take **3 weeks** from date of receipt to process, and are processed in the order received. Rush requests are processed in 2 weeks or less, and include an extra fee.

FEES

For-profit organizations, including consultants working for governmental agencies, are charged a fee for this service. In addition, **a fee may be charged for large requests from any source. A surcharge of \$50 is applied for ALL rush orders;** if this is a rush order, please check the blank below. All fees are subject to change. Please do not include payment with your request; an invoice will be sent to you.

Rush - (\$50 fee for ALL rush orders)

“The information supplied above is complete and accurate. I understand that material supplied to me from the Minnesota Natural Heritage Information System is copyrighted and that I am not permitted to reproduce or publish any of this copyrighted material without prior written permission from the Minnesota DNR. Further, if permission to publish is given, I understand that I must credit the Minnesota Natural Heritage and Nongame Research Program, Minnesota Department of Natural Resources as the source of the material.”

Signature _____
(required)

Mail or email completed forms to:

For further information call:

Lisa Joyal (for projects associated with environmental reviews; e.g., EAWs)
Endangered Species Environmental Review Coordinator
lisa.joyal@dnr.state.mn.us

(651) 259-5109

or

Sharron Nelson (for general requests)
Assistant Database Manager
sharron.nelson@dnr.state.mn.us

(651) 259-5123

at

Natural Heritage and Nongame Research Program
Minnesota Department of Natural Resources
500 Lafayette Road, Box 25
St. Paul, Minnesota 55155

Or FAX completed forms to: (651) 296-1811

Additional information about the Natural Heritage & Nongame Research Program is available at
<http://www.dnr.state.mn.us/eco/nhnrp/>

For Agency Use Only:

EO's requiring comment _____

Sources contacted Topic

Response

Response Summary _____

Responder _____



Odell Wind Farm

Project Description:

The Odell Project is a Large Wind Energy Conversion System (LWECS), as defined in the Wind Siting Act, Minnesota Stat. §216F.01. The Project is located in Cottonwood County, Minnesota, on approximately 12729 Acres. The project will have an electrical generating capacity of up to 200 megawatts (mW), consisting from 67 to 133 wind turbine generators. The Developer has not made a final selection on turbines for the Project and proposes to permit the Project for a range in turbine size from 1.5 to 3.0 MW. The application uses the General Electric (GE) 1.5 MW machine as a representative turbine for the 1.5 MW Class, the Suzlon 2.1 MW machine as a representative turbine for the 2.1 MW Class, the GE 2.5 MW machine as a representative turbine for the 2.5 MW Class and the Vestas 3.0 MW machine as a representative turbine for the 3.0 MW Class. Together these four turbines span the spectrum of the turbine models in the 1.5 to 3.0 MW range. The Applicant may elect to select turbines by other turbine vendors in the 1.5 to 3.0 MW range. Associated facilities include gravel access roads, interconnection to and expansion of the Lakefiled Substation, permanent meteorological towers and wind electrical collection system. There is the potential for as yet undetermined utility connections to occur outside of the submitted area; if and when the location of these connections are determined an additional data request will be completed. This project will use standard construction methods associated with wind energy conversion system parks at the time of construction. The Project is expected to come online between 2011 and 2012.

Current/Past Land Use:

The area is predominantly agricultural with a mix of livestock and cropping activities and has, historically been under this use post settlement. Some of this farmland may have been recently converted to conservation uses in the form of CRP, Reinvest in Minnesota or other conservation programs that included both private and public ownership. A number of both current and uninhabited farmsteads are located within the project boundaries. Because of the large size of this project a number of non-agricultural industrial and commercial uses may be present but are as yet to be identified by the developer. These may range from gravel pits to private stores and service providers.

Lisa,

At this time, because of the location and shape of the prairie remnant identified in your letter we would not anticipate impact. We will need to do a more complete survey of the area to identify other potential remnants, we will contact you at a later date if it is determined that construction or operation of the project will impact a prairie remnant. It is Geronimo Wind Energy's goal to avoid impacts to prairie remnants whenever possible.

Best Regards,

Patrick

-----Original Message-----

From: Lisa Joyal [mailto:Lisa.Joyal@dnr.state.mn.us]
Sent: Friday, August 28, 2009 11:59 AM
To: Patrick Smith
Subject: Odell Wind Farm

I have attached the reply letter and database reports regarding the above project. Please remember that the detailed report is for your use only. It should not be published or copied (including electronically) for others.

Please respond via email whether the project will be impacting any native prairie remnants.

Please accept my apologies for the slow turnaround on this request.

Sincerely,

Lisa

~~~~~

Lisa Joyal  
Natural Heritage Review Coordinator  
NHIS Data Distribution Coordinator  
Division of Ecological Resources  
Minnesota Department of Natural Resources 500 Lafayette Road, Box 25 St. Paul, MN  
55155

phone: 651-259-5109  
fax: 651-296-1811  
[lisa.joyal@state.mn.us](mailto:lisa.joyal@state.mn.us)  
[www.mndnr.gov/eco](http://www.mndnr.gov/eco)

Printed August 2009  
 Data valid for one year

**Minnesota Natural Heritage Information System**  
**Index Report of records within 1 mile radius of:**  
 ERDB #20090921 - Odell Wind Farm  
 Multiple TRS  
 Cottonwood County

**Rare Features Database:**

| Element Name and Occurrence Number                                                                                              | Federal Status | MN Status | State Rank | Global Rank | Last Observed Date | EO ID # |
|---------------------------------------------------------------------------------------------------------------------------------|----------------|-----------|------------|-------------|--------------------|---------|
| <b>Invertebrate Animal</b>                                                                                                      |                |           |            |             |                    |         |
| <u>Schinia indiana</u> (Phlox Moth) #2<br>T105N R34W S13, T105N R34W S12 ; Cottonwood County                                    |                | SPC       | S3         | G2G4        | 2006-06-27         | 33943   |
| <b>Vascular Plant</b>                                                                                                           |                |           |            |             |                    |         |
| <u>Asclepias sullivantii</u> (Sullivant's Milkweed) #41<br>T105N R34W S13 ; Cottonwood County                                   |                | THR       | S2         | G5          | 1998-07-18         | 23279   |
| <b>Terrestrial Community - Other Classification</b>                                                                             |                |           |            |             |                    |         |
| <u>Mesic Prairie (Southern) Type</u> #199<br>T105N R34W S14, T105N R34W S12, T105N R34W S13, T105N R34W S11 ; Cottonwood County |                | N/A       | S2         | GNR         | 1999               | 402     |

**Records Printed = 3**

Minnesota's endangered species law (Minnesota Statutes, section 84.0895) and associated rules (Minnesota Rules, part 6212.1800 to 6212.2300 and 6134) prohibit the taking of threatened or endangered species without a permit. For plants, taking includes digging or destroying. For animals, taking includes pursuing, capturing, or killing.

Printed April 2013  
 Data valid for one year

**Minnesota Natural Heritage Information System**  
**Index Report of records within 1 mile radius of:**  
 ERDB# 20090921-0003 - Odell Wind Farm  
 Multiple TRS  
 Watonwan, Martin, Jackson, & Cottonwood Counties

**Rare Features Database:**

| Element Name and Occurrence Number                                                                                                                                                       | Federal Status | MN Status | Draft Status | SGCN Status        | State Rank | Global Rank | Last Obs Date | EO ID #   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------|--------------|--------------------|------------|-------------|---------------|-----------|
| <b>Vertebrate Animal</b>                                                                                                                                                                 |                |           |              |                    |            |             |               |           |
| <u>Ammodramus henslowii</u> (Henslow's Sparrow) #77<br>T105N R35W S13, T105N R35W S24; Cottonwood County                                                                                 |                | END       | no chang     | SGCN               | S1B        | G4          | 2007-06-15    | 35462     |
| <b>Invertebrate Animal</b>                                                                                                                                                               |                |           |              |                    |            |             |               |           |
| <u>Schinia indiana</u> (Phlox Moth) #2<br>T105N R34W S12, T105N R34W S13; Cottonwood County                                                                                              |                | SPC       | no chang     | SGCN               | S3         | G2G4        | 2006-06-27    | 33943     |
| <b>Vascular Plant</b>                                                                                                                                                                    |                |           |              |                    |            |             |               |           |
| <u>Asclepias sullivantii</u> (Sullivant's Milkweed) #41<br>T105N R34W S13; Cottonwood County                                                                                             |                | THR       | no chang     |                    | S2         | G5          | 1998-07-18    | 23279     |
| <b>Native Plant Community (This may not represent a complete list. Also see MCBS Native Plant Communities at <a href="http://deli.dnr.state.mn.us">http://deli.dnr.state.mn.us</a>.)</b> |                |           |              |                    |            |             |               |           |
| <u>Mesic Prairie (Southern) Type</u> #199<br>T105N R34W S11, T105N R34W S12, T105N R34W S13, T105N R34W S14; Cottonwood County                                                           |                |           |              | (NPC Code: UPs23a) | N/A        | S2          | GNR           | 1999 402  |
| <u>Native Plant Community, Undetermined Class</u> #894<br>T105N R34W S11, T105N R34W S2; Cottonwood County                                                                               |                |           |              | (NPC Code: )       | N/A        | SNR         | GNR           | 1980 8655 |

Records Printed = 5

Minnesota's endangered species law (*Minnesota Statutes*, section 84.0895) and associated rules (*Minnesota Rules*, part 6212.1800 to 6212.2300 and 6134) prohibit the taking of threatened or endangered species without a permit. For plants, taking includes digging or destroying. For animals, taking includes pursuing, capturing, or killing.

**An Explanation of Fields:**

**Element Name and Occurrence Number:** The Element is the name of the rare feature. For plant and animal species records, this field holds the scientific name followed by the common name in parentheses; for all other elements it is solely the element name. Native plant community names correspond to Minnesota's Native Plant Community Classification (Version 2.0). The Occurrence Number, in combination with the Element Name, uniquely identifies each record.

**Federal Status:** The status of the species under the U.S. Endangered Species Act: LE = endangered; LT = threatened; LE,LT = listed endangered in part of its range, listed threatened in another part of its range; LT,PDL = listed threatened, proposed for delisting; C = candidate for listing. If null or 'No Status,' the species has no federal status.

**MN Status:** The legal status of the plant or animal species under the Minnesota Endangered Species Law: END = endangered; THR = threatened; SPC = special concern; NON = tracked, but no legal status. Native plant communities, geological features, and colonial waterbird nesting sites do not have any legal status under the Endangered Species Law and are represented by a N/A.

Printed April 2013  
Data valid for one year

**Minnesota Natural Heritage Information System**  
**Index Report of records within 1 mile radius of:**  
ERDB# 20090921-0003 - Odell Wind Farm  
Multiple TRS  
Watonwan, Martin, Jackson, & Cottonwood Counties

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**Draft Status:** Proposed change to the legal status of the plant or animal species under the Minnesota Endangered Species Law: END = endangered; THR = threatened; SPC = special concern; Watchlist = tracked, but no legal status.

**SGCN Status:** SGCN = The species is a Species in Greatest Conservation Need as identified in Minnesota's State Wildlife Action Plan (<http://www.dnr.state.mn.us/cwcs/index.html>). This designation applies to animals only.

**State Rank:** Rank that best characterizes the relative rarity or endangerment of the taxon or plant community in Minnesota. The ranks do not represent a legal status. They are used by the Minnesota Department of Natural Resources to set priorities for research, inventory and conservation planning. The state ranks are updated as inventory information becomes available. S1 = Critically imperiled in Minnesota because of extreme rarity or because of some factor(s) making it especially vulnerable to extirpation from the state. S2 = Imperiled in Minnesota because of rarity or because of some factor(s) making it very vulnerable to extirpation from the state. S3 = Vulnerable in Minnesota either because rare or uncommon, or found in a restricted range, or because of other factors making it vulnerable to extirpation. S4 = Apparently secure in Minnesota, usually widespread. S5 = Demonstrably secure in Minnesota, essentially ineradicable under present conditions. SH = Of historical occurrence in the state, perhaps having not been verified in the past 20 years, but suspected to be still extant. An element would become SH without the 20-year delay if the only known occurrences in the state were destroyed or if it had been extensively and unsuccessfully looked for. SNR = Rank not yet assessed. SU = Unable to rank. SX = Presumed extinct in Minnesota. SNA = Rank not applicable. S#S# = Range Rank: a numeric range rank (e.g., S2S3) is used to indicate the range of uncertainty about the exact status of the element. S#B, S#N = Used only for migratory animals, whereby B refers to the breeding population of the element in Minnesota and N refers to the non-breeding population of the element in Minnesota.

**Global Rank:** The global (i.e., range-wide) assessment of the relative rarity or imperilment of the species or community. Ranges from G1 (critically imperiled due to extreme rarity on a world-wide basis) to G5 (demonstrably secure, though perhaps rare in parts of its range). Global ranks are determined by NatureServe, an international network of natural heritage programs and conservation data centers.

**Last Observed Date:** Date that the Element Occurrence was last observed to be extant at the site in format YYYY-MM-DD.

**EO ID #:** Unique identifier for each Element Occurrence record.

**Element Occurrence:** An area of land and/or water in which an Element (i.e., a rare species or community) is, or was, present, and which has practical conservation value for the Element as evidenced by potential continued (or historical) presence and/or regular recurrence at a given location. Specifications for each species determine whether multiple observations should be considered 1 Element Occurrence or 2, based on minimum separation distance and barriers to movement.



# Minnesota Department of Natural Resources

Division of Ecological and Water Resources, Box 25

500 Lafayette Road

St. Paul, Minnesota 55155-4025

Phone: (651) 259-5109 E-mail: [lisa.joyal@state.mn.us](mailto:lisa.joyal@state.mn.us)

June 24, 2013

Correspondence # ERDB 20090921-0003

Ms. Heather Kieweg  
Applied Ecological Services, Inc.  
21938 Mushtown Road  
Prior Lake, MN 55372

RE: Natural Heritage Review of the proposed Odell Wind Farm;  
Cottonwood, Jackson, Martin, and Watonwan Counties

Dear Ms. Kieweg,

As requested, the Minnesota Natural Heritage Information System has been queried to determine if any rare species or other significant natural features are known to occur within an approximate one-mile radius of the proposed project. Based on this query, rare features have been documented within the search area (for details, see the enclosed database reports; please visit the Rare Species Guide at <http://www.dnr.state.mn.us/rsg/index.html> for more information on the biology, habitat use, and conservation measures of these rare species). Please note that the following **rare features may be adversely affected** by the proposed project:

### *Ecologically Significant Areas*

The proposed project is in the Minnesota River Prairie Ecological Subsection (<http://www.dnr.state.mn.us/ecs/index.html>). Key habitats, priority conservation areas as identified in Minnesota's State Wildlife Action Plan (<http://www.dnr.state.mn.us/cwcs/index.html>), in this subsection include prairie, shallow lakes, and nonforested wetlands.

The Minnesota Biological Survey (MBS) has identified several Sites of Biodiversity Significance within the project boundary (see enclosed map). Sites of Biodiversity Significance have varying levels of native biodiversity and are ranked based on the relative significance of this biodiversity at a statewide level. Factors taken into account during the ranking process include the number of rare species documented within the site, the quality of the native plant communities in the site, the size of the site, and the context of the site within the landscape. These particular Sites contain native prairie and state-listed species (see below). **Given the ecological significance of these Sites, the DNR recommends that those rated Moderate or above be considered avoidance areas within the permitting boundary.** Indirect impacts from surface runoff or the spread of invasive species should also be considered during project design and implementation.

- A Site of High Biodiversity Significance is located in T105N R34W Section 13. This Site contains several rare native plant communities including Mesic Prairie, Wet Prairie, Prairie Mixed Cattail Marsh, Seepage Meadow/Carr and Southern Basin Wet Meadow/Carr. This Site also contains known occurrences of Sullivan's milkweed (*Asclepias sullivantii*), a state-listed threatened plant, and the phlox moth (*Schinia indiana*), a state-listed moth of special concern.
- There is a Site of Moderate Biodiversity Significance in T105N R35W Section 26. This Site contains Dry Hill Prairie and a Prairie Wetland Complex.
- There is a Site of Moderate Biodiversity Significance in T105N R35W Section 24 and T105N R34W Section 19. Most of this Site is within the Bennett Wildlife Management Area, but there are portions

within the project boundary. Within the project boundary, the Site contains Dry Hill Prairie, Mesic Prairie, and Prairie Mixed Cattail Marsh. The Henslow's sparrow (*Ammodramus henslowii*), a state-listed endangered bird, was documented in this Site during the 2007 breeding season. The status of this species is proposed to change to threatened when the state list is next revised (likely this year).

- There is a Site of Moderate Biodiversity Significance in T105N R34W Section 17 that contains Dry Hill Prairie.
- There is a Site of Moderate Biodiversity Significance in T105N R34W Sections 28, 29, & 32. It also contains Dry Hill Prairie.
- A Site ranked as Below is located in T105N R33W Section 7. Although Sites ranked as Below do not meet the minimum biodiversity threshold for statewide significance, they may have conservation value at the local level as habitat for native plants and animals, corridors for animal movements, buffers surrounding higher quality natural areas, or as areas with high potential for restoration of native habitat.

All of the native plant communities mentioned above are rare. The Prairie Mixed Cattail Marsh has a conservation status rank of S1 meaning that it is critically imperiled within Minnesota. The Seepage Meadow/Carr has a rank of S3 indicating that it is vulnerable to extirpation within Minnesota. The remaining native plant communities all have a rank of S2 indicating that they are imperiled in Minnesota.

In the mid-1800's, Minnesota had eighteen million acres of prairie. Less than 1% remains. Given that more than 99% of Minnesota's prairies have been destroyed, and more than one-third of Minnesota's endangered, threatened, and special concern species are now dependent on the remaining small fragments of Minnesota's prairie ecosystem, we feel that all prairie remnants merit protection. We also recommend that turbines and other infrastructure be distant enough from native prairies as to allow for prairie management, such as prescribed burning.

Please note that the wetlands mentioned above may qualify as Rare Natural Communities under the Wetland Conservation Act. Minnesota Rule 8420.0515, Subpart 3 states that a wetland replacement plan for activities that modify a rare natural community must be denied if the local government unit determines that the proposed activities will permanently adversely affect the natural community. If you have any questions regarding this, please contact Doug Norris, DNR Wetlands Program Coordinator, at 651-259-5125 or [Doug.Norris@state.mn.us](mailto:Doug.Norris@state.mn.us).

#### *State-listed Plants*

Sullivant's milkweed (*Asclepias sullivantii*), a state-listed threatened plant, has been documented in wet prairie and wet-mesic prairie within the project boundary. This species is also known to occur in mesic prairie. Minnesota's endangered species law (*Minnesota Statutes*, section 84.0895) and associated rules (*Minnesota Rules*, part 6212.1800 to 6212.2300 and 6134) prohibit the taking of threatened or endangered species without a permit. **Please contact me if there will be any disturbance within native prairie.** Given the protected status of this species and the potential for it to still occur within the project boundary, a qualified surveyor (see attached list) will likely need to conduct a survey for this species prior to any disturbance within native prairie.

The purpose of the survey would be to reduce the likelihood of an inadvertent taking of a state-protected species and to inform the takings permit process if needed. **Please submit a survey proposal to me before any survey work is initiated**, as the DNR would like the opportunity to provide feedback on surveyor qualifications and survey protocol in order to prevent any potential project delays. Project planning should take into account that the botanical survey needs to be conducted during the appropriate time of the year, which may be limited (the best time to search for Sullivant's milkweed is when it is in flower from June through August, especially mid-July). Please visit the DNR Rare Species Guide at <http://www.dnr.state.mn.us/rsg/index.html> for more information on the biology, phenology, habitat use, and conservation measures of this rare plant.

## Rare Birds

### Henslow's Sparrow

As mentioned above, the Henslow's sparrow (*Ammodramus henslowii*), a state-listed endangered bird, was documented just outside the project boundary in the Bennett Wildlife Management Area. Henslow's sparrows use uncultivated grasslands and old fields with stalks for singing perches and with a substantial litter layer. Minnesota's endangered species law (*Minnesota Statutes*, section 84.0895) and associated rules (*Minnesota Rules*, part 6212.1800 to 6212.2300 and 6134) prohibit the taking of threatened or endangered species without a permit. **If any construction will occur within potential habitat during the breeding season**, the DNR requests that a qualified surveyor (see enclosed list) conduct a survey for Henslow's sparrows just prior to construction. The purpose of this survey would be to avoid an inadvertent takings of this species (e.g., nest with eggs or nestlings) during construction. **Please submit a survey proposal to me before any survey work is initiated**, as the DNR would like the opportunity to provide feedback on surveyor qualifications and survey protocol in order to prevent any potential project delays.

### Other Rare Birds

Please note that the Minnesota Biological Survey has not conducted surveys in this area in over a decade, so data on state-listed species in this area is incomplete. In particular, the Natural Heritage Information System (NHIS) is not current with respect to bald eagle (*Haliaeetus leucocephalus*) nest locations. Bald eagles are a state-listed species of special concern and are proposed to be delisted when the state list is next revised (likely this year). A minimum of 34 Species in Greatest Conservation (SGCN), as identified in Minnesota's State Wildlife Action Plan (<http://www.dnr.state.mn.us/cwcs/index.html>), are known to occur within the Minnesota River Prairie Subsection. Nineteen of these use the prairie habitats mentioned above. Please note that the NHIS does not track many of the SGCN. It should also be noted that the NHIS does not include records of migrating birds and that the Minnesota River Prairie Subsection is a major migratory corridor. The DNR looks forward to receiving the results of the pre-construction avian surveys and may have additional comments regarding rare birds at that time.

Wind farms can affect birds due to collision mortality, displacement due to disturbance, habitat fragmentation, and habitat loss. Even if collision mortality rates are low, the additional mortality may be significant for rare species. In addition, the results from some studies suggest that grassland birds are deterred from nesting in otherwise appropriate habitat by the presence of tall structures in the vicinity. As such, voluntary setbacks from prairie or other grasslands may be an appropriate measure to minimize disturbance to rare grassland birds.

Given the potential for a state-protected bird to occur and breed in the area and the potential for wind turbines to cause avian fatality, the DNR recommends pre-construction avian surveys. Depending on the pre-construction survey results and whether any turbines are located in prairie or other grassland, post-construction avian fatality monitoring may also be recommended.

## *Bat Congregation Areas and State-listed Bats*

The Natural Heritage Information System (NHIS) tracks bat maternity colonies and bat hibernacula plus some Anabat data, but this information is not current or exhaustive. Although there are no NHIS records for bats in the vicinity of the proposed project, all seven of Minnesota's bats can be found throughout Minnesota. The northern myotis (*Myotis septentrionalis*) and the tricolored bat (*Pipistrellus subflavus*) are both state-listed species of special concern. The big brown bat (*Eptesicus fuscus*) and the little brown bat (*Myotis lucifugus*) are currently proposed to become state-listed species of special concern when the state list is next revised (likely this year). The DNR looks forward to receiving the results of the bat acoustic monitoring and may have additional comments regarding state-listed bats at that time.

The Natural Heritage Information System (NHIS), a collection of databases that contains information about Minnesota's rare natural features, is maintained by the Division of Ecological and Water Resources, Department of Natural Resources. The NHIS is continually updated as new information becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant species, native plant communities, and other natural features. However, the NHIS is not an exhaustive inventory and thus does not represent all of the occurrences of rare features within the state. Therefore, ecologically significant features for which we have no records may exist within the project area. If additional information becomes available regarding rare features in the vicinity of the project, further review may be necessary.

The enclosed results include an Index Report and a Detailed Report of records in the Rare Features Database, the main database of the NHIS. To control the release of specific location information, which might result in the destruction of a rare feature, both reports are copyrighted.

The Index Report provides rare feature locations only to the nearest section, and may be reprinted, unaltered, in an environmental review document (e.g., EAW or EIS), municipal natural resource plan, or report compiled by your company for the project listed above. If you wish to reproduce the index report for any other purpose, please contact me to request written permission. **The Detailed Report is for your personal use only as it may include specific location information that is considered nonpublic data under *Minnesota Statutes*, section 84.0872, subd. 2. If you wish to reprint or publish the Detailed Report for any purpose, please contact me to request written permission.**

For environmental review purposes, the Natural Heritage letter and database reports are valid for one year; they are only valid for the project location (noted above) and the project description provided on the NHIS Data Request Form. Please contact me if project details change or if an updated review is needed.

Please note that locations of the gray wolf (*Canis lupus*), state-listed as special concern, and the Canada lynx (*Lynx canadensis*), federally-listed as threatened, are not currently tracked in the NHIS. As such, the Natural Heritage Review does not address these species.

Furthermore, the Natural Heritage Review does not constitute review or approval by the Department of Natural Resources as a whole. Instead, it identifies issues regarding known occurrences of rare features and potential effects to these rare features. Additional rare features for which we have no data may be present in the project area, or there may be other natural resource concerns associated with the proposed project. For these concerns, please contact your DNR Regional Environmental Assessment Ecologist (contact information available at [http://www.dnr.state.mn.us/eco/ereview/erp\\_regioncontacts.html](http://www.dnr.state.mn.us/eco/ereview/erp_regioncontacts.html)). Please be aware that additional site assessments or review may be required.

Thank you for consulting us on this matter, and for your interest in preserving Minnesota's rare natural resources. An invoice will be mailed to you under separate cover.

Sincerely,

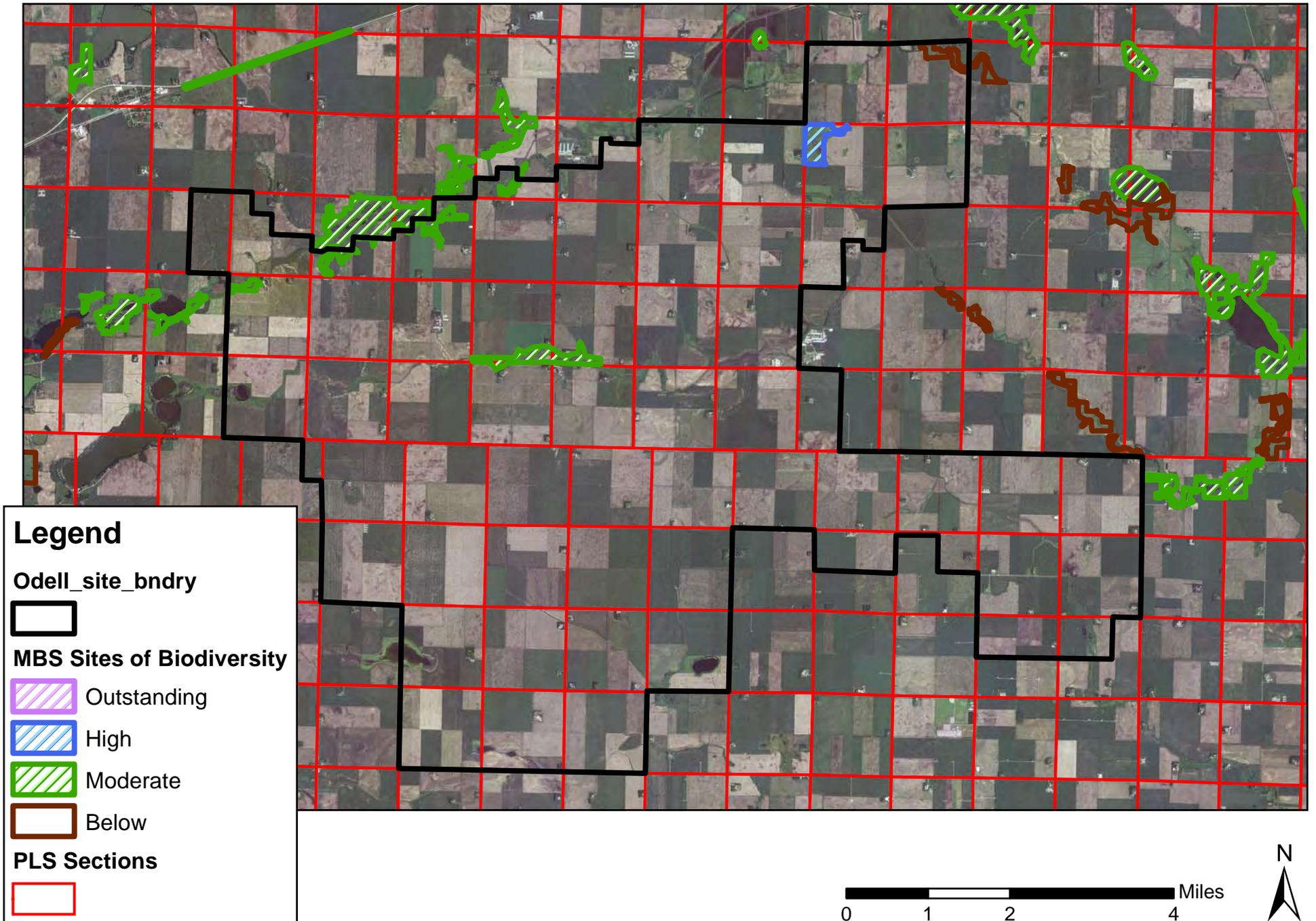


Lisa Joyal  
Endangered Species Review Coordinator

enc. Rare Features Database: Index and Detailed Report  
Rare Features Database Reports: An Explanation of Fields  
Map  
DNR List of Surveyors (Animals and Plants)

cc: Kevin Mixon, DNR  
Lisa Gelvin-Innvaer, DNR  
Jamie Schrenzel, DNR  
Doug Norris, DNR  
Deborah Pile, DOC  
Rich Davis, DOC

# Odell Wind



# NTIA Notification

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**Date:** August 08, 2012  
**Notification Type:** New  
**Project:** Odell  
**Counties:** Cottonwood, Jackson, Martin, and Watonwan  
**State:** Minnesota  
**Project Sponsor:** Geronimo Wind Energy, LLC –Patrick Smith (patrick@geronimowind.com)

**Turbine Description:**

Maximum Number of Turbine Locations: 125  
Turbine Hub Height AGL (meters): 80-100  
Turbine Rotor Diameter (meters): 80-120  
Maximum Blade Tip Height AGL (meters): 130-150

**Turbine Locations:** N/A

**Wind Farm Boundary Points:**

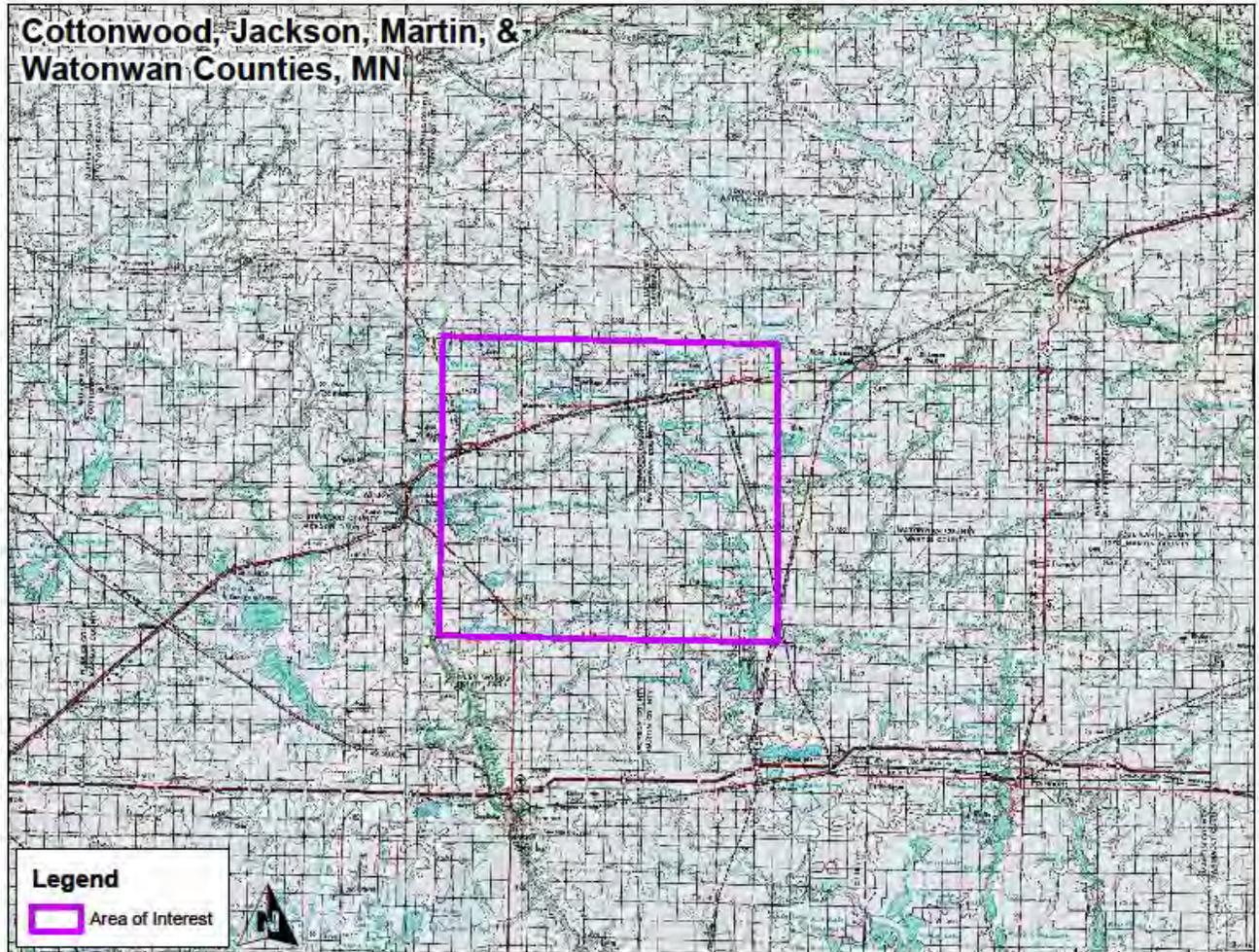
| Identifier | Latitude | Longitude |
|------------|----------|-----------|
| Pt1        | 43.994   | -95.08    |
| Pt2        | 43.993   | -94.72    |
| Pt3        | 43.761   | -95.077   |
| Pt4        | 43.762   | -94.714   |

**Maps (see following pages):**

# Map of Project Location



# Map of Project Area





**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Telecommunications and**  
**Information Administration**  
Washington, D.C. 20230

OCT - 3 2012

Ms. Heather Wayne  
Associate  
GERONIMO Wind Energy  
7650 Edinborough Way, Suite 725  
Edina, MN 55435

Re: Odell Project: Cottonwood, Jackson, Martin &  
Watonwan Counties, MN

Dear Ms. Wayne:

In response to your request on August 8, 2012, the National Telecommunications and Information Administration provided to the federal agencies represented in the Interdepartment Radio Advisory Committee (IRAC) the plans for the Odell Wind Energy Project, located in Cottonwood, Jackson, Martin and Watonwan Counties, Minnesota.

After a 45+ day period of review, no federal agencies identified any concerns regarding blockage of their radio frequency transmissions.

While the IRAC agencies did not identify any concerns regarding radio frequency blockage, this does not eliminate the need for the wind energy facilities to meet any other requirements specified by law related to these agencies. For example, this review by the IRAC does not eliminate any need that may exist to coordinate with the Federal Aviation Administration concerning flight obstruction.

Thank you for the opportunity to review these proposals.

Sincerely,

Edward M. Davison  
Deputy Associate Administrator  
Office of Spectrum Management

# History/Architecture Inventory

| PROPERTY NAME                                   | ADDRESS                                              | Twp | Range | Sec | Quarters | USGS          | Report | NRHP | CEF | DOE | Inventory Number |
|-------------------------------------------------|------------------------------------------------------|-----|-------|-----|----------|---------------|--------|------|-----|-----|------------------|
| <b>COUNTY: Cottonwood</b>                       |                                                      |     |       |     |          |               |        |      |     |     |                  |
| <b>CITY/TOWNSHIP: Bingham Lake</b>              |                                                      |     |       |     |          |               |        |      |     |     |                  |
| Holt and Wicklund General Store and Post Office | 271 8th St.                                          | 105 | 35    | 9   | SW-SE-SW | Bingham Lake  |        |      |     |     | CO-BLC-001       |
| commercial building                             | 8th St. & 2nd Ave.                                   | 105 | 35    | 9   | SW-SE-SW | Bingham Lake  |        |      |     |     | CO-BLC-002       |
| Queuli Store                                    |                                                      | 105 | 35    | 9   | SW-SE-SW | Bingham Lake  |        |      |     |     | CO-BLC-003       |
| post office and commercial building             |                                                      | 105 | 35    | 9   | SW-SE-SW | Bingham Lake  |        |      |     |     | CO-BLC-004       |
| wooden railroad watertower                      | xxx 1st Ave. S.                                      | 105 | 35    | 16  | NW-NW-NE | Bingham Lake  |        |      |     |     | CO-BLC-005       |
| District School No. 6 (razed)                   | 11th St. & 2nd Ave.                                  | 105 | 35    | 9   | E-SW-SE  | Bingham Lake  |        |      |     |     | CO-BLC-006       |
| Methodist Church                                | 10th St. & 2nd Ave.                                  | 105 | 35    | 9   | SW-SW-SE | Bingham Lake  |        |      |     |     | CO-BLC-007       |
| house                                           | 8xx 2nd Ave.                                         | 105 | 35    | 9   | SE-SW-SE | Bingham Lake  |        |      |     |     | CO-BLC-008       |
| house                                           | 8xx 2nd St.                                          | 105 | 35    | 16  | NE-NW-NE | Bingham Lake  |        |      |     |     | CO-BLC-009       |
| Lakeside Township Hall                          | off Co. Hwy. 2                                       | 105 | 35    | 9   | SE-SE-SW | Bingham Lake  |        |      |     |     | CO-BLC-010       |
| <b>CITY/TOWNSHIP: Mountain Lake Twp.</b>        |                                                      |     |       |     |          |               |        |      |     |     |                  |
| Mountain Lake Settlement                        | off Co. Hwy. 16                                      | 105 | 34    | 10  | SE       | Mountain Lake |        |      |     |     | CO-MLT-002       |
| <b>CITY/TOWNSHIP: Southbrook</b>                |                                                      |     |       |     |          |               |        |      |     |     |                  |
| Bridge No. 2773                                 | over Des Moines River; 12 M S. and 2 M W. of Storden | 105 | 38    | 36  |          | Heron Lake    |        |      |     |     | CO-SOB-001       |
| <b>CITY/TOWNSHIP: Springfield</b>               |                                                      |     |       |     |          |               |        |      |     |     |                  |
| Bridge No. 5990                                 | Carries CSAH 5 across East Fork of Des Moines Rvr    | 105 | 37    | 31  |          | Heron Lake    |        |      |     |     | CO-SPF-003       |

| PROPERTY NAME                          | ADDRESS                                                     | Twp | Range | Sec | Quarters | USGS           | Report   | NRHP | CEF | DOE | Inventory Number |
|----------------------------------------|-------------------------------------------------------------|-----|-------|-----|----------|----------------|----------|------|-----|-----|------------------|
| <b>COUNTY: Cottonwood</b>              |                                                             |     |       |     |          |                |          |      |     |     |                  |
| <b>CITY/TOWNSHIP: Springfield</b>      |                                                             |     |       |     |          |                |          |      |     |     |                  |
| Bridge No. L6604                       | carries unpaved TR scross Des Moines Rvr 11 M S. of Storden | 105 | 37    | 28  |          | Heron Lake NE  |          |      |     |     | CO-SPF-004       |
| <b>CITY/TOWNSHIP: Springfield Twp.</b> |                                                             |     |       |     |          |                |          |      |     |     |                  |
| Red, White, and Blue School House      | SE corner Co. Hwy. 5 & Co. Hwy. 15                          | 105 | 37    | 17  | NW-NW-NW | Heron Lake NE  |          |      |     |     | CO-SPF-001       |
| Pat's Grove (razed)                    | off Mn. Hwy. 62                                             | 105 | 37    | 28  | NE       | Heron Lake     |          |      |     |     | CO-SPF-002       |
| <b>COUNTY: Watonwan</b>                |                                                             |     |       |     |          |                |          |      |     |     |                  |
| <b>CITY/TOWNSHIP: Butterfield</b>      |                                                             |     |       |     |          |                |          |      |     |     |                  |
| The Farm Company                       | SE corner 2nd St. N. & Hubbard Ave.                         | 106 | 33    | 27  | NE-SW-NW | Butterfield    | WW-86-1H |      |     |     | WW-BTC-001       |
| First Lutheran Church                  | NW corner 2nd St. S. & Summit Ave.                          | 106 | 33    | 27  | SE-NW-SW | Butterfield    | WW-86-1H |      |     |     | WW-BTC-002       |
| house                                  | SE corner 5th St. N. & Chapman Ave.                         | 106 | 33    | 27  | SE-NW-NW | Butterfield    | WW-86-1H |      |     |     | WW-BTC-003       |
| Butterfield High School                | NW corner Hubbard Ave. 5th St. N.                           | 106 | 33    | 27  | NE-SE-NW | Butterfield    | WW-86-1H |      |     |     | WW-BTC-004       |
| watertower                             | SW corner Drake Ave. & 3rd St. N.                           | 106 | 33    | 27  | NW-SE-NW | Butterfield    | WW-86-1H |      |     |     | WW-BTC-005       |
| Rob's Service Station                  | NW corner Hubbard Ave. & 2nd St. N.                         | 106 | 33    | 27  | NE-SW-NW | Butterfield    | WW-86-1H |      |     |     | WW-BTC-006       |
| Butterfield Mennonite Church           | NE corner Chapman Ave. & 1st St. N.                         | 106 | 33    | 27  | SW-NW-NW | Butterfield    | WW-86-1H |      |     |     | WW-BTC-007       |
| <b>CITY/TOWNSHIP: Long Lake Twp.</b>   |                                                             |     |       |     |          |                |          |      |     |     |                  |
| Kansas Lake L.C.A. Church              | off Co. Hwy. 10                                             | 105 | 32    | 18  | NE-NW-NE | St. James West | WW-86-1H |      |     |     | WW-LLK-002       |
| <b>CITY/TOWNSHIP: Odin</b>             |                                                             |     |       |     |          |                |          |      |     |     |                  |
| Farmers' Creamery                      | SW corner Cherry St. & 1st St.                              | 105 | 33    | 25  | SW-NE-SE | Trimont        | WW-86-1H |      |     |     | WW-ODC-001       |
| school                                 | xxx 1st St.                                                 | 105 | 33    | 25  | NW-NE-SE | Trimont        | WW-86-1H |      |     |     | WW-ODC-002       |

| PROPERTY NAME                   | ADDRESS                             | Twp | Range | Sec | Quarters | USGS             | Report   | NRHP | CEF | DOE | Inventory Number |
|---------------------------------|-------------------------------------|-----|-------|-----|----------|------------------|----------|------|-----|-----|------------------|
| <b>COUNTY: Watonwan</b>         |                                     |     |       |     |          |                  |          |      |     |     |                  |
| <b>CITY/TOWNSHIP: Odin</b>      |                                     |     |       |     |          |                  |          |      |     |     |                  |
| Zion Lutheran Church            | xxx Cherry St.                      | 105 | 33    | 25  | SE-NE-SE | Trimont          | WW-86-1H |      |     |     | WW-ODC-003       |
| house                           | off Co. Hwy. 19                     | 105 | 33    | 25  | SE-NE-SE | Trimont          | WW-86-1H |      |     |     | WW-ODC-004       |
| H. Nelson Building              | xxx Main St.                        | 105 | 33    | 25  | SW-NE-SE | Trimont          | WW-86-1H |      |     |     | WW-ODC-005       |
| Olson Implement                 |                                     | 105 | 33    | 25  | NW-SE-SE | Trimont          | WW-86-1H |      |     |     | WW-ODC-006       |
| Odin State Bank                 |                                     | 105 | 33    | 25  | SW-NE-SE | Trimont          | WW-86-1H |      |     |     | WW-ODC-007       |
| town hall                       |                                     | 105 | 33    | 25  | NW-SE-SE | Trimont          | WW-86-1H |      |     |     | WW-ODC-008       |
| <b>CITY/TOWNSHIP: Odin Twp.</b> |                                     |     |       |     |          |                  |          |      |     |     |                  |
| Olin Township Hall              | off Co. Hwy. 5                      | 105 | 33    | 27  | SE-SE-NE | Mountain Lake SE | WW-86-1H |      |     |     | WW-ODT-001       |
| <b>CITY/TOWNSHIP: St. James</b> |                                     |     |       |     |          |                  |          |      |     |     |                  |
| Watonwan County Fairgrounds     | SE corner 11th St. S. & 7th Ave. S. | 106 | 32    | 19  | NW       | St. James East   | WW-86-1H |      |     |     | WW-SJC-049       |

# Archaeological Site Locations

| Site Number               | Site Name        | Twp. | Range | Sec. | Quarter Sections                        | Acres | Phase | Site Description | Tradition     | Context                   | Reports  | NR  | CEF | DOE |
|---------------------------|------------------|------|-------|------|-----------------------------------------|-------|-------|------------------|---------------|---------------------------|----------|-----|-----|-----|
| <b>County: Cottonwood</b> |                  |      |       |      |                                         |       |       |                  |               |                           |          |     |     |     |
| 21CO0001                  | Mountain Lake    | 105  | 34    | 2    | S-NE-SE-SW,<br>E-SW-SE-SW,              | 20    | 3     | AS               | W-1,          | A-1,<br>FL-1,<br>LB-1,Oa- | CO-76-02 | Yes |     |     |
|                           | Mountain Lake    | 105  | 34    | 2    | S-NE-SE-SW,<br>E-SW-SE-SW,              | 20    | 3     | AS               | W-1,          | A-1,<br>FL-1,<br>LB-1,Oa- | CO-76-01 | Yes |     |     |
|                           | Mountain Lake    | 105  | 34    | 2    | S-NE-SE-SW,<br>E-SW-SE-SW,              | 20    | 3     | AS               | W-1,          | A-1,<br>FL-1,<br>LB-1,Oa- | CO-62-01 | Yes |     |     |
|                           | Mountain Lake    | 105  | 34    | 11   | NE-NE-NW,<br>NE-NW-NE-NW,<br>W-NW-NW-NE | 20    | 3     | AS               | W-1,          | A-1,<br>FL-1,<br>LB-1,Oa- | CO-76-02 | Yes |     |     |
|                           | Mountain Lake    | 105  | 34    | 11   | NE-NE-NW,<br>NE-NW-NE-NW,<br>W-NW-NW-NE | 20    | 3     | AS               | W-1,          | A-1,<br>FL-1,<br>LB-1,Oa- | CO-76-01 | Yes |     |     |
|                           | Mountain Lake    | 105  | 34    | 11   | NE-NE-NW,<br>NE-NW-NE-NW,<br>W-NW-NW-NE | 20    | 3     | AS               | W-1,          | A-1,<br>FL-1,<br>LB-1,Oa- | CO-62-01 | Yes |     |     |
| 21CO0002                  | Franz            | 105  | 34    | 10   | E-SE-SW, W-SW-SE                        | 10    | 3     | LS               | A-1           | A-1                       | CO-76-02 |     |     |     |
| 21CO0004                  | Talcott          | 105  | 38    | 8    | SW-SW-SW                                | 16    | 1     | LS               | PL-1,<br>W-1, | PL-1,<br>LW-1             |          |     |     |     |
|                           | Talcott          | 105  | 38    | 17   | N-NW-NW                                 | 16    | 1     | LS               | PL-1,<br>W-1, | PL-1,<br>LW-1             |          |     |     |     |
| 21CO0041                  | Pat's Grove      | 105  | 37    | 28   | NE-NW-NW                                | 4     | 8     | SR,AS,LS         |               | RA-1                      |          |     |     |     |
| <b>County: Watonwan</b>   |                  |      |       |      |                                         |       |       |                  |               |                           |          |     |     |     |
| 21WW0015                  | Butterfield Lake | 106  | 33    | 28   | W-NW-NE                                 | 1     | 1     | LS               |               |                           |          |     |     |     |

**Swenson, Kristen**

---

**From:** Patrick Smith  
**Sent:** Friday, June 19, 2009 11:26 AM  
**To:** kelly.graggjohnson@mnhs.org  
**Subject:** Odell Wind Farm - MNHS Review  
**Attachments:** Odell\_MNHSRequest06112009.pdf; OdellSiteMap.jpg

Dear Ms. Gragg-Johnson,

Attached is a letter and site map pertaining to Geronimo Wind Energy's Ellendale Wind Farm,

Please contact me if you have any questions, we appreciate your assistance in this matter.

Sincerely,

Patrick Smith  
Environmental Specialist

Geronimo Wind Energy  
5050 Lincoln Dr. Suite 420  
Edina MN 55436  
Phone: 952-988-9000  
Fax: 952-988-9001



June 11, 2009

Kelly Gragg-Johnson  
Review and Compliance Office  
Minnesota State Historic Preservation Office  
345 Kellogg Boulevard West  
St. Paul, MN 55102-1906  
kelly.graggjohnson@mnhs.org.

RE: Geronimo Wind Energy's Odell Wind Project in Cottonwood County, Minnesota

Dear Ms. Gragg-Johnson,

Geronimo Wind Energy (GWE) is proposing the Odell Wind Project in Cottonwood County, Minnesota. GWE requests your review of the Odell Wind Project to identify potential impacts and any permits that the project might require. GWE is applying to the Minnesota Public Utilities Commission for a Large Wind Energy Conversion System (LWECS) Site Permit (MN Rules Chapter 7836) in 2009. This request is pursuant to PUC rules, the requirements of the Minnesota Historic Sites Act and the Minnesota Field Archaeology Act. This undertaking does not involve federal funding or permitting and is not subject to federal historic preservation regulations.

The proposed project is located in Cottonwood County, Minnesota and will be up to 200 megawatts (MW) in size, consisting of up to 133 wind turbine generators. GWE has not made a final selection on turbines for the project and proposes to permit the project for a range in turbine sizes from 1.5 to 3.0 MW. Associated facilities include gravel access roads to turbines, underground and overhead 34.5 kilovolt (kV) electrical collection system, substation, operations and maintenance (O&M) building, and two permanent meteorological towers. Although turbine locations, access roads and electrical connections have not been determined at this time, the following table identifies sections within the proposed project boundary.

| County     | Township # | Range # | Sections                   |
|------------|------------|---------|----------------------------|
| Cottonwood | 105        | 34      | 14-17, 19-22, 26-29, 31-35 |
| Cottonwood | 105        | 35      | 24-26, 35, 36              |

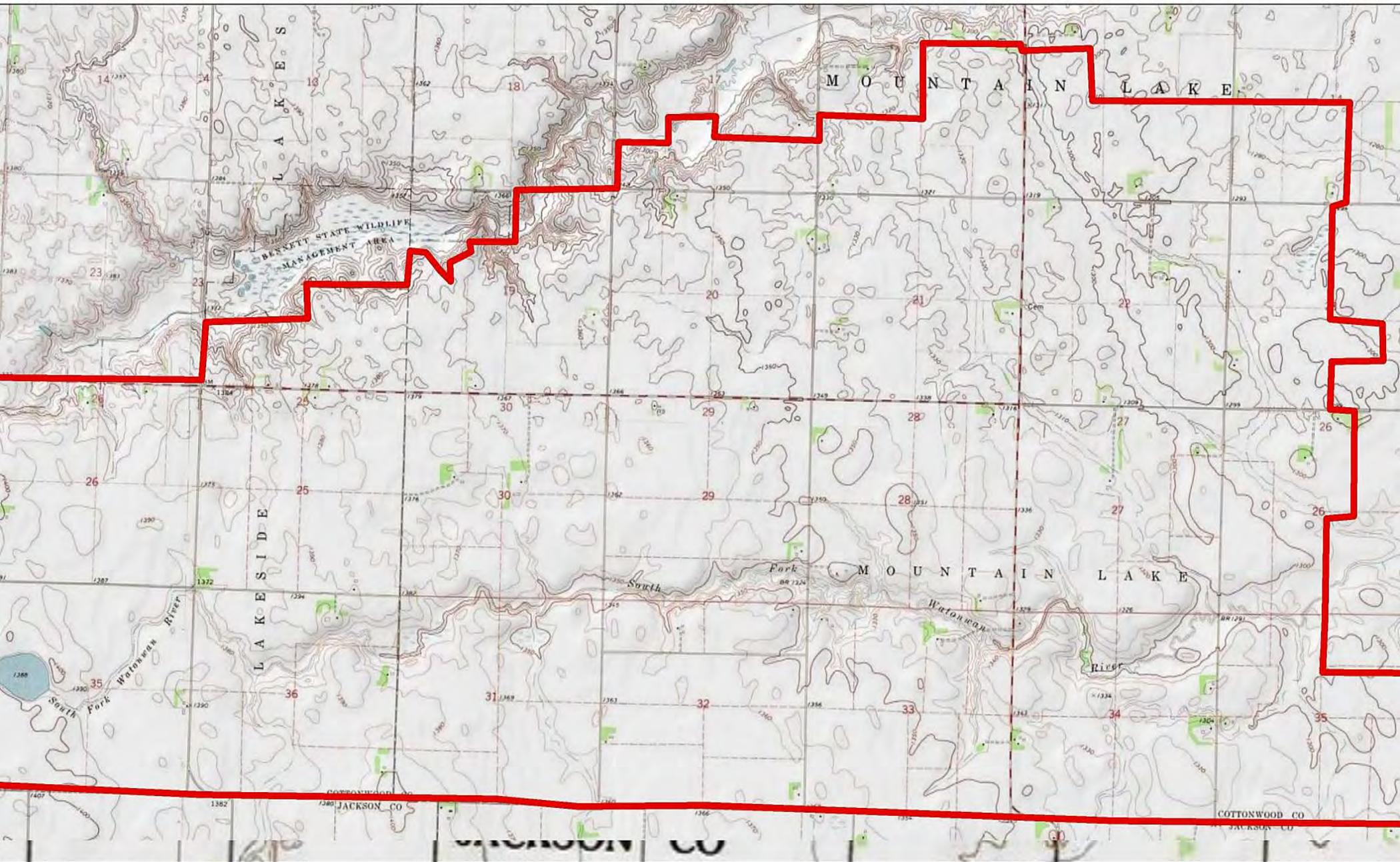
Your input will assist GWE in their review of this project. Enclosed is a project location map to facilitate your review. If you have any questions relating to this project, please contact me by phone at 952-988-9000 or by email at patrick@geronimowind.com.

Thank you for your assistance.

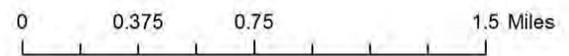
Sincerely,

Patrick Smith  
Environmental Specialist

Enclosure: Project Location Map



# Odell Wind Farm



July 17, 2009

Mr. Patrick Smith  
Environmental Specialist  
Geronimo Wind Energy  
5050 Lincoln Drive, #420  
Edina, MN 55436

RE: **Geronimo Wind Energy**  
Odell Wind Project  
SHPO Number: 2009-2529

Dear Mr. Smith:

Thank you for the opportunity to review and comment on the above project. It has been reviewed pursuant to the responsibilities given the Minnesota Historical Society by the Minnesota Historic Sites Act and the Minnesota Field Archaeology Act.

Due to the nature of the proposed project, we recommend that an archaeological survey be completed. The survey must meet the requirements of the Secretary of the Interior's Standards for Identification and Evaluation, and should include an evaluation of National Register eligibility for any properties that are identified. For your information, we have enclosed a list of consultants who have expressed an interest in undertaking such surveys.

If the project area can be documented as previously disturbed or previously surveyed, we will re-evaluate the need for survey. Previously disturbed areas are those where the naturally occurring post-glacial soils and sediments have been recently removed. Any previous survey work must meet contemporary standards.

Please note that this comment letter does not address the requirements of Section 106 of the National Historic Preservation Act of 1966 and 36CFR800, procedures of the Advisory Council on Historic Preservation for the protection of historic properties. If this project is considered for federal assistance, or requires a federal license or permit, it should be submitted to our office with reference to the appropriate federal agency.

If you have any questions on our review of this project, please contact me at (651) 259-3456.

Sincerely,



Dennis A. Gimmestad  
Government Programs and Compliance Officer

Enclosure: List of Consultants



May 24, 2013

Ms. Mary Ann Heidemann  
 Minnesota Historical Society  
 345 Kellogg Boulevard West  
 Saint Paul, MN 55102

RE: Odell Wind Farm and Transmission Line in Southwest Minnesota

Dear Ms. Mary Ann Heidemann:

Odell Wind Farm, LLC (Odell Wind Farm), a wholly owned subsidiary of Geronimo Wind Energy, LLC, is gathering information and requesting agency comments for a proposed wind energy project and transmission line in Cottonwood, Jackson, Martin, and Watonwan Counties, Minnesota. The proposed project will be up to 200 MW.

Odell Wind Farm intends to submit a Site Permit Application for a Large Wind Energy Conversion System and a Route Permit Application for a High Voltage Transmission Line to the Minnesota Public Utilities Commission (PUC). The Odell Wind Farm will include wind turbines and associated facilities, including gravel access roads, an underground collector system, two substations, meteorological monitoring stations, an operations and maintenance facility, and a 115 kV transmission line.

Turbine locations, access roads and electrical connections have not been finalized at this time. Table 1 provides the sections of land Odell Wind Farm is evaluating for siting the wind energy project.

**Table 1 –Sections within the Odell Wind Farm Project Boundary**

| County Name | Township Name | Township | Range | Sections                                                                                   |
|-------------|---------------|----------|-------|--------------------------------------------------------------------------------------------|
| Cottonwood  | Lakeside      | 105N     | 35W   | 22, 23, 24, 25, 26, 35, 36                                                                 |
| Cottonwood  | Mountain Lake | 105N     | 34W   | 12, 13, 14, 15, 16, 17, 19, 20, 21, 22, 23, 24, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36 |
| Jackson     | Christiana    | 104N     | 35W   | 1, 2, 12                                                                                   |
| Jackson     | Kimball       | 104N     | 34W   | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 17, 18, 19, 20, 21                              |
| Martin      | Cedar         | 104N     | 33W   | 4, 5, 6, 7, 8, 9, 16, 17                                                                   |
| Watonwan    | Odin          | 105N     | 33W   | 7, 18                                                                                      |

Similarly, the transmission line route is not yet finalized. Table 2 identifies the land in the transmission route evaluation area, which is the area currently being considered for the transmission route and possible alternative routes.

**Table 2 –Sections Included in the Transmission Route Evaluation Area\***

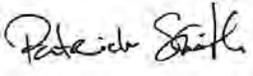
| County Name                                                                                                                                                | Township Name | Township | Range | Sections                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------|-------|--------------------------|
| Cottonwood                                                                                                                                                 | Mountain Lake | 105N     | 34W   | 32, 33, 34, 35, 36       |
| Jackson                                                                                                                                                    | Kimball       | 104N     | 34W   | 1, 2, 3, 4, 5            |
| Martin                                                                                                                                                     | Cedar         | 104N     | 33W   | 4, 5, 6, 7, 8, 9, 16, 17 |
| *The Sections in Table 2 are also included in Table 1 because the prospective transmission routes are located within the current Odell Wind Farm boundary. |               |          |       |                          |

To facilitate your review, we have enclosed a map of Odell Wind Farm’s location and project boundary. The transmission route evaluation area is also indicated on the map.

We welcome any comments the Minnesota Historical Society may have at this time or throughout the permit application process. Any comments provided will be incorporated into the PUC review process for the Odell Wind Farm.

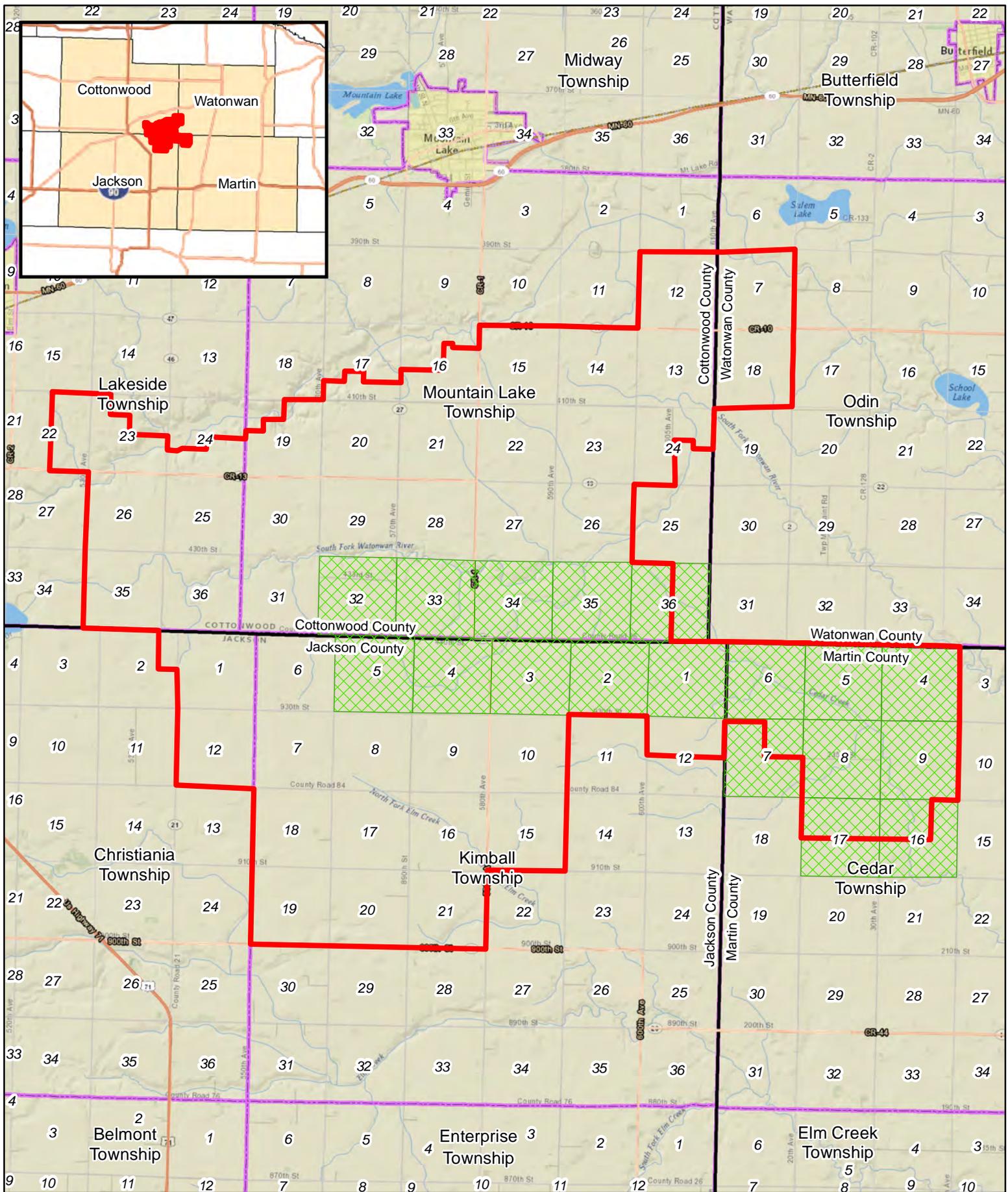
If you require further information or have questions regarding this matter, please contact me at 952-988-9000 or at Patrick@geronimoenergy.com

Sincerely,

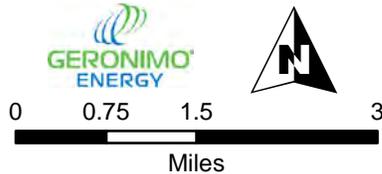


Patrick Smith  
 Director of Environmental Planning

Enclosures:  
 Odell Wind Farm Project Location Map



- Odell Footprint
- Route Evaluation Area
- County
- County Subdivisions



# Project Location Map



May 24, 2013

Mr. Scott Anfinson  
 Minnesota Office of the State Archaeologist  
 Fort Snelling History Center  
 Saint Paul, MN 55111

RE: Odell Wind Farm and Transmission Line in Southwest Minnesota

Dear Mr. Scott Anfinson:

Odell Wind Farm, LLC (Odell Wind Farm), a wholly owned subsidiary of Geronimo Wind Energy, LLC, is gathering information and requesting agency comments for a proposed wind energy project and transmission line in Cottonwood, Jackson, Martin, and Watonwan Counties, Minnesota. The proposed project will be up to 200 MW.

Odell Wind Farm intends to submit a Site Permit Application for a Large Wind Energy Conversion System and a Route Permit Application for a High Voltage Transmission Line to the Minnesota Public Utilities Commission (PUC). The Odell Wind Farm will include wind turbines and associated facilities, including gravel access roads, an underground collector system, two substations, meteorological monitoring stations, an operations and maintenance facility, and a 115 kV transmission line.

Turbine locations, access roads and electrical connections have not been finalized at this time. Table 1 provides the sections of land Odell Wind Farm is evaluating for siting the wind energy project.

**Table 1 –Sections within the Odell Wind Farm Project Boundary**

| County Name | Township Name | Township | Range | Sections                                                                                   |
|-------------|---------------|----------|-------|--------------------------------------------------------------------------------------------|
| Cottonwood  | Lakeside      | 105N     | 35W   | 22, 23, 24, 25, 26, 35, 36                                                                 |
| Cottonwood  | Mountain Lake | 105N     | 34W   | 12, 13, 14, 15, 16, 17, 19, 20, 21, 22, 23, 24, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36 |
| Jackson     | Christiana    | 104N     | 35W   | 1, 2, 12                                                                                   |
| Jackson     | Kimball       | 104N     | 34W   | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 17, 18, 19, 20, 21                              |
| Martin      | Cedar         | 104N     | 33W   | 4, 5, 6, 7, 8, 9, 16, 17                                                                   |
| Watonwan    | Odin          | 105N     | 33W   | 7, 18                                                                                      |

Similarly, the transmission line route is not yet finalized. Table 2 identifies the land in the transmission route evaluation area, which is the area currently being considered for the transmission route and possible alternative routes.

**Table 2 –Sections Included in the Transmission Route Evaluation Area\***

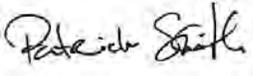
| County Name                                                                                                                                                | Township Name | Township | Range | Sections                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------|-------|--------------------------|
| Cottonwood                                                                                                                                                 | Mountain Lake | 105N     | 34W   | 32, 33, 34, 35, 36       |
| Jackson                                                                                                                                                    | Kimball       | 104N     | 34W   | 1, 2, 3, 4, 5            |
| Martin                                                                                                                                                     | Cedar         | 104N     | 33W   | 4, 5, 6, 7, 8, 9, 16, 17 |
| *The Sections in Table 2 are also included in Table 1 because the prospective transmission routes are located within the current Odell Wind Farm boundary. |               |          |       |                          |

To facilitate your review, we have enclosed a map of Odell Wind Farm’s location and project boundary. The transmission route evaluation area is also indicated on the map.

We welcome any comments the Minnesota Office of the State Archaeologist may have at this time or throughout the permit application process. Any comments provided will be incorporated into the PUC review process for the Odell Wind Farm.

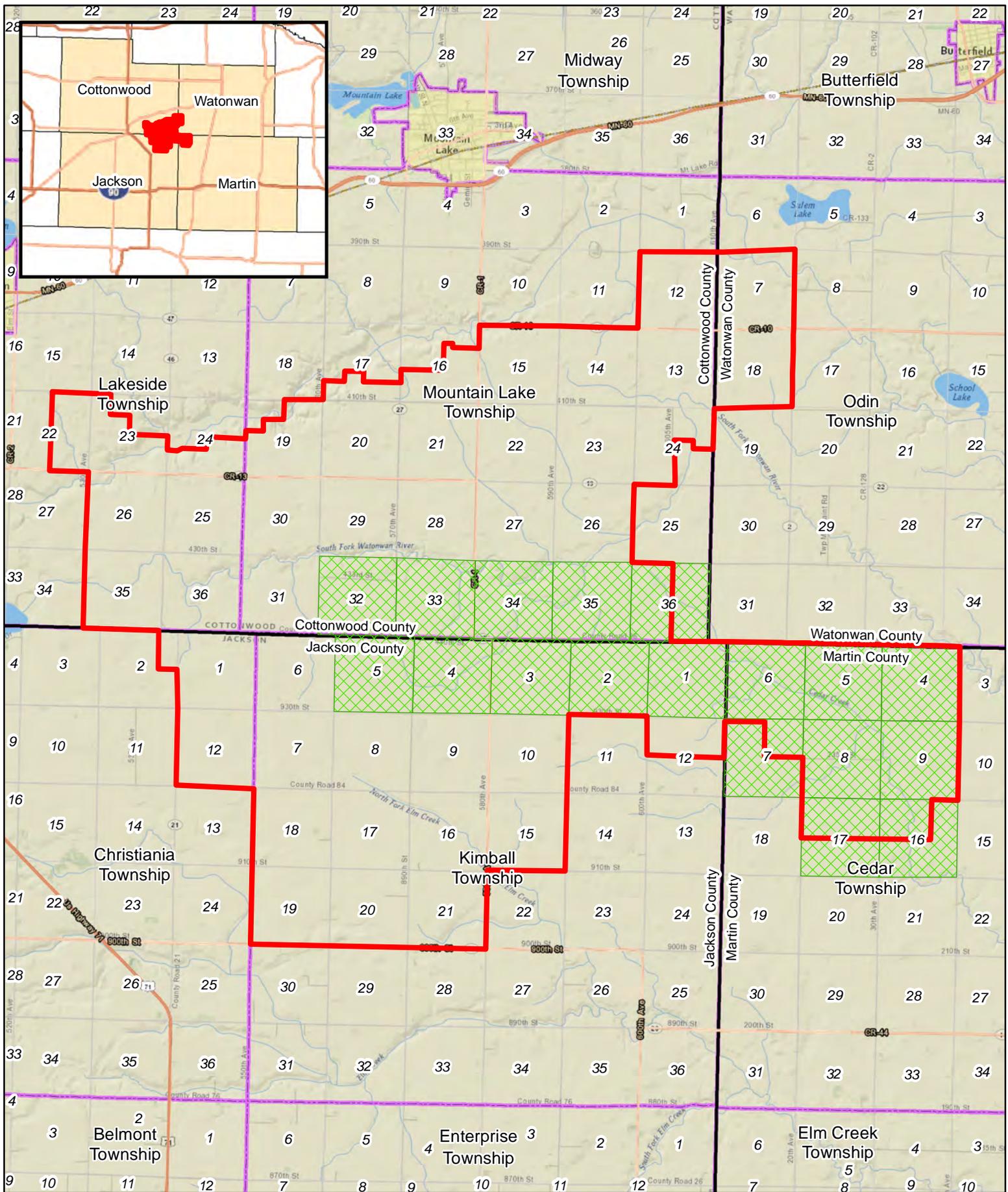
If you require further information or have questions regarding this matter, please contact me at 952-988-9000 or at Patrick@geronimoenergy.com

Sincerely,

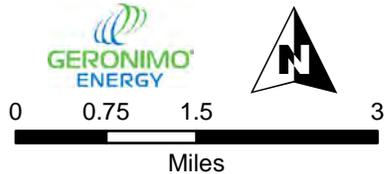


Patrick Smith  
 Director of Environmental Planning

Enclosures:  
 Odell Wind Farm Project Location Map



- Odell Footprint
- Route Evaluation Area
- County
- County Subdivisions



# Project Location Map



May 24, 2013

Mr. Tom Cinadr  
 State Historic Preservation Office  
 345 Kellogg Boulevard West  
 Saint Paul, MN 55102

RE: Odell Wind Farm and Transmission Line in Southwest Minnesota

Dear Mr. Tom Cinadr:

Odell Wind Farm, LLC (Odell Wind Farm), a wholly owned subsidiary of Geronimo Wind Energy, LLC, is gathering information and requesting agency comments for a proposed wind energy project and transmission line in Cottonwood, Jackson, Martin, and Watonwan Counties, Minnesota. The proposed project will be up to 200 MW.

Odell Wind Farm intends to submit a Site Permit Application for a Large Wind Energy Conversion System and a Route Permit Application for a High Voltage Transmission Line to the Minnesota Public Utilities Commission (PUC). The Odell Wind Farm will include wind turbines and associated facilities, including gravel access roads, an underground collector system, two substations, meteorological monitoring stations, an operations and maintenance facility, and a 115 kV transmission line.

Turbine locations, access roads and electrical connections have not been finalized at this time. Table 1 provides the sections of land Odell Wind Farm is evaluating for siting the wind energy project.

**Table 1 –Sections within the Odell Wind Farm Project Boundary**

| County Name | Township Name | Township | Range | Sections                                                                                   |
|-------------|---------------|----------|-------|--------------------------------------------------------------------------------------------|
| Cottonwood  | Lakeside      | 105N     | 35W   | 22, 23, 24, 25, 26, 35, 36                                                                 |
| Cottonwood  | Mountain Lake | 105N     | 34W   | 12, 13, 14, 15, 16, 17, 19, 20, 21, 22, 23, 24, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36 |
| Jackson     | Christiana    | 104N     | 35W   | 1, 2, 12                                                                                   |
| Jackson     | Kimball       | 104N     | 34W   | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 17, 18, 19, 20, 21                              |
| Martin      | Cedar         | 104N     | 33W   | 4, 5, 6, 7, 8, 9, 16, 17                                                                   |
| Watonwan    | Odin          | 105N     | 33W   | 7, 18                                                                                      |

Similarly, the transmission line route is not yet finalized. Table 2 identifies the land in the transmission route evaluation area, which is the area currently being considered for the transmission route and possible alternative routes.

**Table 2 –Sections Included in the Transmission Route Evaluation Area\***

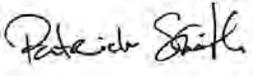
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| Cottonwood                                                                                                                                                 | Mountain Lake | 105N     | 34W   | 32, 33, 34, 35, 36       |
| Jackson                                                                                                                                                    | Kimball       | 104N     | 34W   | 1, 2, 3, 4, 5            |
| Martin                                                                                                                                                     | Cedar         | 104N     | 33W   | 4, 5, 6, 7, 8, 9, 16, 17 |
| *The Sections in Table 2 are also included in Table 1 because the prospective transmission routes are located within the current Odell Wind Farm boundary. |               |          |       |                          |

To facilitate your review, we have enclosed a map of Odell Wind Farm’s location and project boundary. The transmission route evaluation area is also indicated on the map.

We welcome any comments the State Historic Preservation Office may have at this time or throughout the permit application process. Any comments provided will be incorporated into the PUC review process for the Odell Wind Farm.

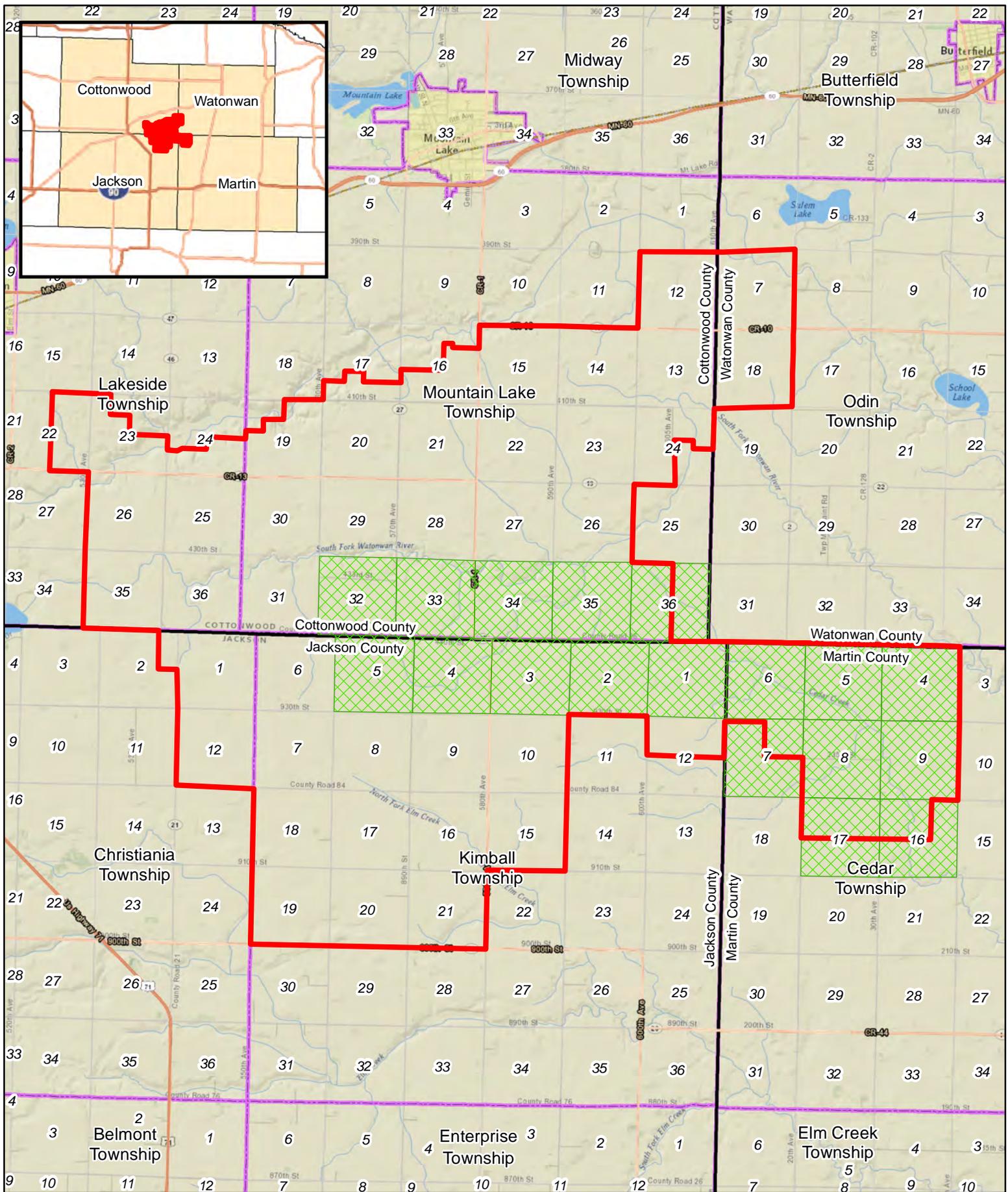
If you require further information or have questions regarding this matter, please contact me at 952-988-9000 or at Patrick@geronimoenergy.com

Sincerely,

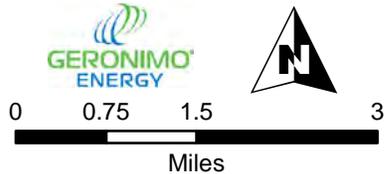


Patrick Smith  
 Director of Environmental Planning

Enclosures:  
 Odell Wind Farm Project Location Map



- Odell Footprint
- Route Evaluation Area
- County
- County Subdivisions



# Project Location Map



May 24, 2013

Jayne I. Trusty  
 South West Regional Development Commission  
 2401 Broadway Avenue, Suite 1  
 Slayton, MN 56172

RE: Odell Wind Farm and Transmission Line in Southwest Minnesota

Dear Jayme I. Trusty:

Odell Wind Farm, LLC (Odell Wind Farm), a wholly owned subsidiary of Geronimo Wind Energy, LLC, is gathering information and requesting agency comments for a proposed wind energy project and transmission line in Cottonwood, Jackson, Martin, and Watonwan Counties, Minnesota. The proposed project will be up to 200 MW.

Odell Wind Farm intends to submit a Site Permit Application for a Large Wind Energy Conversion System and a Route Permit Application for a High Voltage Transmission Line to the Minnesota Public Utilities Commission (PUC). The Odell Wind Farm will include wind turbines and associated facilities, including gravel access roads, an underground collector system, two substations, meteorological monitoring stations, an operations and maintenance facility, and a 115 kV transmission line.

Turbine locations, access roads and electrical connections have not been finalized at this time. Table 1 provides the sections of land Odell Wind Farm is evaluating for siting the wind energy project.

**Table 1 –Sections within the Odell Wind Farm Project Boundary**

| County Name | Township Name | Township | Range | Sections                                                                                   |
|-------------|---------------|----------|-------|--------------------------------------------------------------------------------------------|
| Cottonwood  | Lakeside      | 105N     | 35W   | 22, 23, 24, 25, 26, 35, 36                                                                 |
| Cottonwood  | Mountain Lake | 105N     | 34W   | 12, 13, 14, 15, 16, 17, 19, 20, 21, 22, 23, 24, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36 |
| Jackson     | Christiana    | 104N     | 35W   | 1, 2, 12                                                                                   |
| Jackson     | Kimball       | 104N     | 34W   | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 17, 18, 19, 20, 21                              |
| Martin      | Cedar         | 104N     | 33W   | 4, 5, 6, 7, 8, 9, 16, 17                                                                   |
| Watonwan    | Odin          | 105N     | 33W   | 7, 18                                                                                      |

Similarly, the transmission line route is not yet finalized. Table 2 identifies the land in the transmission route evaluation area, which is the area currently being considered for the transmission route and possible alternative routes.

**Table 2 –Sections Included in the Transmission Route Evaluation Area\***

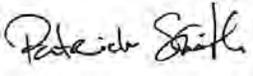
| County Name                                                                                                                                                | Township Name | Township | Range | Sections                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------|-------|--------------------------|
| Cottonwood                                                                                                                                                 | Mountain Lake | 105N     | 34W   | 32, 33, 34, 35, 36       |
| Jackson                                                                                                                                                    | Kimball       | 104N     | 34W   | 1, 2, 3, 4, 5            |
| Martin                                                                                                                                                     | Cedar         | 104N     | 33W   | 4, 5, 6, 7, 8, 9, 16, 17 |
| *The Sections in Table 2 are also included in Table 1 because the prospective transmission routes are located within the current Odell Wind Farm boundary. |               |          |       |                          |

To facilitate your review, we have enclosed a map of Odell Wind Farm’s location and project boundary. The transmission route evaluation area is also indicated on the map.

We welcome any comments the South West Regional Development Commission may have at this time or throughout the permit application process. Any comments provided will be incorporated into the PUC review process for the Odell Wind Farm.

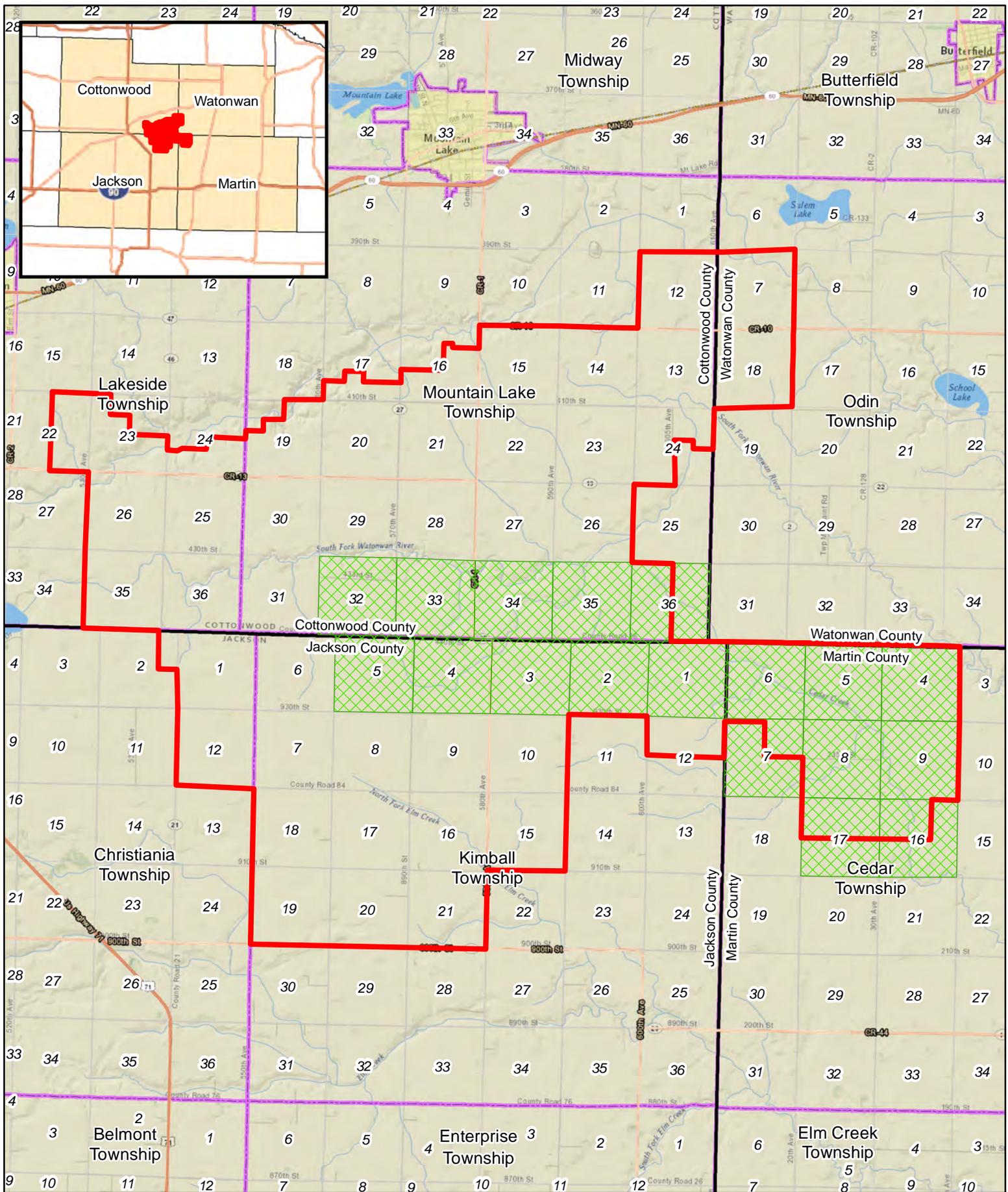
If you require further information or have questions regarding this matter, please contact me at 952-988-9000 or at Patrick@geronimoenergy.com

Sincerely,

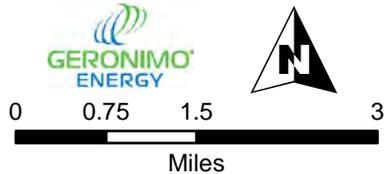


Patrick Smith  
 Director of Environmental Planning

Enclosures:  
 Odell Wind Farm Project Location Map



- Odell Footprint
- Route Evaluation Area
- County
- County Subdivisions



# Project Location Map



# Southwest Regional Development Commission

*Serving the Counties of:*

Cottonwood • Jackson • Lincoln • Lyon • Murray • Nobles • Pipestone • Redwood • Rock

2401 Broadway Avenue, Suite 1  
Slayton, MN 56172-1142  
(507) 836-8547  
Fax: (507) 836-8866  
E-Mail: [srdc@swrdc.org](mailto:srdc@swrdc.org) / Website: [www.swrdc.org](http://www.swrdc.org)

Miron Carney, Chairman  
Eloise Hauschild, Vice-Chairman  
Bob Jarchow, Treasurer  
Sharon Hollatz, Secretary

June 13, 2013

TO: Patrick Smith, Director of Environmental Planning, [Patrick@geronimoenergy.com](mailto:Patrick@geronimoenergy.com)

FR: Annette Bair, SRDC Physical Development Director, [phydev@swrdc.org](mailto:phydev@swrdc.org)

RE: Response to a letter from Odell Wind Farm, LLC, a subsidiary of Geronimo Wind Energy, LLC regarding a proposed Wind Farm and Transmission Line in Southwest Minnesota

Overview of project for the SRDC Board: Odell Wind Farm is requesting agency comments for a proposed wind energy project (up to 200 MW) in Cottonwood, Jackson, Martin, and Watonwan counties and Transmission Line (115 kV) in Cottonwood, Jackson, and Martin Counties and associated facilities. Locations of the Transmission line and tower sites are not currently known.

- The Developer has been in contact, with a minimum of a letter requesting input of the two projects. In Cottonwood and Jackson County there have been meetings / discussion regarding the transmission lines and towers; Jackson County recently held a CUP hearing for a Met tower.
- The Developer met last fall with at least one of the Martin County Commissioners. Watonwan County is aware of the project but would like more details.

Comments for Odell Wind Farm, LLC: The Southwest Region Development Commission appreciates the opportunity to provide input into the proposed project process.

- This project is unique in that the footprint for the wind project is in four counties and the transmission line in three. The State encourages a Development Agreement (at least for the wind farm component) when permitting / constructing the wind turbines. While it may be difficult to coordinate a single Development Agreement with the four (or three) counties, the SRDC would recommend holding a joint meeting with the County Engineers and Zoning Administrators to work out the impact of the project. For example, haul routes in more than one county, addressing the location of the transmission lines once a route is sited, etc.

(continued)

- Of environmental concern, would be to close proximity of Mountain County Park, a 24 acre Park located 2 miles SE of Mountain Lake city, and includes an island in the center of a dry lake bed, once the largest lake in Cottonwood County. The Park is on the National Register of Historic sites as a result of a 1976 Archaeological survey where artifacts and cultural data from inhabitants dating back to 500 BC were found. The site is the oldest human dwelling ever found in Minnesota. The island top is in primitive natural condition and supports wildlife and birds of many species. It is utilized by the Cottonwood County Bird Club throughout the year for bird counts.
- Geronimo was recently involved with the Wind Project in Rock and Pipestone Counties where following the construction of the Wind Farm and Transmission Line, a community fund was set up to provide local grants. Will this project be doing something similar?

Thank you for this opportunity to provide comment regarding the proposed project.

Cc: Cottonwood, Jackson, Martin, and Watonwan County Engineers, Zoning Administrators,  
Rural MN Energy Board Members, and Region Nine Development Commission.



Blue Earth  
Jackson  
Murray  
Rock

Brown  
Lincoln  
Nobles  
Sibley

Cottonwood  
Lyon  
Pipestone  
Watsonwan

Faribault  
Martin  
Renville

Freeborn  
Mower  
Redwood

Tom Warmka, Chair  
Ken Hoime, Secretary

Will Purvis, Vice Chair  
Larry Hansen, Treasurer

2401 Broadway Ave Suite 1, Slayton, MN 56172

Phone 507/836-1631 FAX 507/836-8866

Email: [phydev@swrdc.org](mailto:phydev@swrdc.org) website: <http://www.rmeb.org>

September 11, 2013

**Rural Minnesota Energy Board  
Monday September 23, 2013  
CRD Board Room 2401 Broadway Ave, Slayton, MN  
Agenda**

1. Call to Order at 1:00 PM
2. Pledge of Allegiance
3. Announcements
4. Introductions
5. Changes to the Agenda/Approval
6. Review / Approve Energy Board Minutes of July 19, 2013
7. Financial report - Treasurer Hansen
8. Sub committees Reports:
  - Legislative - all
  - PACE (Property Assessed Clean Energy) – Betsy Herding  
RMEB PACE RLF Committee: Gerald Magnus, Gene Metz, Will Purvis, Scott Sanders, Bob Fox,
9. Odell Wind Farm and Geronimo Solar (30 minutes) *confirmed*
10. Member Updates on Energy projects and issues
11. Updates on past tours
  - GEVO
  - Poet
12. Other Business and Reports
  - CERT update.
    - Steering Committee – thank retiring members of SW CERT, appoint an RMEB member to SW CERT
    - CERT Seed grants – applications due Oct 18<sup>th</sup>, Labor only
    - 5 projects moving forward (PACE, Community Solar, Education / YES! Teams, Energy on the On the farm )
13. New Business
14. Meeting Dates –November 25 Heating the Midwest with Biomass- *requested*  
*Please bring your calendars for 2014 meeting dates (usually 4<sup>th</sup> Mondays of odd months):*  
Jan 27, Mar 24, May (26<sup>th</sup> is Memorial Day – May 19 or June 1?), July 28, Sept 22, Nov 24.
15. Adjourn





May 24, 2013

Mr. Michael Setering  
 Dept. of the Army  
 180 East Fifth Street STE 700  
 Saint Paul, MN 55101-1678

RE: Odell Wind Farm and Transmission Line in Southwest Minnesota

Dear Mr. Michael Setering:

Odell Wind Farm, LLC (Odell Wind Farm), a wholly owned subsidiary of Geronimo Wind Energy, LLC, is gathering information and requesting agency comments for a proposed wind energy project and transmission line in Cottonwood, Jackson, Martin, and Watonwan Counties, Minnesota. The proposed project will be up to 200 MW.

Odell Wind Farm intends to submit a Site Permit Application for a Large Wind Energy Conversion System and a Route Permit Application for a High Voltage Transmission Line to the Minnesota Public Utilities Commission (PUC). The Odell Wind Farm will include wind turbines and associated facilities, including gravel access roads, an underground collector system, two substations, meteorological monitoring stations, an operations and maintenance facility, and a 115 kV transmission line.

Turbine locations, access roads and electrical connections have not been finalized at this time. Table 1 provides the sections of land Odell Wind Farm is evaluating for siting the wind energy project.

**Table 1 –Sections within the Odell Wind Farm Project Boundary**

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Similarly, the transmission line route is not yet finalized. Table 2 identifies the land in the transmission route evaluation area, which is the area currently being considered for the transmission route and possible alternative routes.

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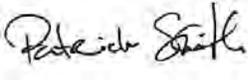
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| *The Sections in Table 2 are also included in Table 1 because the prospective transmission routes are located within the current Odell Wind Farm boundary. |               |          |       |                          |

To facilitate your review, we have enclosed a map of Odell Wind Farm’s location and project boundary. The transmission route evaluation area is also indicated on the map.

We welcome any comments the Dept. of the Army may have at this time or throughout the permit application process. Any comments provided will be incorporated into the PUC review process for the Odell Wind Farm.

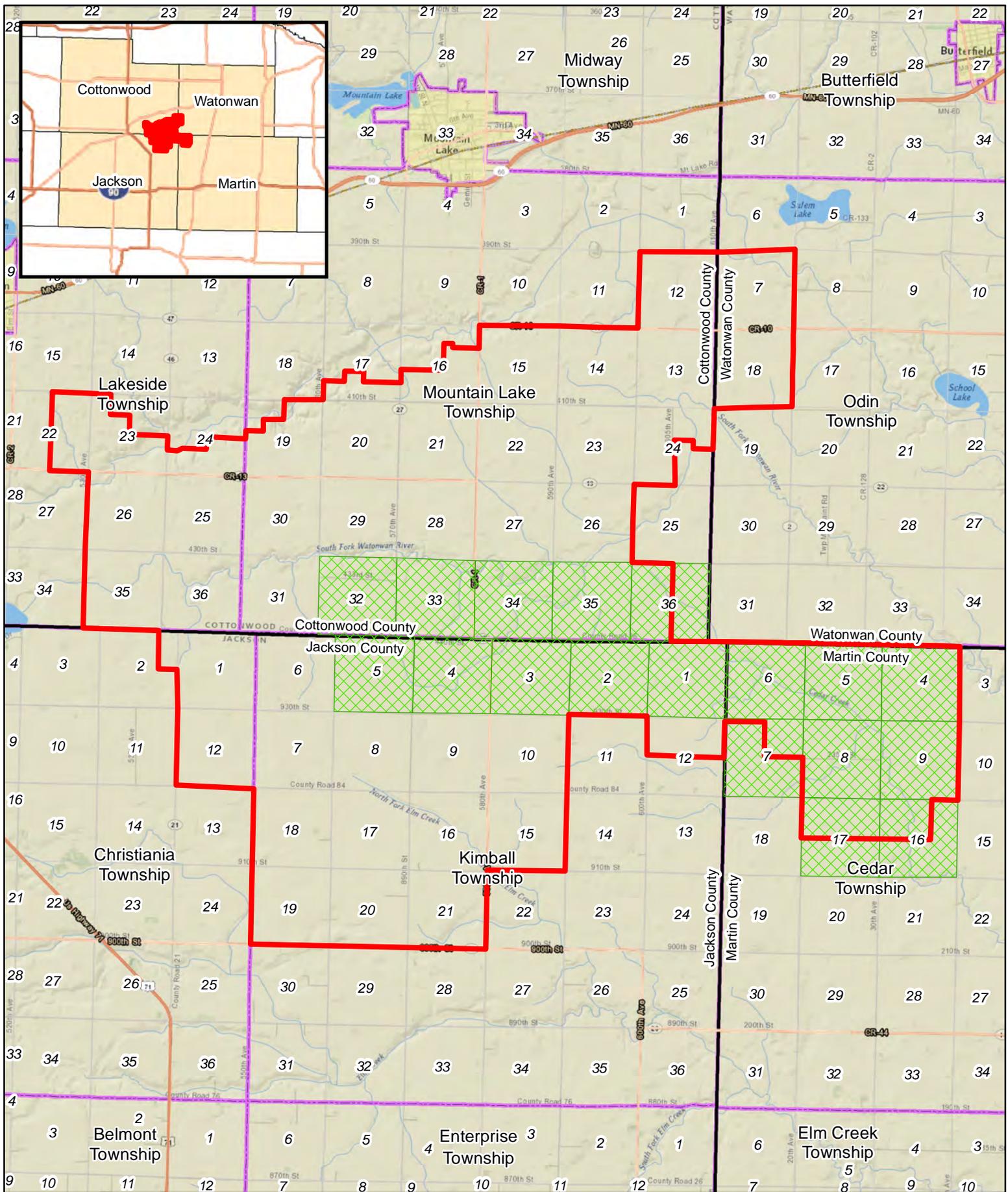
If you require further information or have questions regarding this matter, please contact me at 952-988-9000 or at Patrick@geronimoenergy.com

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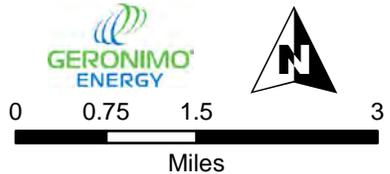


Patrick Smith  
 Director of Environmental Planning

Enclosures:  
 Odell Wind Farm Project Location Map



- Odell Footprint
- Route Evaluation Area
- County
- County Subdivisions



# Project Location Map



REPLY TO  
ATTENTION

**DEPARTMENT OF THE ARMY**  
ST. PAUL DISTRICT, CORPS OF ENGINEERS  
180 FIFTH STREET EAST, SUITE 700  
ST. PAUL MINNESOTA 55101-1678

**SEP 16 2013**

Operations  
Regulatory (2013-02005-MTS)

Mr. Patrick Smith  
Geronimo Wind Energy, LLC  
7650 Edinborough Way, Suite 725  
Edina, Minnesota 55435

Dear Mr. Smith:

We have received your letter, dated May 24, 2013, requesting agency comments for a proposed wind energy and transmission line project located in portions of Cottonwood, Jackson, Martin and Watonwan Counties, Minnesota.

Based on the limited information provided with your letter, it is unknown whether a Department of the Army (DA) permit would be required for your proposal. Please consider the following information as it may apply to your proposed project.

If the proposal includes activities in navigable waters of the United States, it may be subject to the Corps of Engineers' jurisdiction under Section 10 of the Rivers and Harbors Act of 1899 (Section 10). Section 10 prohibits the construction, excavation, or deposition of materials in, over, or under navigable waters of the United States, or any work that would affect the course, location, condition, or capacity of those waters, unless the work has been authorized by a DA permit.

If the proposal involves a discharge of dredged or fill material into waters of the United States, it may be subject to the Corps of Engineers' jurisdiction under Section 404 of the Clean Water Act (CWA). Waters of the United States include navigable waters, their tributaries, and adjacent wetlands (33 CFR § 328.3). CWA Section 301(a) prohibits discharges of dredged or fill material into waters of the United States, unless the work has been authorized by a DA permit under Section 404. Information about the Corps permitting process can be obtained online at <http://www.mvp.usace.army.mil/missions/regulatory>.

The Corps' evaluation of a Section 404 permit application involves multiple analyses, including (1) evaluating the proposal's impacts in accordance with the National Environmental Policy Act (NEPA) (33 CFR part 325), (2) determining whether the proposal is contrary to the public interest (33 CFR § 320.4), and (3) in the case of a Section 404 permit, determining whether the proposal complies with the Section 404(b)(1) Guidelines (Guidelines) (40 CFR part 230).

If the proposal requires a Section 404 permit application, the Guidelines specifically require that “no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences” (40 CFR § 230.10(a)). Time and money spent on the proposal prior to applying for a Section 404 permit cannot be factored into the Corps’ decision whether there is a less damaging practicable alternative to the proposal.

If an application for a Corps permit has not yet been submitted, the project proponent may request a pre-application consultation meeting with the Corps to obtain information regarding the data, studies or other information that may be necessary for the permit evaluation process. A pre-application consultation meeting is strongly recommended if the proposal has substantial impacts to waters of the United States, or if it is a large or controversial project.

We encourage continued coordination with us during the design and development for this proposal. For further information or to request a pre-application consultation meeting, please contact Benjamin Cox at (651) 290-5377 or [benjamin.r.cox@usace.army.mil](mailto:benjamin.r.cox@usace.army.mil).

Sincerely,



Chad Konickson  
Chief, Southwest Section

Copies furnished:

Ms. Heather Wayne  
Geronimo Wind Energy, LLC  
7650 Edinborough Way, Suite 725  
Edina, Minnesota 55435

## Swenson, Kristen

---

**From:** Heather L. Wayne  
**Sent:** Friday, March 29, 2013 9:29 AM  
**To:** Heather L. Wayne  
**Subject:** FW: Proposed Odell wind facility - teleconference discussion regarding field methods

---

**From:** Heather C. Kieweg [mailto:heather.kieweg@appliedeco.com]  
**Sent:** Thursday, March 28, 2013 8:10 PM  
**To:** Rheude, Margaret  
**Cc:** Patrick Smith; Heather L. Wayne; Kim Chapman  
**Subject:** RE: Proposed Odell wind facility - teleconference discussion regarding field methods

Thank you. That will be very helpful information. To my knowledge there haven't been any letters received from either Rich Davis or your office regarding this project.

**Heather Kieweg**  
**Applied Ecological Services**  
Office: 952-447-1919  
Cell: 651-428-8253

---

**From:** Rheude, Margaret [mailto:margaret\_rheude@fws.gov]  
**Sent:** Thursday, March 28, 2013 4:34 PM  
**To:** Heather C. Kieweg  
**Subject:** Re: Proposed Odell wind facility - teleconference discussion regarding field methods

Hi Heather,  
yes, I will be providing comments to you regarding eagles, T&E species, and other FWS-owned land interests. I will be getting back to you next week. As I am taking over the wind review projects from Rich Davis, I am still playing a bit of catch-up. Can you tell me if you have received any letters from him or our office with initial recommendations for your wind facility?  
Thanks,  
Mags

On Thu, Mar 28, 2013 at 12:58 PM, Heather C. Kieweg <[heather.kieweg@appliedeco.com](mailto:heather.kieweg@appliedeco.com)> wrote:

Hello Mags,

We understand your need to streamline project communications given your work load, although we want to make sure to share information and obtain input as appropriate. One of the issues we would have discussed with you at this point is Bald Eagle use of the project area. We would appreciate any information that you have about eagles within 10 miles of the project area. Please see the attached data request and shapefile containing a 10 mile buffer of the proposed site boundary. Thank you.

**Heather Kieweg**

## Applied Ecological Services

Office: 952-447-1919

Cell: 651-428-8253

---

**From:** Rheude, Margaret [mailto:[margaret\\_rheude@fws.gov](mailto:margaret_rheude@fws.gov)]  
**Sent:** Monday, March 25, 2013 3:36 PM  
**To:** Heather C. Kieweg  
**Cc:** [kevin.mixon@state.mn.us](mailto:kevin.mixon@state.mn.us); [Richard\\_Davis@fws.gov](mailto:Richard_Davis@fws.gov); Kim Chapman; Patrick Smith  
**Subject:** Re: Proposed Odell wind facility - teleconference discussion regarding field methods

Dear all,

I wanted to give you an update on the current status of FWS involvement in review of wind energy projects in Minnesota. Our current wind biologist, Rich Davis, will no longer be with the Service as of April 1, 2013. With Rich Davis leaving, I will be taking over his responsibilities for wind project review. A result of the federal government sequester has been that the FWS is having to review more projects with less staff, and our office has determined that for the time being, I will have a smaller role in state wind project review than Rich Davis.

In the coming weeks, I will be putting together a general package for wind developers of recommendations the FWS has for wind developers. This package will likely include general bird and bat conservation recommendations, as well as identify events that will trigger greater involvement by the FWS. These triggers, I anticipate, will include eagle issues, some bat issues (such as Northern Long-ear), T&E issues, and some post-construction fatality monitoring issues, such as migratory bird carcass collection permits. If there are additional issues that the DNR and DOC are not able to resolve, I will be able to provide some additional limited review.

Please continue to include me on emails so that I can keep tabs on various projects, and I will let you know when I am able to attend planning meetings and provide comment.

If you are able to identify specific "trigger" issues at this time, please send me that specific information for review. Otherwise, the Service will be providing you with general recommendations regarding your proposed wind facility.

Thank you,

Mags

--

Mags Rheude

US Fish and Wildlife Service

Twin Cities Field Office

4101 American Blvd E

Bloomington MN 55425

612-725-3548 x2202

[margaret\\_rheude@fws.gov](mailto:margaret_rheude@fws.gov)

On Thu, Mar 21, 2013 at 3:08 PM, Heather C. Kieweg <[heather.kieweg@appliedeco.com](mailto:heather.kieweg@appliedeco.com)> wrote:

Hello,

We're working with Geronimo on a proposed wind facility in southwestern Minnesota known as Odell. We're hoping to begin avian field surveys in the next few weeks, and we'd like to have a discussion with you about potential issues at the site and proposed survey methods. Ideally I'd like to schedule a teleconference next week. We would share the site location, and information on the proposed surveys.

Are there times next week that would work for a teleconference? Thank you.

**Heather Kieweg**

**Staff Ecologist**

**Applied Ecological Services, Inc.**

21938 Mushtown Road

Prior Lake, MN 55372

Office: 952-447-1919 ext. 3#

Cell: 651-428-8253

[heather.kieweg@appliedeco.com](mailto:heather.kieweg@appliedeco.com)

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Mags Rheude

US Fish and Wildlife Service

Twin Cities Field Office

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--

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Applied Ecological Services, Inc.™

## **APPLIED ECOLOGICAL SERVICES, INC.**

21938 MUSHTOWN ROAD, PRIOR LAKE, MN 55372  
PHONE: (952)447-1919 FAX: (952)447-1920  
email: [info.mn@appliedeco.com](mailto:info.mn@appliedeco.com)

---

*Bringing the science of ecology to all land use decisions*

March 28, 2013

Margaret Rheude  
United States Fish and Wildlife Service  
Twin Cities Field Office  
4101 American Blvd E  
Bloomington MN 55425

Subject: Odell (12-0974) – Eagle Nest Data Request

Dear Margaret Rheude,

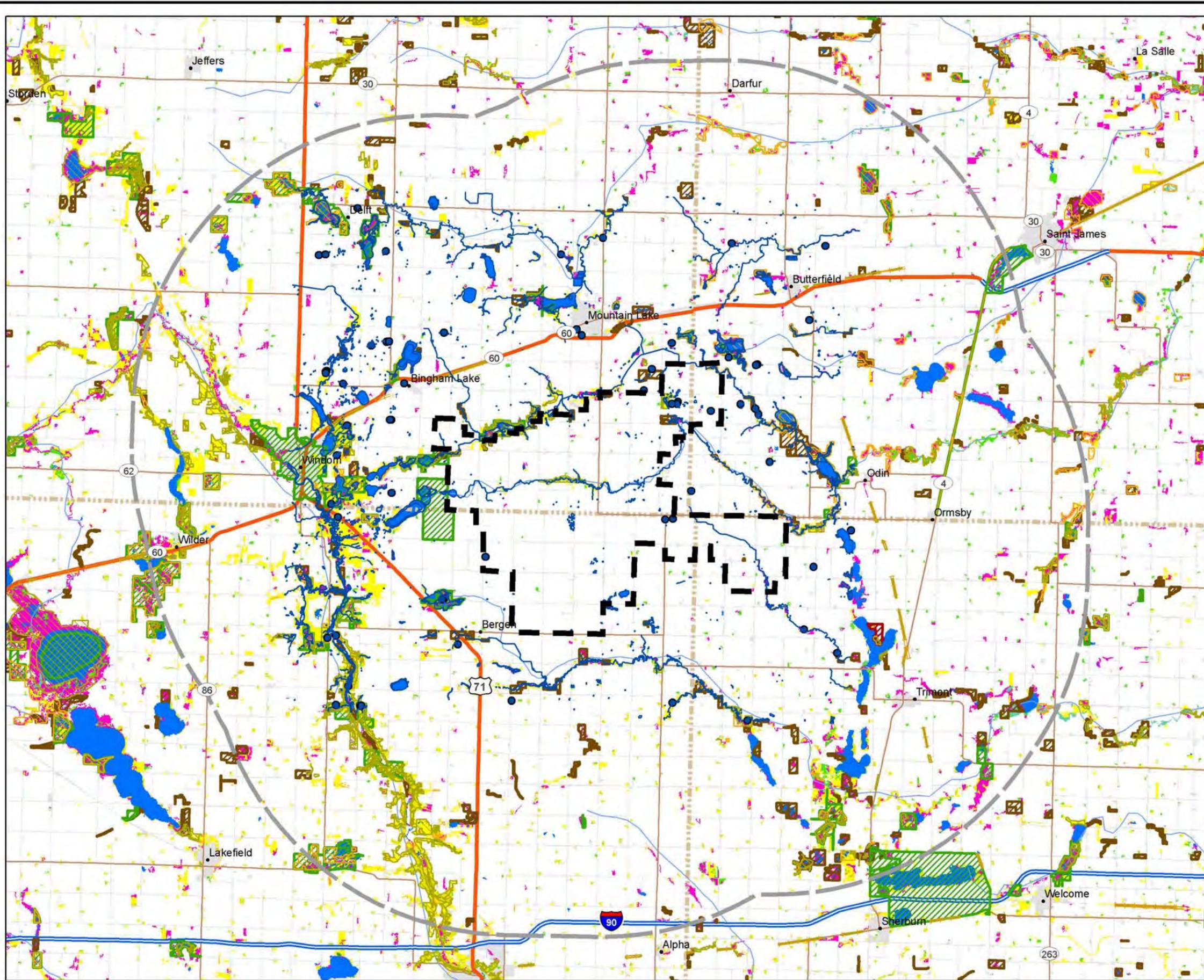
I am requesting nest data for eagles within 10 miles of a proposed wind energy development in Cottonwood, Jackson, Watonwan and Martin counties. We understand that your records of eagle nests are not complete, but would appreciate any information on known nests in this area. Attached you will find a map showing the proposed project location buffered by 10 miles and associated land covers. We would also appreciate any other information you might have on important eagle areas within the 10 mile buffer area. I am sending a GIS shapefile of the request area.

Please contact me if you have any questions. Thank you for your assistance, and we look forward to your review findings.

Sincerely,

Heather Kieweg  
[heather.kieweg@appliedeco.com](mailto:heather.kieweg@appliedeco.com)  
(651) 428-8253

# Odell Wind Farm Eagle Data Request



- Site Boundary
  - Odell 10 mile buffer
  - Protected Natural Areas
  - Railroad Prairie
  - Cty. Biological Survey - Native Plant Community
  - Cty. Biological Survey - Sites of Biological Sig.
  - NWI Wetlands
  - RIM Easement
  - County Land
  - Snowmobile Trails
- Land Cover:
- Open Water
  - Developed
  - Barren Land
  - Upland Broadleaf Forest
  - Upland Coniferous Forest
  - Upland Mixed Forest
  - Upland Shrub-Scrub
  - Grassland
  - Cropland
  - Forested Wetland
  - Emergent Wetland

Data Sources:  
 ESRI Street Map  
 2001 National Landcover Database USDA/NRCS  
 MNDNR - CBS, MNDNR Ownership, NWI  
 AES Job Number: 12-0974  
 Date: 3/28/2013  
 File Name: Odell\_EagleDataRequest\_20130328.mxd



21938 Mushtown Road  
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 952-447-1919  
 www.appliedeco.com

00.51 2  
  
 Miles



**From:** [Patrick Smith](#)  
**To:** [Heather C. Kieweg](#); [Rheude, Margaret](#); [Kim Chapman](#); [Heather L. Wayne](#); [Jordan B. Burmeister](#)  
**Subject:** RE: Odell - Bald Eagles  
**Date:** Monday, May 13, 2013 10:27:52 AM

---

Mags,

Thanks for taking the time for our conversation today, the link to the map I mentioned is here: [http://mn.gov/commerce/energyfacilities/documents/turb\\_summary\\_0710\\_2012.pdf](http://mn.gov/commerce/energyfacilities/documents/turb_summary_0710_2012.pdf)

Best Regards,

Patrick

Patrick Smith

Director of Env. Planning

Phone: 952-988-9000

Cell: 651-308-9823

Fax: 952-988-9001

Email: [patrick@geronimoenergy.com](mailto:patrick@geronimoenergy.com)

Geronimo Energy

7650 Edinborough Way, Suite 725

Edina MN 55435

-----Original Appointment-----

**From:** Heather C. Kieweg [<mailto:heather.kieweg@appliedeco.com>]

**Sent:** Friday, May 10, 2013 8:21 AM

**To:** Heather C. Kieweg; Patrick Smith; Rheude, Margaret; Kim Chapman; Heather L. Wayne; Jordan B. Burmeister

**Subject:** Odell - Bald Eagles

**When:** Monday, May 13, 2013 9:30 AM-10:00 AM (UTC-06:00) Central Time (US & Canada).

**Where:** MN Conference Call Line 1-888-387-8686 ID Num: 764-016-5674#

When: Monday, May 13, 2013 9:30 AM-10:00 AM (UTC-06:00) Central Time (US & Canada).

Where: MN Conference Call Line 1-888-387-8686 ID Num: 764-016-5674#

Note: The GMT offset above does not reflect daylight saving time adjustments.



## Swenson, Kristen

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**From:** Rheude, Margaret <margaret\_rheude@fws.gov>  
**Sent:** Thursday, May 16, 2013 4:55 PM  
**To:** Patrick Smith; cc: Heather C. Kieweg; Kim Chapman; Heather L. Wayne; Jordan B. Burmeister  
**Subject:** Odell Wind Farm Eagle Recommendations  
**Attachments:** Appendix C ECP 2013.pdf

\*This original email got bounced back - I think it was too big, so I'll try to break it up into smaller pieces

Hi everyone,  
\*this email is mainly concerning eagles

as a quick follow-up to our meeting - I was able to pull up the shapefile of the project, as well as the 10-mile buffer area. I only saw one eagle nest within the 10-mile buffer, and none within the project boundary. The nest that I found in my database search is the same one that you have. However, this does not guarantee that there are no eagle nests within either the project area or the 10-mile buffer - the DNR database has not been updated since 2007. I would recommend conducting yearly nest surveys in the spring of each year (before leaf-on) to look for newly built nests (within the 2-mile buffer zone). The updated eagle conservation plan guidance is out, and can be found:

<http://www.fws.gov/windenergy/PDF/Eagle%20Conservation%20Plan%20Guidance-Module%201.pdf>

There is in-depth information on pre-construction surveys found in Appendix C. I have pulled that out for you, and attached it here. Please note that it recommends using 800m point counts, at least 1 hour in duration, that eagle minutes and eagles are counted, and that there be a differentiation between flying and perched eagles. I have included a spreadsheet with an example of how data might be collected. The columns in green are data that the FWS needs in order to run the collision risk model. The columns in pink are suggestions of additional data you can collect if it suits your needs. For instance, some developers like to record eagle minutes within, below, and above the rotor swept zone. For the FWS model, however, we are looking at whether eagles are at or below 200m, or above 200m. Some wind developers also note additional information, such as the presence of livestock or carcasses that might influence eagle numbers. I would recommend also conducting observer trials to ensure they can accurately determine 200m flight height, as well as 800m radius observation. Do you know how much eagle data you are going to collect? 1 or 2 years?

In our phone call you asked about the recommended frequency of eagle surveys. The FWS recommends eagle surveys at least once a month in each location, with an increase in surveys during the times of the year when eagle activity is likely to increase - for instance - spring/fall migration, or when chicks fledge, or if there appears to be a wintering population of eagles near the site. As discussed, I do think it would be possible to drop a few of the monthly surveys during times where eagle behavior is likely to be the same - ie: April eagle activity is likely similar to May eagle activity - the same could be true for August-September eagle activity. However, I want to state in order to get the most robust dataset - monthly surveys are preferable. In order to help you with your decision of how many surveys to conduct, I would recommend looking at known patterns of eagle activity year-round for your site - using sources such as winter-point count surveys from the Eagle Center in Wabasha, migration patterns observed from Hawk mountain in Duluth, etc. Note that weather patterns (which can vary from year to year) may change predicted eagle behavior. If you do decide to drop some of the monthly eagle surveys, I would be happy to look at your proposed schedule of surveys and give you feedback.

Please find also attached some examples of recording eagle flight patterns, as well as eagle abundance data, and example of eagle "hot-spots" - places that may attract bald eagles.

I will be working on an additional follow-up response concerning T&E species, as well as FWS-interest lands. Thanks, I'll be in touch soon.

--

Mags Rheude  
US Fish and Wildlife Service  
Twin Cities Field Office  
4101 American Blvd E

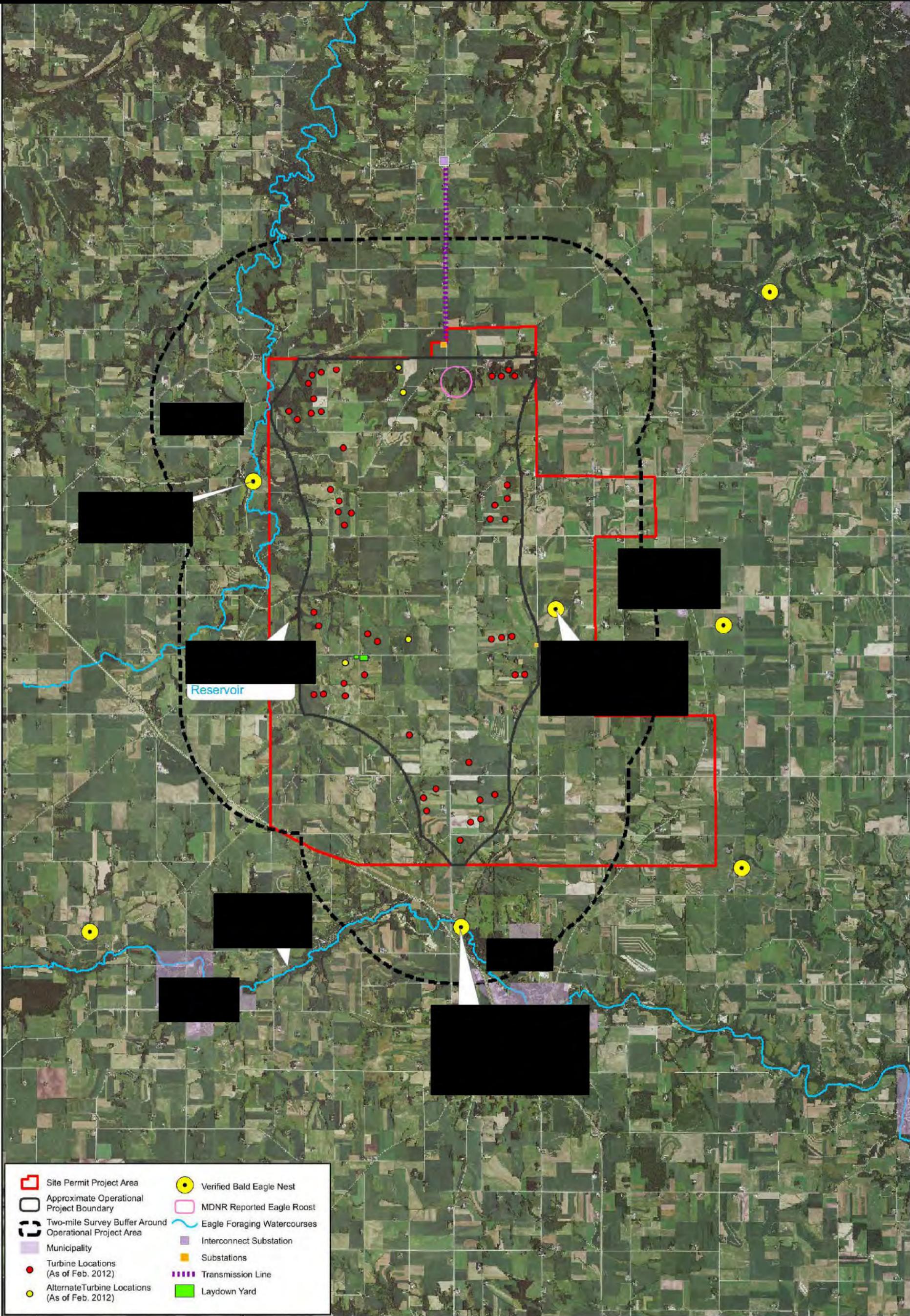
## Swenson, Kristen

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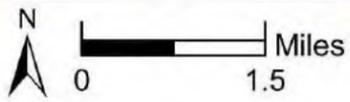
**From:** Rheude, Margaret <margaret\_rheude@fws.gov>  
**Sent:** Thursday, May 16, 2013 5:03 PM  
**To:** Patrick Smith; cc: Heather C. Kieweg; Kim Chapman; Heather L. Wayne; Jordan B. Burmeister  
**Subject:** Odell eagle email 4  
**Attachments:** Eagle Hot Spots\_example.pdf

--

Mags Rheude  
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**NOTE: FOR AGENCY USE ONLY.  
NOT FOR PUBLIC DISTRIBUTION.**



**Swenson, Kristen**

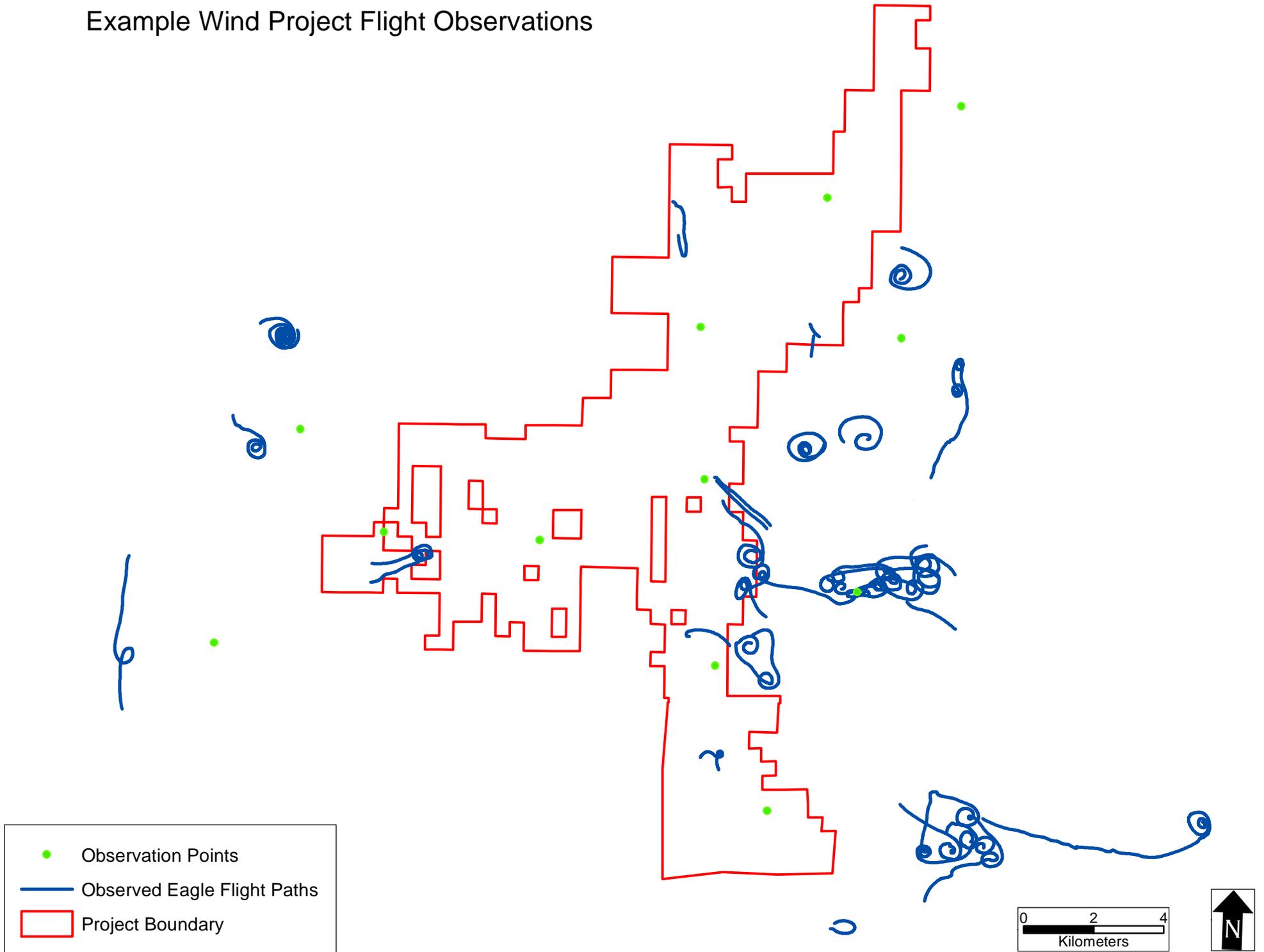
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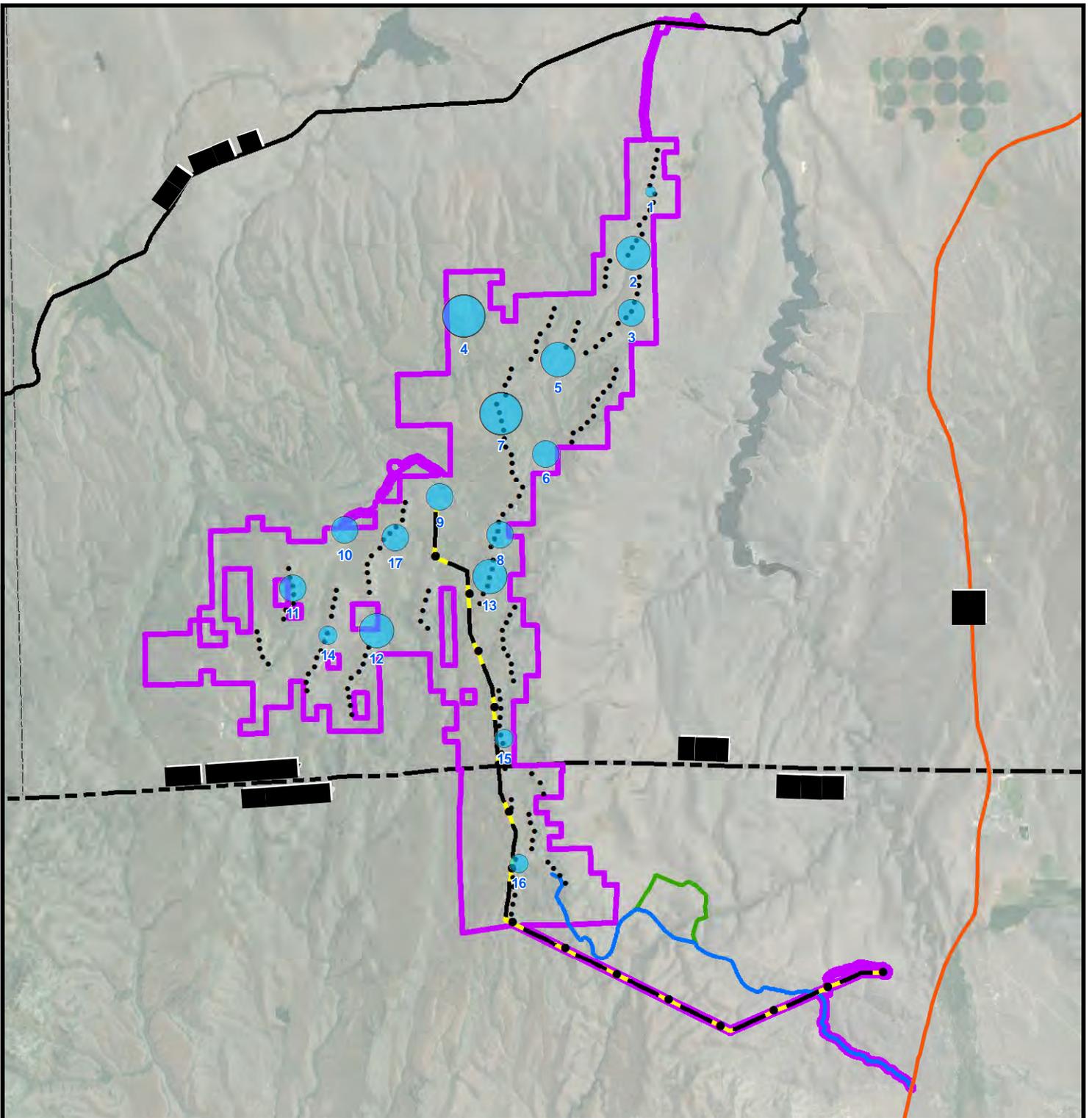
**From:** Rheude, Margaret <margaret\_rheude@fws.gov>  
**Sent:** Thursday, May 16, 2013 4:57 PM  
**To:** Patrick Smith; cc: Heather C. Kieweg; Kim Chapman; Heather L. Wayne; Jordan B. Burmeister  
**Subject:** Odell Wind Farm eagles Email 2  
**Attachments:** Flight path examples.pdf; Sample abundance data\_Redacted.pdf; Sample data collection.xlsx; Sample flight path data\_Redacted.pdf; Walker et al 2005 GEs before-after windfarm.pdf

--

Mags Rheude  
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[margaret\\_rheude@fws.gov](mailto:margaret_rheude@fws.gov)

# Example Wind Project Flight Observations





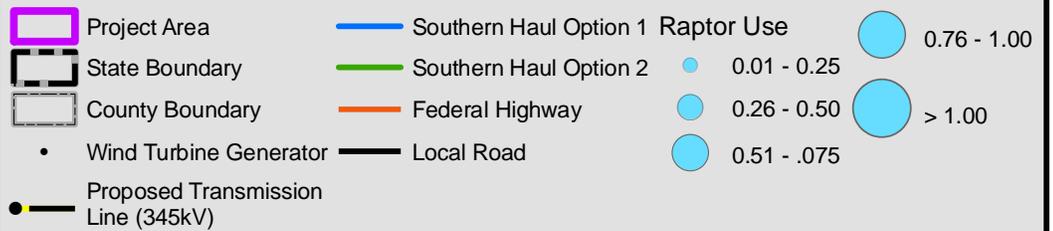
1:175,000  
NAD 1983 UTM 11

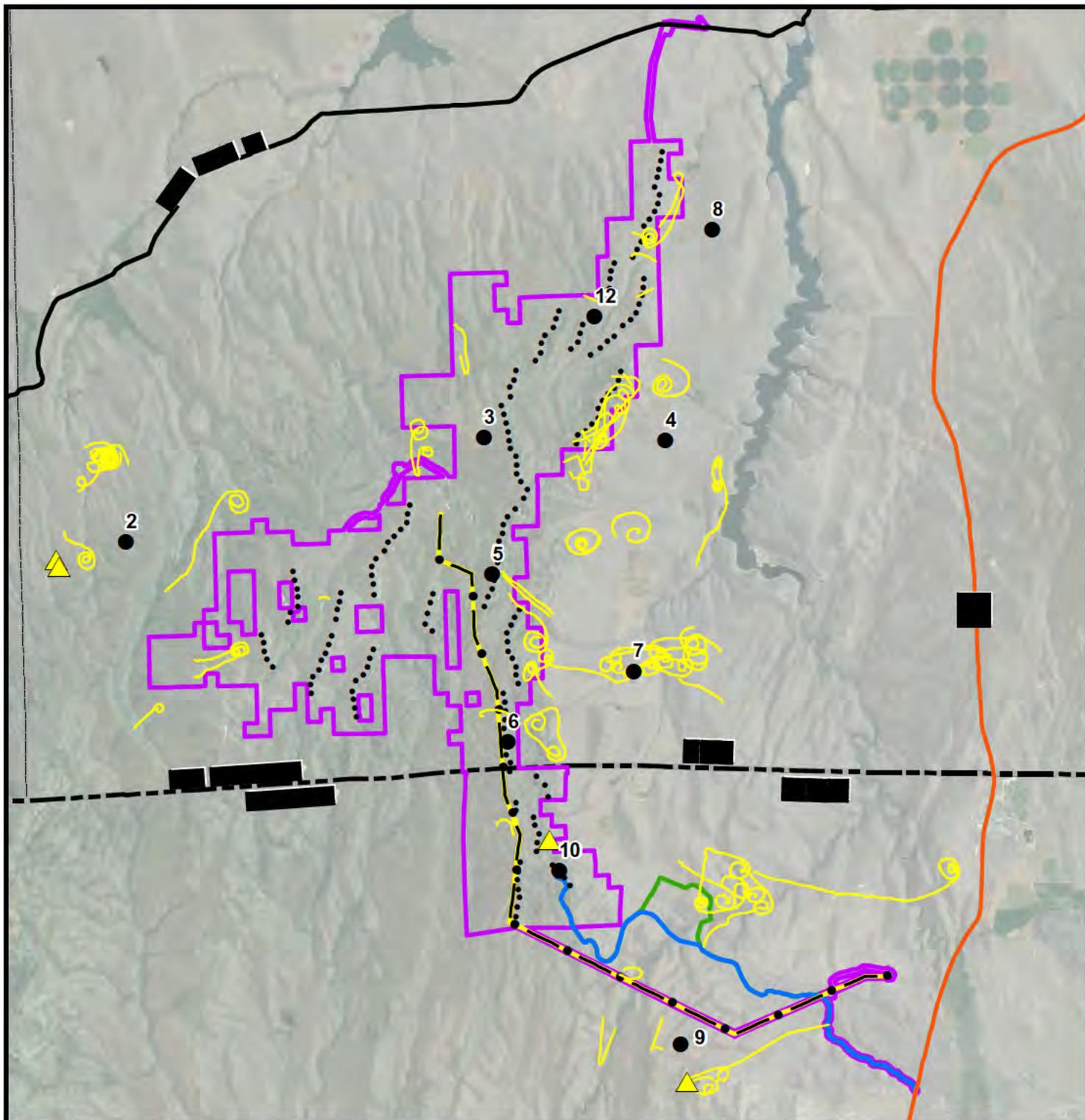
0 0.5 1 2 3 4 5 Miles

00.51 2 3 4 5 Kilometers

**Figure 6**

**Raptor Use By Survey Point  
During 2008 Fixed-Point Surveys**





1:175,000  
NAD 1983 UTM 11

0 0.5 1 2 3 4 5 Miles

00.51 2 3 4 5 Kilometers

Figure 20

Golden Eagle Flight Paths and  
Perch Locations from 2011  
Field Observations

- Project Area
- State Boundary
- County Boundary
- Golden Eagle Observation Point
- Golden Eagle Observation - Perched
- Golden Eagle Observation - Flying
- Wind Turbine Generator
- Southern Haul Option 1
- Southern Haul Option 2
- Proposed Transmission Line (345kV)
- Federal Highway
- Local Road

## Resident Golden Eagle ranging behaviour before and after construction of a windfarm in Argyll

D WALKER, M MCGRADY, A MCCLUSKIE, M MADDERS & D R A MCLEOD

*Resident Golden Eagle ranging behaviour was monitored over 776 observation hours before and after construction of a windfarm in Argyll, western Scotland between 1997 and 2004. Overall size of the eagle range that was potentially affected by the windfarm (for male, female and both eagles) was similar before and after construction. Eagles appeared to change their ranging to avoid the windfarm site. Once built the windfarm was over flown mostly when other eagles intruded on the territory. An area of plantation forestry was felled with the aim of mitigating the potential loss of foraging habitat to the windfarm, and drawing eagles away from the windfarm thereby reducing collision risk. Eagles were seen in the tree cleared area 3 times more often after felling than before felling, and the shift in ranging was away from the windfarm and in the direction of the felled area. These findings are from a single pair and should be used cautiously when applied to other, similar, situations. However, they are an important first step in understanding the likely effects of windfarms on eagles.*

### Introduction

In the UK in 2004, 253 MW of new, wind generated electricity was added to the national grid, 5 times the annual amount in the 1990s and double the 2003 figure. In Scotland, 11 schemes are under construction and due to come on line by the end of 2005. Many more developments are being planned in Scotland, and 70% of onshore schemes being considered for planning approval in the UK are located there (British Wind Energy Association 2004). Prospecting for new, commercially viable sites continues.

Scotland holds virtually all breeding pairs of Golden Eagles *Aquila chrysaetos* in the United Kingdom. Windfarms located within the range of Golden Eagles can cause eagle deaths due to collisions (Hunt 2002), and it has been thought that eagles may alter their ranging behaviour to avoid turbines, thus rendering the habitat within the windfarm area unavailable to foraging eagles. In Scotland these possible

impacts have led to the adoption of a cautious approach to the siting of windfarms with regards to the location of territorial eagles.

A 46 turbine windfarm, the Beinn an Tuirc windfarm, was constructed during 2001 within an occupied eagle territory in Argyll. In addition, another windfarm, the Deucheran Hills windfarm, was built in 2001 (9 turbines) about 6.4 km to the north of the Beinn an Tuirc site, and is more peripheral to the home range of the eagles. To mitigate the potential habitat loss resulting from the Beinn an Tuirc windfarm, a habitat management plan was implemented that included forest clearance and management of existing Heather (*Calluna vulgaris*) moorland to increase the abundance of potential eagle prey (eg Willow Ptarmigan *Lagopus lagopus scoticus* and Black Grouse *Tetrao tetrix*). The creation of new areas of foraging habitat away from the windfarm was also thought likely to reduce the risk of eagle collisions with the turbines. An on going programme of eagle monitoring was

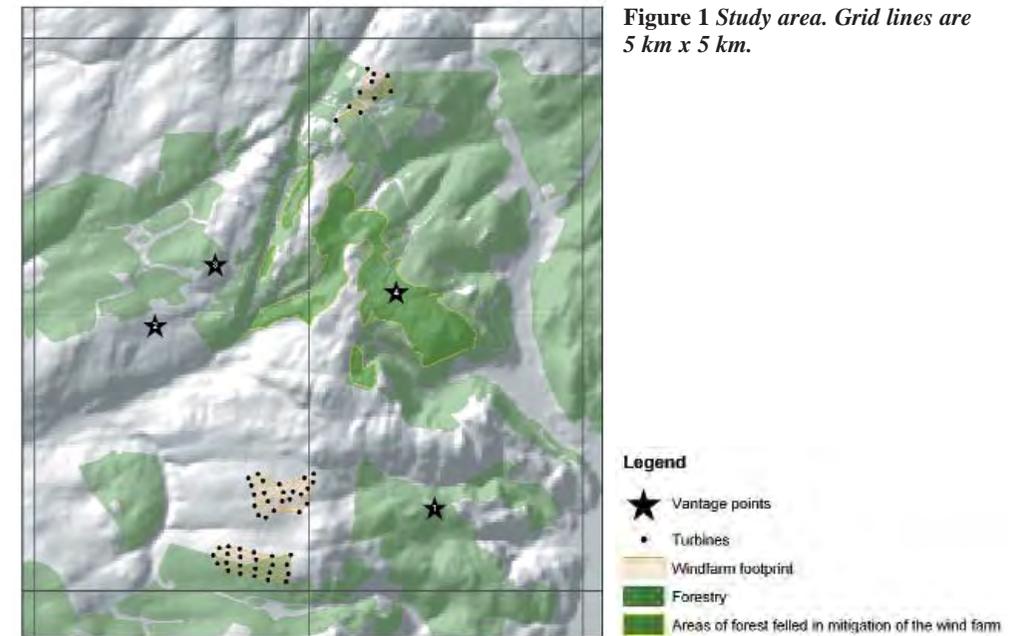
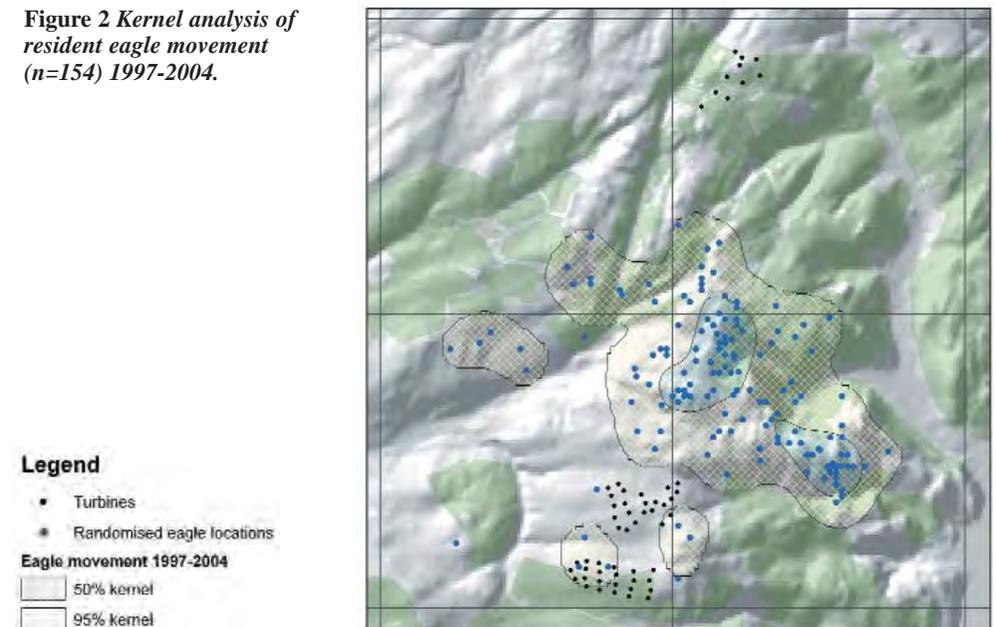


Figure 2 Kernel analysis of resident eagle movement (n=154) 1997-2004.



undertaken from 1997 to assess effects of the Beinn an Tuirc windfarm and the habitat management plan on Golden Eagle ranging and breeding performance.

The Golden Eagle is a species of medium conservation concern in Britain (Gibbons *et al* 1996). In Argyll habitat changes that adversely influence foraging potential (eg upland afforestation and overgrazing of Heather areas) have affected territories adjacent to the one studied by us (Watson *et al* 1987). In spite of the similar loss of much land to plantation forest within the estimated eagle home range that includes the Beinn an Tuirc windfarm, there remains an extensive area of open land with modest populations of important prey species such as Willow Ptarmigan. Because of this the home range continues to be potentially viable for breeding eagles.

### Study area

The Beinn an Tuirc windfarm (255 ha) and eagle monitoring area (ca 57 km<sup>2</sup>) straddle the main ridge (Figure 1), which is generally below 300m above sea level, though there are peaks of ca 450m. The eastern slopes of this ridge, to a distance of about 3 km, are characterized by deeply cut valleys, with rock outcrops that provide a number of suitable eagle nest sites. To the west of the main ridge for a distance of about 8 km the terrain is gentler, characterized by wide, rounded ridges and shallow incised stream courses that run to the sea. This east west pattern extends both north and south of the study area.

Landcover within the monitoring area includes commercial forestry blocks, mostly Sitka Spruce *Picea sitchensis* of varying age, and open hill, dominated by grass and Heather; open areas include both grazed and ungrazed habitats, which are mostly acidic grasslands with some areas of shrub heath and areas of blanket bog on

the higher slopes. Between October 1999 and June 2001 an area of forest (ca 280 ha) was felled to the north east of the main open area as part of the habitat management plan. Eagle monitoring focused on an area of ca 34 km<sup>2</sup> of open hill, which is bounded on the north and south by forest, but also includes ca 7 km<sup>2</sup> of open ridges within forest blocks to the north.

The diversity of natural fauna is limited, and a number of species, such as Mountain Hare *Lepus timidus* and Golden Plover *Pluvialis apricaria*, no longer occur locally as breeders. Mammals include small numbers of Rabbits *Oryctolagus cuniculus* around the fringe of the monitoring area, occasional Brown Hares *Lepus europaeus* towards its western edge, Sika *Cervus nippon* and Roe *Capreolus capreolus* Deer in the plantations and Foxes *Vulpes vulpes*. The birds are typical of upland areas in western Scotland (Ratcliffe 1990). Birds breeding on or using the area include diurnal and nocturnal raptors, Red-throated Divers *Gavia stellata*, small numbers of Mallard *Anas platyrhynchos*, Eurasian Teal *A. crecca* and Mew Gulls *Larus canus*. The forest avifauna is dominated by passerines such as European Robin *Erithacus rubecula* and Chaffinch *Fringilla coelebs*, and corvids *Corvus* spp. Black Grouse are present in 3 to 4 areas of the younger plantations, but also occur on the open hill. The open hill holds a scattered population of Willow Ptarmigan, which are mostly associated with areas of Heather moorland. Small numbers of Common Snipe *Gallinago gallinago* and Eurasian Curlew *Numenius arquata* occur in grass dominated wet flushes.

The Beinn an Tuirc windfarm contains 46 – 660kW turbines that are divided evenly into 2 groups (north and south); within these groups the turbines are > 150 m apart. At its narrowest point the gap between the north and south areas is about 670 m. The Beinn an Tuirc windfarm itself is located in the central southern section of the

main block of open area with plantation forestry bordering its southern edge. Some plantation forestry (ca 50 ha) was removed to accommodate the southern section of the windfarm.

Human activity in the study area prior to windfarm construction mostly comprised shepherding on the open hill, deer stalking within the forests and ecological project survey work throughout the area. Forest operations, eg felling and planting, are ongoing, but the location, timing and extent of these are controlled, especially during the breeding season, to lessen potential impact on the eagles. Since construction, regular maintenance of the wind turbines has been added to the list of human activities in the area. Human visitor pressure on the open hill by hill walkers, both before and after construction, was very limited and mostly associated with accessing the highest summit.

### Methods

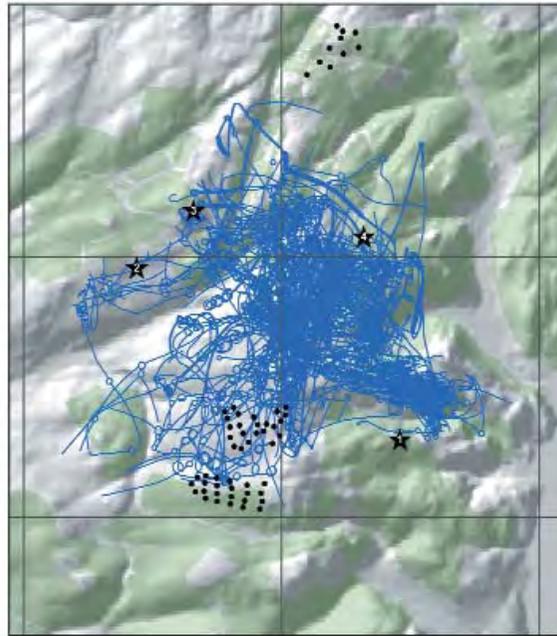
Observations of eagle movements were made from 4 vantage points (VP). From these we monitored range occupancy, habitat use and foraging effort by the individual eagles, and collected information on eagle behaviour. Two VPs have been in use since 1997, a third was added in 1998 and a fourth in 1999. The Beinn an Tuirc windfarm area and main open area have been monitored since 1997; the addition of the last 2 VPs allowed us a better view of an area of forestry felled in mitigation of the windfarm. Collectively, the area viewed from the VPs comprises the eagle monitoring area, and VPs are located around the perimeter of this area so that the greatest continuous panorama is under observation, while reducing any potential influence of observer presence on eagle behaviour.

Observations were made 8 times per year (twice per quarter) from each VP between November 1997 and April 2004 except during March to

December 2001, when fieldwork was curtailed by Foot and Mouth Disease access restrictions. Within each quarter all 4 VPs were visited; the order of visits was arbitrary. Weather could affect the area viewed from any particular VP and the duration of any particular watch period. Observation periods were chosen to avoid periods of continuous heavy rain, snow or dense fog, and ideally were 4 hours in length. Where possible, watches affected by poor weather conditions were extended to achieve 4 hours of observation time. While weather conditions could affect VP visibility they did not influence choice of VP, and all VPs were visited in a variety of conditions. While most watches tended to cover the middle of the daylight period, observations occurred at all times of the day. A total of 392 hrs of observation were made before construction, 68 during construction and 316 hrs after construction.

A single, experienced observer (DW) made all observations. The viewing area was kept under continuous observation for the full watch period by above skyline scanning without optical aids, binocular scanning of all areas and regular telescopic checks of known and potential perches. In so doing bias in observer effort towards specific locations within the viewing field was minimized.

When an eagle was seen, the time of first contact was recorded to the nearest second, and the bird's flight path was plotted on a paper map. Simple flights were synchronously plotted in the field, prolonged flights were plotted in sections that were drawn synchronously or nearly so, and fast or short flights were plotted immediately after they occurred. Final plotting of more complex flight lines was completed as soon as was possible after the watch period. In this way a complete activity log of eagle behaviour and location was kept for each VP session. An estimation of altitude above the ground (in range



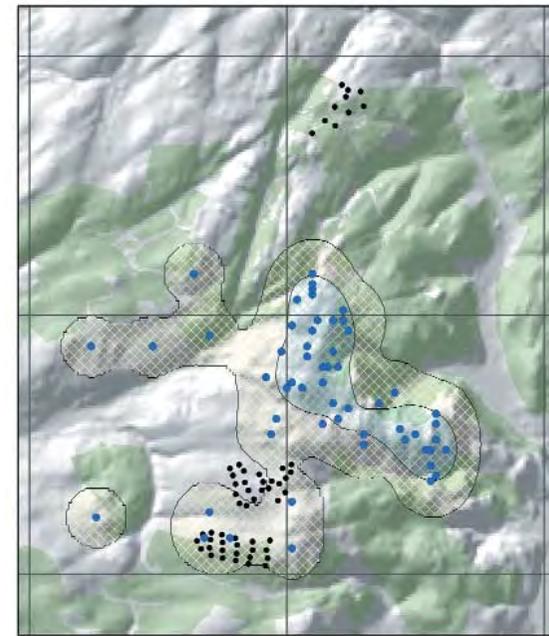
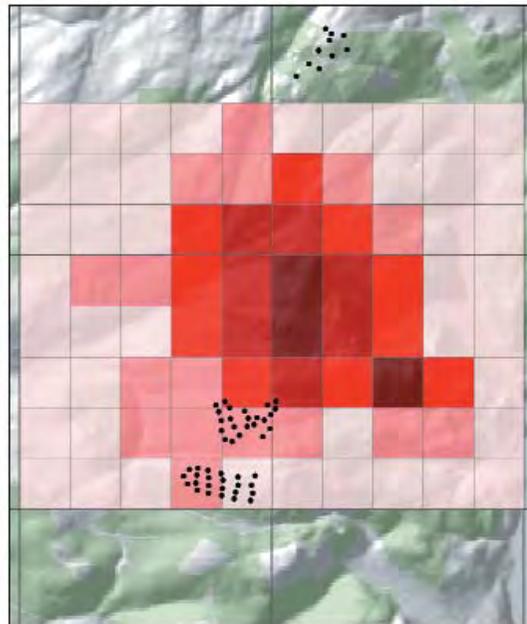
**Figure 3** Flight lines (left, n=811) of resident Golden Eagles (male and female). Grid (1 km<sup>2</sup>) colour shows relative use by eagles (dark red=heavy use, light pink=light use).

**Legend**

- ★ Vantage points
- Turbines
- Flight lines
- Forestry

**Metres of flight lines per km square**

- 0 - 5643
- 5644 - 20095
- 20096 - 50445
- 50446 - 101082
- 101083 - 164853



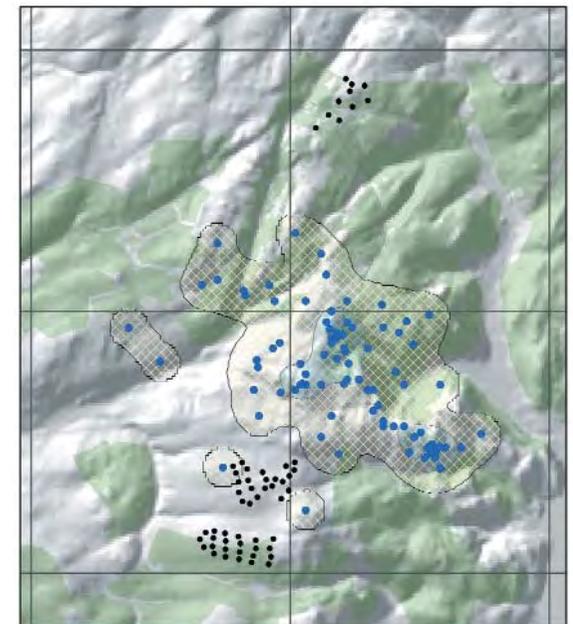
**Figure 4** Kernel analysis of ranging of resident eagles (male and female) showing their ranging before (left, n=57) and after (right, n=83) windfarm construction.

**Legend**

- Turbines
- Randomised eagle locations

**Eagle movement 1997-2004**

- ▨ 50% kernel
- ▨ 95% kernel



bands of <5m, 5-20m, 21-60m & >60m) and activity (hunting, transitional flights, species interaction, display, height gain and directional flights) were noted to the nearest second, as was the time when the bird either landed or flew from view. Factors that might influence eagle behaviour (eg human activity, presence of intruding eagles) were also noted. Even when more than one eagle was visible, all flights were followed, timed and plotted. No flights were excluded from the recording process and no assumptions were made about the route or activity of birds when they were intermittently lost from view.

#### *Analyses of eagle ranging data*

Two analytical approaches were taken, one based on generating a representative set of eagle locations and one that used a grid overlaid on eagle flight lines to calculate an index of use of km<sup>2</sup> areas by eagles. These were used to create maps that show location, extent and concentration of use by eagles. Data on eagle ranging and habitat were entered into a Geographical Information System (GIS, ArcView 3.3 and ArcGIS, ESRI, Redlands, CA, USA), where analyses and map making were undertaken using the Animal Movement (ver 2.0) extension (Hooge and Eichenlaub 1997).

**Point analysis.** We framed the area in which eagles were observed by mapping the maximum extent convex polygon, the vertices of which were the most outlying of observations of eagles. The maximum extent convex polygon probably overestimates the actual range, so we also used a randomised selection of points along mapped flight lines to generate a 'representative' set of eagle locations that could be analysed. Points along plotted flight lines were selected in a way that promoted randomness and independence, while enhancing sample size. To do this we randomly selected a single point along the flight lines for each 4 hour observation bout, then selected the sequence of points before and after

that random point that were separated from that point and from each other by at least 45 minutes. Observations of radiotagged, territory holding eagles in western Scotland suggested that they can fly from one end of their range to the other in < 15 minutes (McGrady unpublished data), so the 45 minute limit we set is a conservative estimate of the time needed to achieve independence between points. These randomly selected eagle locations were then used to produce maps of area use for the resident male eagle, for the resident female eagle, and for the eagles as a pair. Two representations of eagle range use were employed that used randomised point data: the minimum convex polygon (MCP) (Mohr 1947) and an adaptive kernel analysis set at 95 and 50% levels (Worton 1989). The MCP maps extent of the random location's distribution and kernel analyses map likely use of areas by eagles based on the distribution of eagle locations over time. The 50% kernel predicts the centrally located area where eagles concentrate 50% of their time, and is used by us as a nominal "core area".

One to 6 observations of intruding eagles were made per year. These are not included in our analyses, but provide useful context for interpreting behaviour of the resident eagles.

**Grid analysis.** The study area was overlaid with a grid that corresponded to the Ordnance Survey one km grid. We then measured the total length of flight lines recorded from our direct observations that occurred in each square. Total length of flight lines per grid square was then mapped and used as a measure of eagle use.

We made comparisons of ranging before (prior to August 2000) and after (after January 2002) windfarm construction for the male, the female and the pair using the kernel analyses and the flight line information. By way of these comparisons we assessed the effect of the Beinn an Tuirc windfarm and the effects of the associated

tree felling and habitat management. Because data are from eagles within a single range, and likely to be the same individuals, robust statistical analyses could not be undertaken.

## Results

A total of 776 observation hours were logged over 194 watches. Prior to construction 98 watches were made, during construction 17 watches, and after construction 79 watches. No eagles were seen during 60 of the watches.

#### *Golden eagle occupancy and breeding*

The home range was occupied throughout the study period, apparently by the same 2 adult eagles. The eagles used a different nest in each year until 2003 when that of 1998 was reused. The eagles laid 2 eggs each year except 2003, when a single egg was laid. A single juvenile was fledged in 1997. During the study period, productivity was 0.125 young per breeding attempt.

#### *Golden eagle ranging*

The maximum extent convex polygon in which eagles ranged covered 49.2 km<sup>2</sup>; the MCP covered 32.9 km<sup>2</sup> (n= 154). Thirty two percent of the Beinn an Tuirc windfarm was overlaid by

maximum extent convex polygon and 28 % was overlaid by the MCP. The 95% kernel of eagle ranging covered 20.5 km<sup>2</sup>, and had 2 core areas (50% kernel) that were both outside the Beinn an Tuirc windfarm area and covered a combined area of 2.9 km<sup>2</sup> (Fig 2). The windfarm area was only overlapped by the 50-95% isopleth of kernel analyses of eagle ranging ie it was not included in the core area. Table 1 summarizes the areas of 95% and 50% kernels of eagle home ranging before and after construction and the amount of overlap between eagle ranging maps and the footprint of the Beinn an Tuirc windfarm. Eagle ranging kernels are illustrated in Figures 2-4.

Three randomised locations of eagles (2.56% of all locations) were over the windfarm footprint, two (1.7%) were over turbines, and all of these were prior to construction. Additionally, 3 locations were within 500 m of the windfarm and 2 of these were prior to construction.

Kernel areas for males were similar to those of females (Table 1). Also, for both sexes kernel areas were similar before and after windfarm construction, though the shape and spatial location of the ranges shifted, mostly east and north (Figures 5 and 6) after construction.

**Table 1** Areas (km<sup>2</sup>) within 50% and 95% kernels for eagles during the whole study period and before and after windfarm construction. Values in () are % of eagle range that overlap the windfarm.

|                             | N   | 50% area kernel | 50-95% kernel | Total 95% kernel |
|-----------------------------|-----|-----------------|---------------|------------------|
| Male 97-04                  | 66  | 3.0 (0)         | 17.8 (4.4)    | 20.8 (3.8)       |
| Male pre construction       | 27  | 6.1 (0)         | 19.3 (6.7)    | 25.4 (5.1)       |
| Male post construction      | 37  | 2.3 (0)         | 15.0 (0.03)   | 17.3 (0.03)      |
| Female 97-04                | 88  | 4.9 (0)         | 20.8 (3.7)    | 25.7 (3.0)       |
| Female pre construction     | 30  | 4.7 (0)         | 20.6 (8.9)    | 25.3 (7.2)       |
| Female post construction    | 46  | 3.8 (0)         | 19.7 (2.4)    | 23.5 (2.0)       |
| All birds 97-04             | 154 | 3.2 (0)         | 20.9 (2.7)    | 24.1 (2.4)       |
| All birds pre construction  | 57  | 5.2 (0)         | 20.7 (9.0)    | 25.9 (7.2)       |
| All birds post construction | 83  | 6.9 (0)         | 33.6 (0.5)    | 40.5 (0.4)       |

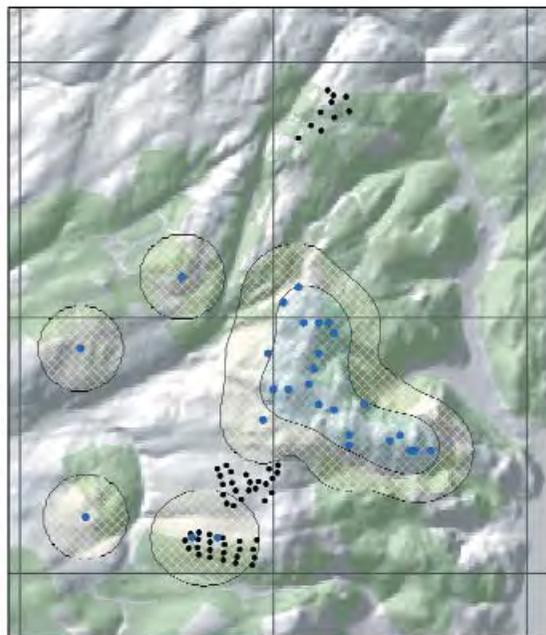


Figure 5 Kernel analysis of ranging of resident male eagle before (left, n=27) and after (right, n=37) windfarm construction.

**Legend**

- Turbines
- Randomised eagle locations

**Male eagle movement 1997-2004**

- 50% Kernel
- 95% Kernel

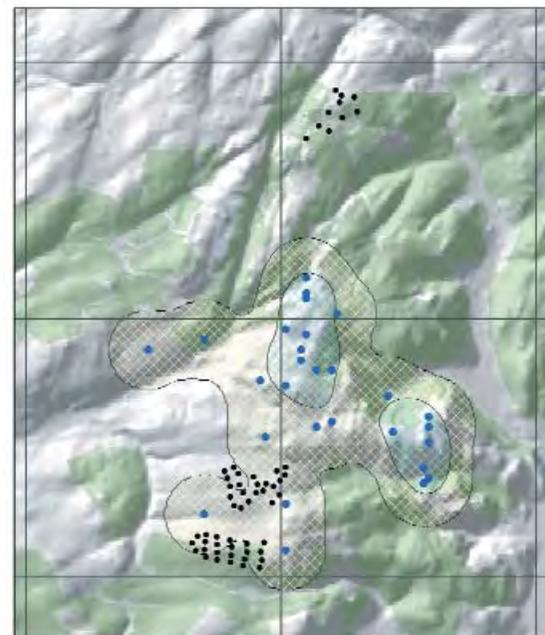
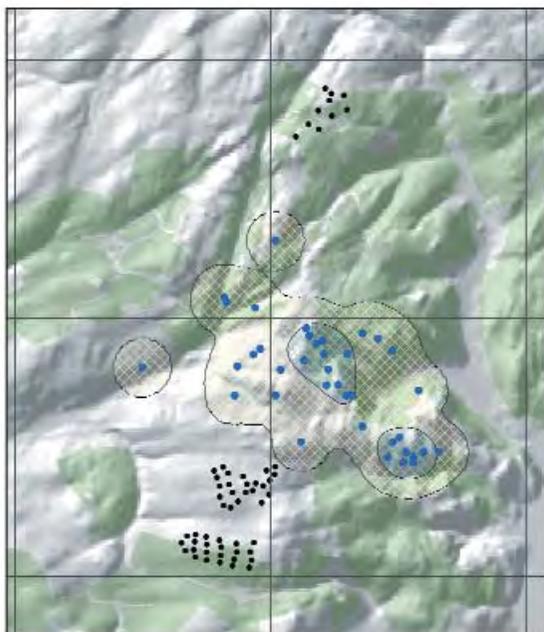


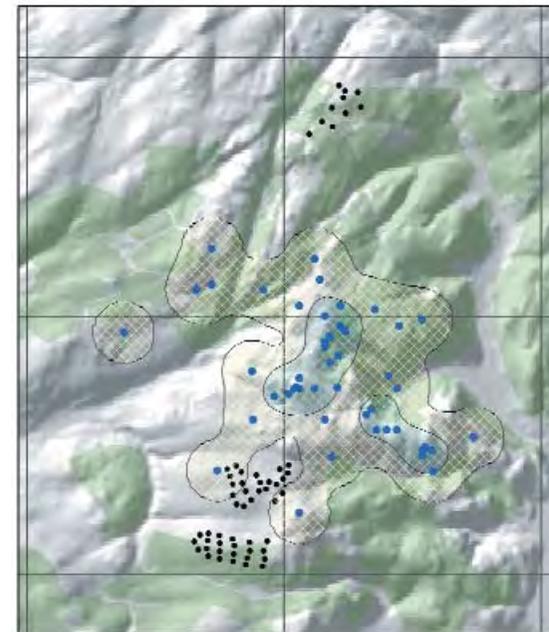
Figure 6 Kernel analysis of ranging of resident female eagles before (left, n=57) and after (right, n=83) windfarm construction.

**Legend**

- Turbines
- Randomised eagle locations

**Female eagle movement 1997-2004**

- 50% Kernel
- 95% Kernel



A total of 811 flight paths were mapped. Only one eagle flight line was recorded at low to medium altitude (21-60 m) within the Beinn an Tuirc windfarm after construction and this passed between the 2 discrete clusters that comprise the windfarm. In that instance the nearby presence of an intruding eagle was almost certainly a contributing factor. No eagles have been seen within the turbine clusters. Two of 3 instances of eagles over flying the windfarm were when intruding eagles were in the area.

Seventy seven percent of randomised locations were over open landcover types. The percentages of locations over different landcovers suggest the following 'preference' by the eagles: heather moor>treefell>grass hill>forest. Eighty percent of pre construction randomised locations were over open landcover types; the value was 79% for the post construction period.

Regarding the area of forestry that was felled, 21.6% of random locations prior to felling (n=37), 3.1 % of random locations during felling (n=32), and 18.8% of random locations after felling (n=85) were within this area. Eagles flew 0.095 km over the forest area prior to felling per hour of observation and 0.285 km/hr of observation after felling, a three-fold increase in use. Figure 8 utilizes flight line data and shows relative use of different areas overall and proportion of use of each habitat polygon before and after tree felling. Over 70% of total eagle flight line length was over the central open area. Figure 8 illustrates that eagles shifted their ranging to the northeast after trees were felled.

## Discussion

Impacts of windfarms on birds can include collisions (See Hunt *et al* 1999 and Hunt 2002) or loss of habitat (eg Leddy *et al* 1999). In this study, resident Golden Eagles appeared to avoid the windfarm within their home range except

when responding to intruders south and west of the centre of the territory. Studies exist that show that birds (eg Osborn *et al* 1998) including raptors (Curry and Kerlinger 1998) will try to avoid moving turbines.

Physical accessibility does not seem to be what hinders eagle use of the windfarm. Turbines were separated by relatively large distances, larger than tree spacing in forested areas used by Golden Eagles (Tjernberg 1983), and the eagles we studied were seen hunting Willow Ptarmigan in open patches and rides within forestry smaller than those available within the windfarm (D Walker unpublished data). In combination with the fact that resident eagles continue to forage in areas comparatively close to the windfarm especially toward the centre of the range this suggests that eagles avoid the windfarm as a unit rather than individual turbines. While food densities are comparatively low within the windfarm footprint, current potential prey populations of Willow Ptarmigan, Common Snipe and sheep carrion (S Sheridan and D Walker, unpublished data) and previous use suggest that the eagles would still forage within the windfarm area if turbines were not in place. In particular, eagle foraging might be expected here at times of relatively high grouse availability, July-October, but this has not been recorded since construction. Also, the regular presence within the windfarm of corvids, upon which eagles prey, suggests that eagles may be excluded from the windfarm. Hooded Crows *Corvus corone cornix* are a comparatively common and easily taken prey species but appear to be safe from predation while within the farm. Rotor noise and movement or prey distribution, or any combination of these factors, may be influencing eagle movement. However, we had no impression that the windfarm was avoided less during periods when the turbines were not rotating (D Walker, unpublished data).

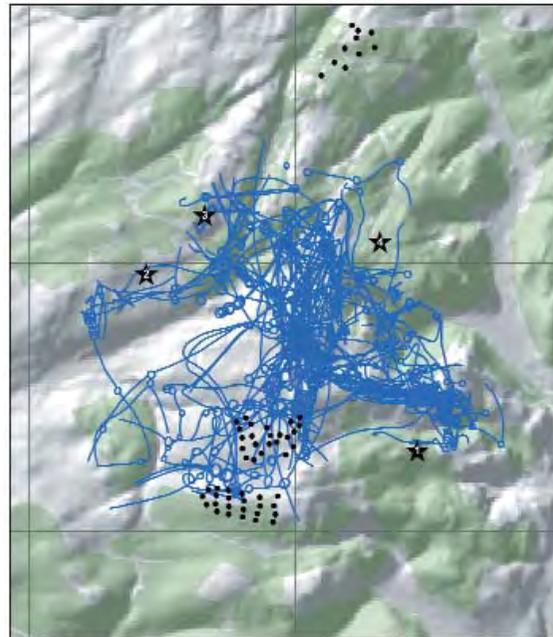
The kernel map of eagle ranging suggests that the windfarm may act as a barrier to some areas of the range for the eagles, however VP watches prior to construction did not suggest that the windfarm footprint was along any major transit route for the eagles.

The management plan for this windfarm included activities that potentially would reduce risk of collision by reducing prey availability within the windfarm. In addition, the enhancement of other areas for eagle prey was seen as providing new feeding opportunities for eagles. According to the grid based analysis eagles did appear to more frequently use an area where trees were felled to improve foraging potential. The random point analysis did not show this, though low sample size in the pre felling period could have caused this. Willow Ptarmigan numbers have increased here (S Sheridan unpublished data) since felling, and use of the area by eagles may increase further as prey numbers recover from being limited by blanket forest and their availability increases. This may further reduce the relative attractiveness of the land within and around the windfarm to eagles.

The relative use of different habitats by the eagles to some extent reflects their foraging potential. However, even within particular habitat types there can be variations in quality and prey carrying capacity. Still, so far the findings point to the Golden Eagles at Beinn an Tuirc being similar to eagles elsewhere and preferring open habitats to closed ones (McGrady 1997, McGrady *et al* 1997). In contrast, eagle use has increased in areas where managed tree felling occurred. The area where trees have been felled in mitigation of open ground lost to the windfarm notwithstanding, tree growth to canopy closure in other areas will restrict use by the eagles. McGrady *et al* (1997) show that eagles avoid areas of closed canopy forestry, probably because prey becomes less available.

Our impression from direct observations of eagles and cursory examination of pellets suggest that the eagles' most important food source is sheep carrion. It also appears that carrion availability varies spatially and temporally. Carrion hot spots are located in wet flushes on the eastern sloping open ground and the windfarm area, but there was no evidence of use of carrion within the windfarm area by eagles since construction. Most sheep carcasses are removed from the windfarm area when they are found, but some are not found and these have not been used by eagles (D Walker unpublished data). Carrion availability within the windfarm area has probably declined since construction. Rabbits, Willow Ptarmigan and Hooded Crows are the main live prey species we have recorded. This prey list is similar to that recorded for eagles elsewhere in western Scotland (Watson *et al* 1993).

Increased human activity can influence eagle behaviour (including breeding and foraging behaviours) and productivity (Watson 1997), and in general, eagles tend to avoid human activity. We have no data to suggest that increased visitor pressure has caused the eagles to change their ranging behaviour. Indeed, eagles did not go into the windfarm even when no people were there. However, we were unable to monitor eagle ranging at the site during construction when human activity was greatest because of access restrictions due to Foot and Mouth Disease. The windfarm is regularly visited by turbine technicians, shepherds and eagle project and other fieldworkers. None of these activities seem likely to cause reduced eagle use because they tend to be localised and relatively infrequent. It is possible that eagles are influenced more by human activity in artificial habitats (eg windfarms or newly felled forestry) than in natural habitats, but we know of no data to support this.



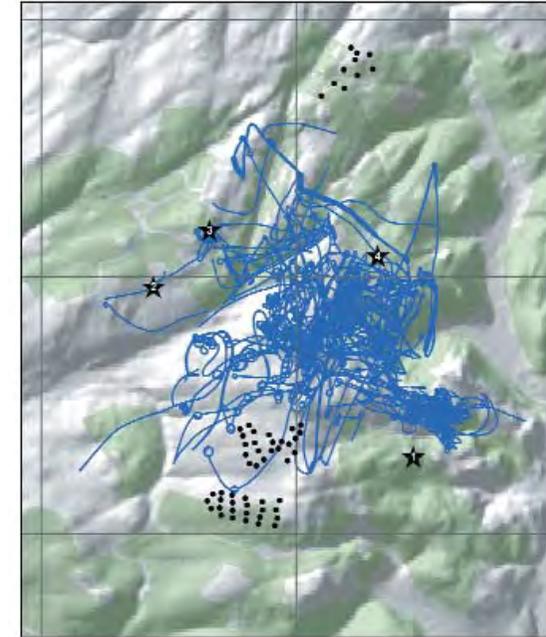
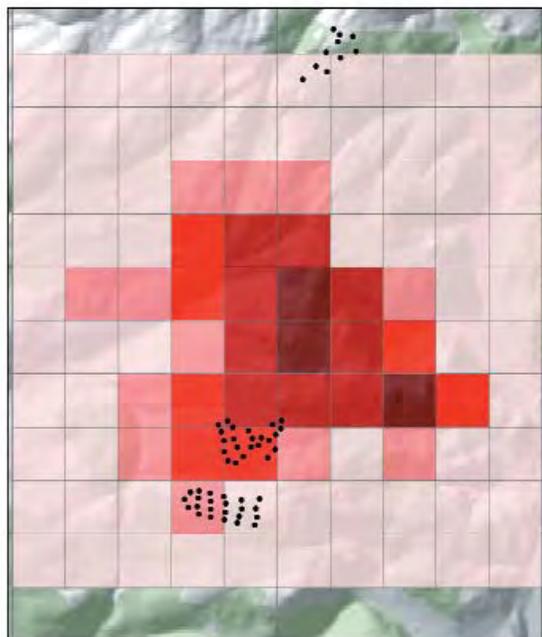
**Figure 7a** Flight paths (left), and grid of relative use of km squares (right) by Golden Eagles (male and female) before windfarm construction at Beinn an Tuirc.

**Legend**

- ★ Vantage points
- Turbines
- Flight lines
- Forestry

**Metres of flight line per km square**

- 0 - 5000
- 5001 - 10000
- 10001 - 20000
- 20001 - 40000
- > 40001



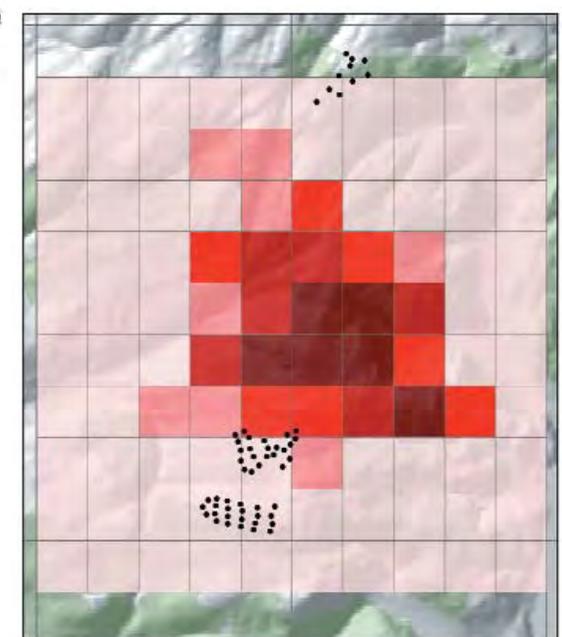
**Figure 7b** Flight paths (left), and grid of relative use of km squares (right) by Golden Eagles (male and female) after windfarm construction at Beinn an Tuirc.

**Legend**

- ★ Vantage points
- Turbines
- Flight lines
- Forestry

**Metres of flight line per km square**

- 0 - 5000
- 5001 - 10000
- 10001 - 20000
- 20001 - 40000
- > 40001



Intruding eagles were mostly recorded outside the breeding season over the main area of open ground and the tree felled area (D Walker unpublished data). When detected, the resident pair routinely intercepted intruding birds, even when they were towards the fringe of their range, with interactions usually consisting of the resident pursuing the intruder, sometimes with apparently aggressive approaches. In general locations away from the territory centre were associated with territorial defence behaviour, especially by the male (eg Figure 5, western edge of left map), and these added greatly to the size of the range that we mapped.

Different methods used to map animal movements have different advantages and shortcomings (Kenward 1987). We present different mapped representations of the same data to partially overcome this problem. Also, although these data are from a single pair, the number of observations (811 flight lines) is large, is spread over different seasons over 7 years, and this lessens the impact of the shortcomings of the range mapping methods.

Golden Eagle occupancy has not changed during the study period. Overall productivity of this range is 0.44 young per attempt (n=28, M Gregory, unpublished data), compared to an Argyll mean of 0.66 (1992, 96, 99-2004, Argyll Raptor Study Group, unpublished annual report 2004) and a Scottish mean of 0.52 (Watson 1997). Although productivity during the project was only 0.14 young per attempt, there is no evidence that links this low reproductive rate to windfarm construction or operation activities. Declines of this magnitude have been recorded in other ranges in Scotland where no windfarm, or indeed other change, has occurred, though we know of no published information that illustrates this. Rather, it seems that this home range has been relatively unproductive in recent years (only one chick since 1988), and this may be a result of the range viability already being

challenged by the expansion of forest (Watson *et al* 1987) and the impoverishment of the flora and fauna that has occurred (Thompson *et al* 1995). We have verified the presence of the adult territorial eagles every 2 weeks, and no eagles, territorial or non territorial, are known to have been killed by colliding with the turbines. There is no indication that the resident eagles have become accustomed to the windfarm area and are more likely to use it as time passes. It remains likely that any fledglings reared at the site, intruders, or new 'naïve' replacement breeders are at greatest risk of collision.

Because tree clearance roughly coincided with the construction of the windfarm, it is difficult to say to what extent eagles responded to the clearance rather than the windfarm. However, the avoidance of the windfarm since construction suggests that the existence of relatively open areas within the windfarm is not sufficient motivation to attract eagles for foraging. Further, if the shift to the north east is a result of windfarm avoidance, then it suggests the eagles, at least at Beinn an Tuirc, 'prefer' recently felled forest areas to the windfarm.

Interestingly, though there was an overall shift to the northeast, there was no real shift in the location of the core areas. These remained in the open area that has never been under forestry to the northeast of the windfarm between blocks of forestry. This result is likely influenced by the location of the nest sites, but supports the idea that these areas are particularly important. If this relative inflexibility in location of the core area is a feature of eagles elsewhere identifying the core area and protecting it may be particularly important. Guidance by Watson *et al* (1987) and modelling of eagle ranging (McGrady *et al* 1997, McLeod *et al* 2003a, 2003b) have established nominal core areas for eagles, but these are criticised as being too simplistic, and are a point of contention between developers, conservation organizations and government agencies. More

data are needed to clarify the impact of windfarms on eagles, and it would be useful if data collected at windfarm sites elsewhere in Scotland were made available for collective analyses.

#### Acknowledgements

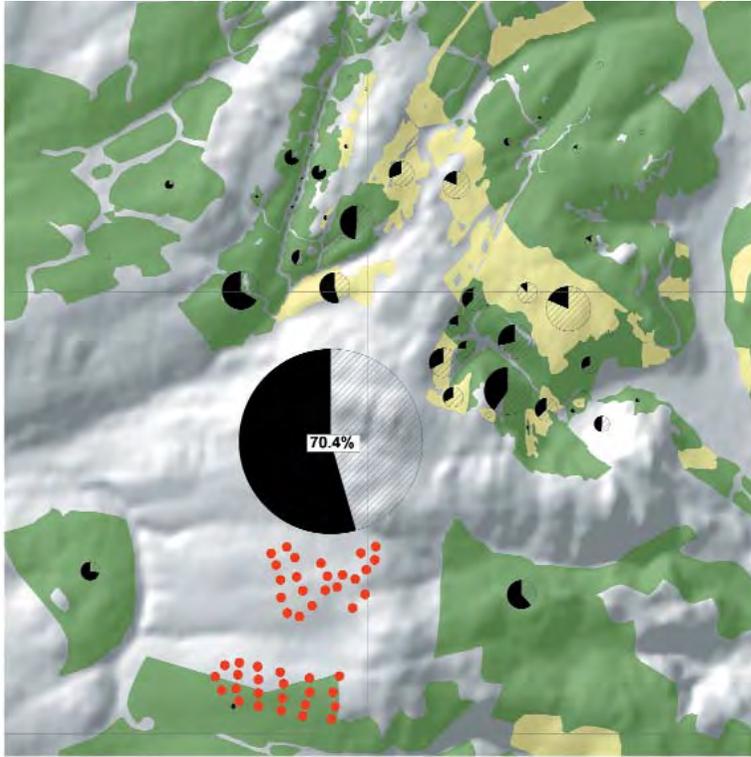
The authors would like to thank Mike Gregory and the Argyll Raptor Study Group for use of data on eagle productivity. Scottish Power funded data collection. Saya Sheridan provided information on habitat and prey within the windfarm management area. Steph Carey-Miller of Natural Research (Projects) provided GIS support. The Central Kintyre Management Group has provided a forum for interesting discussions on windfarms and their effects on eagles, and encouraged us to publish the results.

#### References

- British Wind Energy Association 2004. www.britishwindenergy.co.uk. Visited 3 Dec 2004.
- Curry R C & Kerlinger P 1998. Avian mitigation plan: Kenetech model wind turbines, Altamont Pass WRA, California. Proceedings of National Avian-Wind Power Planning Meeting III. San Diego, CA, USA.
- Gibbons D W, Reid J B & Chapman R A (eds.) 1993. *The new atlas of breeding birds in Britain and Ireland: 1988-1991*. T & AD Poyser. London.
- Hooge P N & Eichenlaub B 1997. Animal movement extension to Arcview. ver. 1.1. Alaska Science Center - Biological Science Office, U.S. Geological Survey, Anchorage, AK, USA.
- Hunt W G, Jackman R E, Hunt T L, Driscoll D E & Culp L 1999. A population study of Golden Eagles in the Altamont Pass wind resource area 1994-1997. Report to National Renewable Energy Laboratory, Subcontract XAT-6-16459-01. Predatory Bird Research Group, University of California, Santa Cruz.
- Hunt G 2002. Golden Eagles in a perilous landscape: predicting the effects of mitigation for wind turbine blade- strike mortality.

California Energy Commission. Predatory Bird Research Group, University of California, Santa Cruz. Contract No. 500-97-4033.

- Kenward R 1987. *Wildlife radio tagging*. Academic Press. London.
- Leddy K L, Higgins K F & Naugle D E 1999. Effects of wind turbines on upland nesting birds in conservation reserve program grasslands. *Wilson Bulletin* 11: 100-104.
- McGrady M J 1997. Golden eagle. *BWP Update* 1(2): 99-114.
- McGrady M J, McLeod D M, Petty S M, Grant J R & Bainbridge I P 1997. Eagles and forestry. Forestry Commission Research Information Note. No. 292. HMSO. London.
- McLeod D R A, Whitfield D P, Fielding A H, Haworth P & McGrady M J 2003a. Predicting home range use by Golden Eagles *Aquila chrysaetos* in western Scotland. *Avian Science* 2: 183-198.
- McLeod D R A, Whitfield D P & McGrady M J 2003b. Improving prediction of Golden Eagle (*Aquila chrysaetos*) ranging in western Scotland using GIS and terrain modelling. *Journal of Raptor Research* 36(1 Supplement): 70-77.
- Mohr C O 1947. Table of equivalent populations of North American small mammals. *American Midland Naturalist* 37: 223-249.
- Newton I. 1979. *Population ecology of raptors*. T & A D Poyser, Berkhamstead.
- Ratcliffe D 1990. *Birdlife of mountain and upland*. Cambridge University Press. Cambridge.
- Thompson D B A, Hester A J & Usher M B 1995. *Heaths and Moorland: Cultural Landscapes*. HMSO, Edinburgh.
- Tjernberg M 1983. Habitat and nest site features of Golden Eagle *Aquila chrysaetos* (L.) in Sweden. *Viltrevy* 12(5): 131-163.
- Watson J 1997. *The Golden Eagle*. T & A D Poyser, London.
- Watson J, Langslow D R & Rae S R 1987. The impact of land-use changes on Golden Eagles in the Scottish Highlands. *CSD Report No. 720*. Nature Conservancy Council, Peterborough.



**Figure 8** Use of habitat by Golden Eagles at Beinn an Tuirc. Size of pie chart shows relative use of habitat polygons for the whole study period, dark portion is percentage use before tree felling, and hatched portion is percentage use after tree felling.

Watson J, Leitch A F & Rae S R 1993. The diet of Golden Eagles *Aquila chrysaetos* in Scotland. *Ibis* 135:387-393.

Worton B J 1987. Kernel method for estimating the utilization distribution in home range studies. *Ecology* 70: 164-168.

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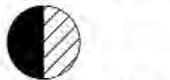
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*M McGrady is the corresponding author*

*Revised manuscript accepted February 2005*

Relative habitat use  
before and after tree felling



Post-felling

Pre-felling

Turbines

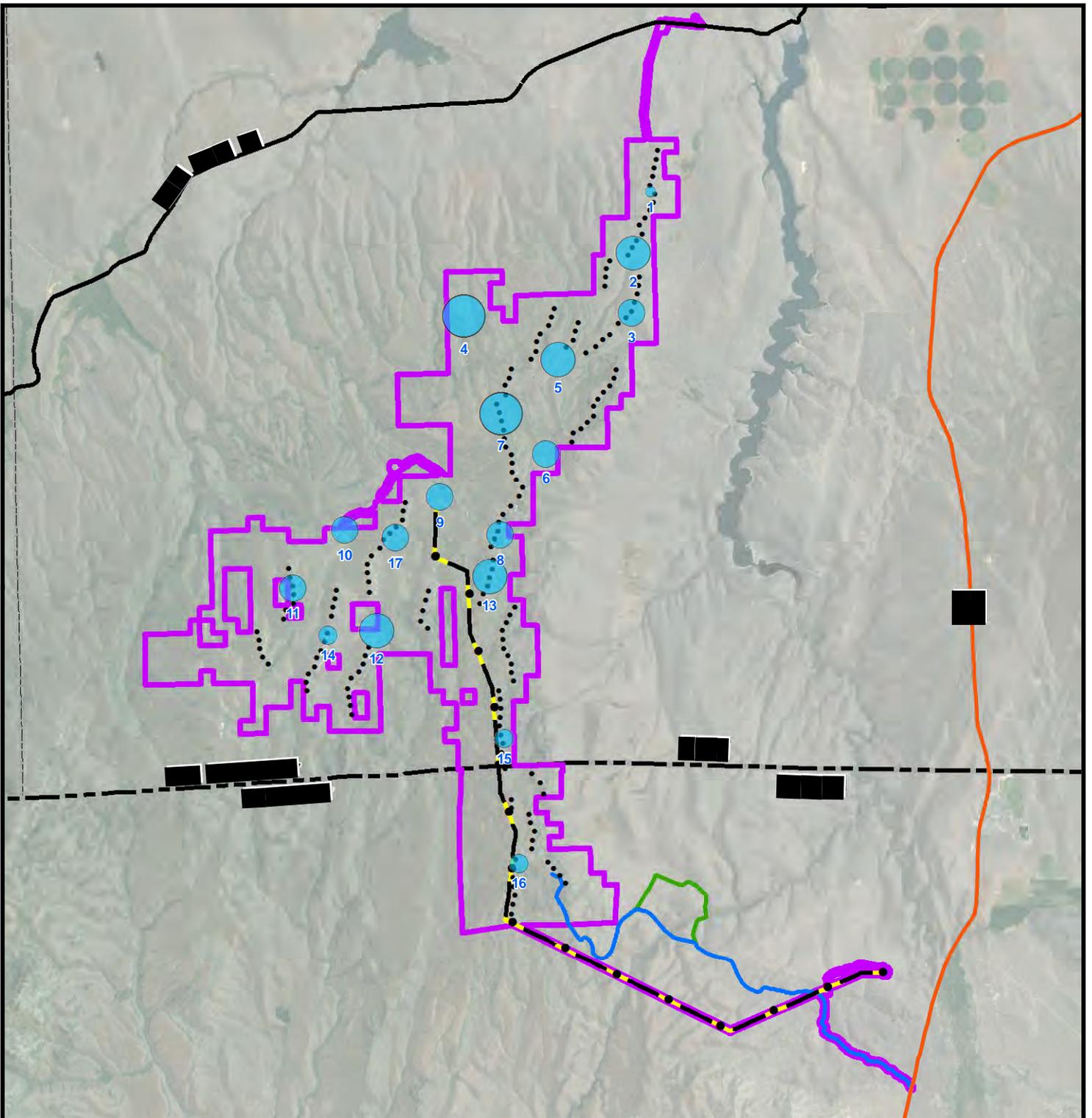
closed canopy

recent felling, including mitigation felling

| Year | Month   | Day | Plot # | Below 200m (min) | Above 200m (min) | Below Rotor (min) | Within Rotor (min) | Above Rotor (min) | Perched (min) | Below + Within Rotor (min) | Total eagle mins | Total eagles (birds) | Survey hours | Livestock? | Carcass |
|------|---------|-----|--------|------------------|------------------|-------------------|--------------------|-------------------|---------------|----------------------------|------------------|----------------------|--------------|------------|---------|
| 2011 | October | 3   | 1      | 0                | 0                | 0                 | 0                  | 0                 | 0             | 0.0                        | 0.0              | 0                    | 1            | No         | No      |
| 2011 | October | 3   | 2      | 1                | 0                | 0                 | 0                  | 0                 | 1             | 0.0                        | 0.0              | 0                    | 1            | No         | No      |
| 2011 | October | 3   | 3      | 0                | 0                | 7                 | 3                  | 1                 | 5             | 10.0                       | 11.0             | 3                    | 1            | No         | No      |
| 2011 | October | 3   | 4      | 1                | 2                | 0                 | 0                  | 0                 | 21            | 0.0                        | 0.0              | 0                    | 1            | No         | No      |
| 2011 | October | 3   | 5      | 0                | 1                | 0                 | 0                  | 0                 | 1             | 0.0                        | 0.0              | 0                    | 1            | No         | No      |
| 2011 | October | 3   | 6      | 23               | 5                | 0                 | 0                  | 0                 | 20            | 0.0                        | 0.0              | 0                    | 1            | No         | No      |
| 2011 | October | 12  | 1      | 1                | 2                | 0                 | 0                  | 0                 | 0             | 0.0                        | 0.0              | 0                    | 1            | No         | No      |
| 2011 | October | 12  | 2      | 0                | 1                | 9                 | 1                  | 0                 | 0             | 10.0                       | 10.0             | 6                    | 1            | No         | No      |
| 2011 | October | 12  | 3      | 2                | 3                | 0                 | 0                  | 0                 | 1             | 0.0                        | 0.0              | 0                    | 1            | No         | No      |
| 2011 | October | 12  | 4      | 10               | 2                | 0                 | 0                  | 0                 | 2             | 0.0                        | 0.0              | 0                    | 1            | No         | No      |
| 2011 | October | 12  | 5      | 0                | 2                | 0                 | 0                  | 0                 | 1             | 0.0                        | 0.0              | 0                    | 1            | No         | No      |
| 2011 | October | 12  | 6      | 0                | 0                | 0                 | 0                  | 0                 | 0             | 0.0                        | 0.0              | 0                    | 1            | No         | No      |

Optional data to include (if it serves project purposes)

Data FWS needs to run FWS collision Risk Model



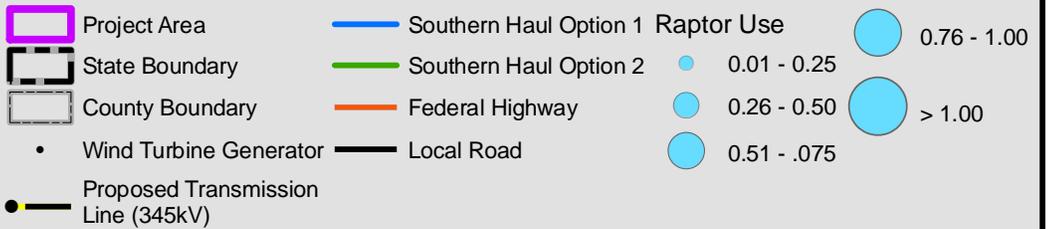
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0 0.5 1 2 3 4 5 Miles

00.51 2 3 4 5 Kilometers

**Figure 6**

**Raptor Use By Survey Point  
During 2008 Fixed-Point Surveys**



| Year | Month   | Day | Plot # | Below 200m (min) | Above 200m (min) | Below Rotor (min) | Within Rotor (min) | Above Rotor (min) | Perched (min) | Below + Within Rotor (min) | Total eagle mins | Total eagles (birds) | Survey hours | Livestock? | Carcass |
|------|---------|-----|--------|------------------|------------------|-------------------|--------------------|-------------------|---------------|----------------------------|------------------|----------------------|--------------|------------|---------|
| 2011 | October | 3   | 1      | 0                | 0                | 0                 | 0                  | 0                 | 0             | 0.0                        | 0.0              | 0                    | 1            | No         | No      |
| 2011 | October | 3   | 2      | 1                | 0                | 0                 | 0                  | 0                 | 1             | 0.0                        | 0.0              | 0                    | 1            | No         | No      |
| 2011 | October | 3   | 3      | 0                | 0                | 7                 | 3                  | 1                 | 5             | 10.0                       | 11.0             | 3                    | 1            | No         | No      |
| 2011 | October | 3   | 4      | 1                | 2                | 0                 | 0                  | 0                 | 21            | 0.0                        | 0.0              | 0                    | 1            | No         | No      |
| 2011 | October | 3   | 5      | 0                | 1                | 0                 | 0                  | 0                 | 1             | 0.0                        | 0.0              | 0                    | 1            | No         | No      |
| 2011 | October | 3   | 6      | 23               | 5                | 0                 | 0                  | 0                 | 20            | 0.0                        | 0.0              | 0                    | 1            | No         | No      |
| 2011 | October | 12  | 1      | 1                | 2                | 0                 | 0                  | 0                 | 0             | 0.0                        | 0.0              | 0                    | 1            | No         | No      |
| 2011 | October | 12  | 2      | 0                | 1                | 9                 | 1                  | 0                 | 0             | 10.0                       | 10.0             | 6                    | 1            | No         | No      |
| 2011 | October | 12  | 3      | 2                | 3                | 0                 | 0                  | 0                 | 1             | 0.0                        | 0.0              | 0                    | 1            | No         | No      |
| 2011 | October | 12  | 4      | 10               | 2                | 0                 | 0                  | 0                 | 2             | 0.0                        | 0.0              | 0                    | 1            | No         | No      |
| 2011 | October | 12  | 5      | 0                | 2                | 0                 | 0                  | 0                 | 1             | 0.0                        | 0.0              | 0                    | 1            | No         | No      |
| 2011 | October | 12  | 6      | 0                | 0                | 0                 | 0                  | 0                 | 0             | 0.0                        | 0.0              | 0                    | 1            | No         | No      |

Optional data to include (if it serves project purposes)

Data FWS needs to run FWS collision Risk Model



May 24, 2013

Ms. Margaret Rheude  
 US Fish and Wildlife Service  
 4101 American Boulevard East  
 Bloomington, MN 55425

RE: Odell Wind Farm and Transmission Line in Southwest Minnesota

Dear Ms. Margaret Rheude:

Odell Wind Farm, LLC (Odell Wind Farm), a wholly owned subsidiary of Geronimo Wind Energy, LLC, is gathering information and requesting agency comments for a proposed wind energy project and transmission line in Cottonwood, Jackson, Martin, and Watonwan Counties, Minnesota. The proposed project will be up to 200 MW.

Odell Wind Farm intends to submit a Site Permit Application for a Large Wind Energy Conversion System and a Route Permit Application for a High Voltage Transmission Line to the Minnesota Public Utilities Commission (PUC). The Odell Wind Farm will include wind turbines and associated facilities, including gravel access roads, an underground collector system, two substations, meteorological monitoring stations, an operations and maintenance facility, and a 115 kV transmission line.

Turbine locations, access roads and electrical connections have not been finalized at this time. Table 1 provides the sections of land Odell Wind Farm is evaluating for siting the wind energy project.

**Table 1 –Sections within the Odell Wind Farm Project Boundary**

| County Name | Township Name | Township | Range | Sections                                                                                   |
|-------------|---------------|----------|-------|--------------------------------------------------------------------------------------------|
| Cottonwood  | Lakeside      | 105N     | 35W   | 22, 23, 24, 25, 26, 35, 36                                                                 |
| Cottonwood  | Mountain Lake | 105N     | 34W   | 12, 13, 14, 15, 16, 17, 19, 20, 21, 22, 23, 24, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36 |
| Jackson     | Christiana    | 104N     | 35W   | 1, 2, 12                                                                                   |
| Jackson     | Kimball       | 104N     | 34W   | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 17, 18, 19, 20, 21                              |
| Martin      | Cedar         | 104N     | 33W   | 4, 5, 6, 7, 8, 9, 16, 17                                                                   |
| Watonwan    | Odin          | 105N     | 33W   | 7, 18                                                                                      |

Similarly, the transmission line route is not yet finalized. Table 2 identifies the land in the transmission route evaluation area, which is the area currently being considered for the transmission route and possible alternative routes.

**Table 2 –Sections Included in the Transmission Route Evaluation Area\***

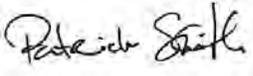
| County Name                                                                                                                                                | Township Name | Township | Range | Sections                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------|-------|--------------------------|
| Cottonwood                                                                                                                                                 | Mountain Lake | 105N     | 34W   | 32, 33, 34, 35, 36       |
| Jackson                                                                                                                                                    | Kimball       | 104N     | 34W   | 1, 2, 3, 4, 5            |
| Martin                                                                                                                                                     | Cedar         | 104N     | 33W   | 4, 5, 6, 7, 8, 9, 16, 17 |
| *The Sections in Table 2 are also included in Table 1 because the prospective transmission routes are located within the current Odell Wind Farm boundary. |               |          |       |                          |

To facilitate your review, we have enclosed a map of Odell Wind Farm’s location and project boundary. The transmission route evaluation area is also indicated on the map.

We welcome any comments the US Fish and Wildlife Service may have at this time or throughout the permit application process. Any comments provided will be incorporated into the PUC review process for the Odell Wind Farm.

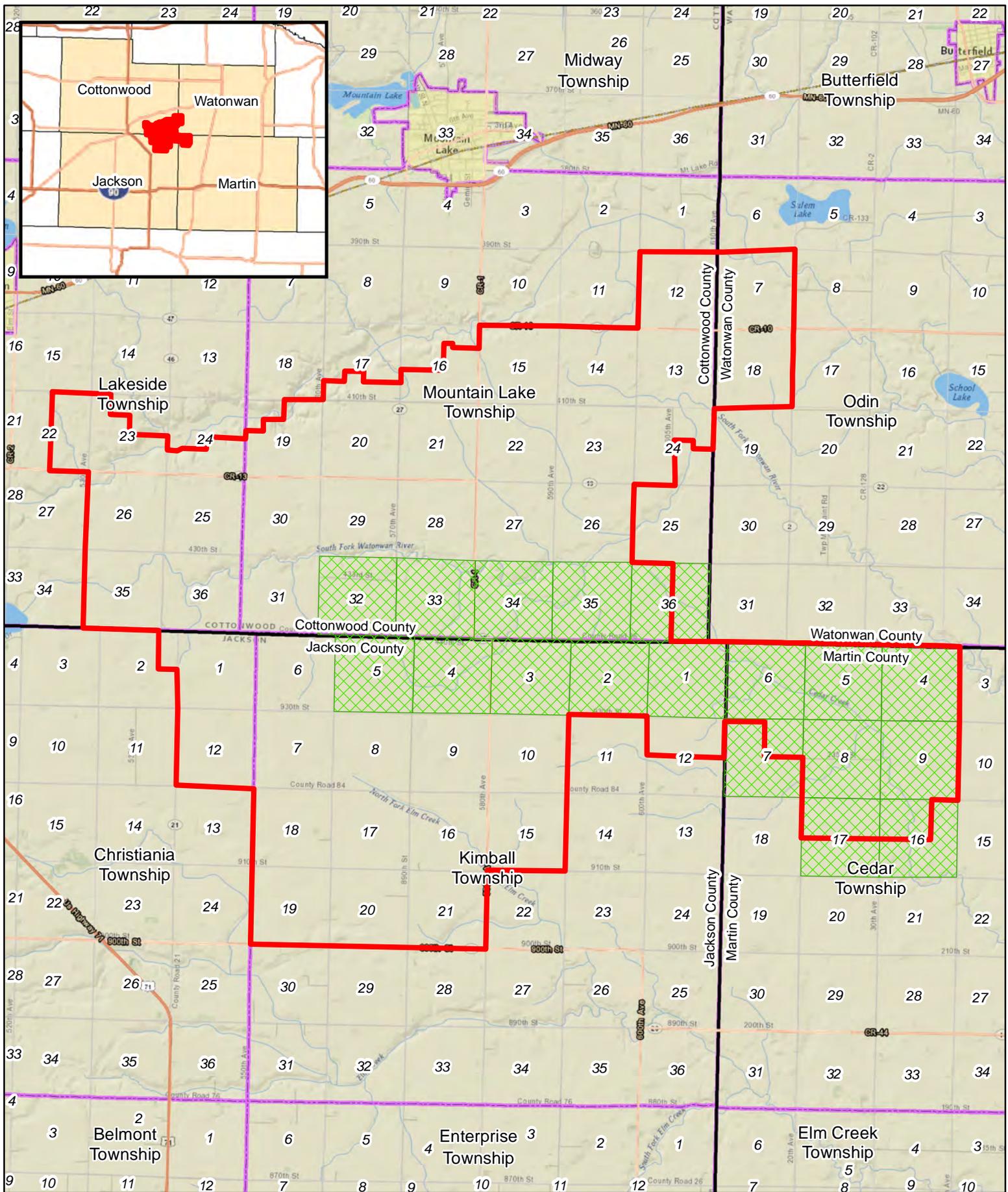
If you require further information or have questions regarding this matter, please contact me at 952-988-9000 or at Patrick@geronimoenergy.com

Sincerely,

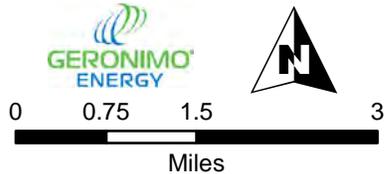


Patrick Smith  
 Director of Environmental Planning

Enclosures:  
 Odell Wind Farm Project Location Map



- Odell Footprint
- Route Evaluation Area
- County
- County Subdivisions



# Project Location Map



May 24, 2013

Mr. Tony Sullins  
 U.S. Fish and Wildlife Service  
 4101 East 80th Street  
 Bloomington, MN 55425

RE: Odell Wind Farm and Transmission Line in Southwest Minnesota

Dear Mr. Tony Sullins:

Odell Wind Farm, LLC (Odell Wind Farm), a wholly owned subsidiary of Geronimo Wind Energy, LLC, is gathering information and requesting agency comments for a proposed wind energy project and transmission line in Cottonwood, Jackson, Martin, and Watonwan Counties, Minnesota. The proposed project will be up to 200 MW.

Odell Wind Farm intends to submit a Site Permit Application for a Large Wind Energy Conversion System and a Route Permit Application for a High Voltage Transmission Line to the Minnesota Public Utilities Commission (PUC). The Odell Wind Farm will include wind turbines and associated facilities, including gravel access roads, an underground collector system, two substations, meteorological monitoring stations, an operations and maintenance facility, and a 115 kV transmission line.

Turbine locations, access roads and electrical connections have not been finalized at this time. Table 1 provides the sections of land Odell Wind Farm is evaluating for siting the wind energy project.

**Table 1 –Sections within the Odell Wind Farm Project Boundary**

| County Name | Township Name | Township | Range | Sections                                                                                   |
|-------------|---------------|----------|-------|--------------------------------------------------------------------------------------------|
| Cottonwood  | Lakeside      | 105N     | 35W   | 22, 23, 24, 25, 26, 35, 36                                                                 |
| Cottonwood  | Mountain Lake | 105N     | 34W   | 12, 13, 14, 15, 16, 17, 19, 20, 21, 22, 23, 24, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36 |
| Jackson     | Christiana    | 104N     | 35W   | 1, 2, 12                                                                                   |
| Jackson     | Kimball       | 104N     | 34W   | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 17, 18, 19, 20, 21                              |
| Martin      | Cedar         | 104N     | 33W   | 4, 5, 6, 7, 8, 9, 16, 17                                                                   |
| Watonwan    | Odin          | 105N     | 33W   | 7, 18                                                                                      |

Similarly, the transmission line route is not yet finalized. Table 2 identifies the land in the transmission route evaluation area, which is the area currently being considered for the transmission route and possible alternative routes.

**Table 2 –Sections Included in the Transmission Route Evaluation Area\***

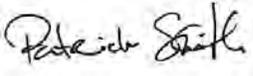
| County Name                                                                                                                                                | Township Name | Township | Range | Sections                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------|-------|--------------------------|
| Cottonwood                                                                                                                                                 | Mountain Lake | 105N     | 34W   | 32, 33, 34, 35, 36       |
| Jackson                                                                                                                                                    | Kimball       | 104N     | 34W   | 1, 2, 3, 4, 5            |
| Martin                                                                                                                                                     | Cedar         | 104N     | 33W   | 4, 5, 6, 7, 8, 9, 16, 17 |
| *The Sections in Table 2 are also included in Table 1 because the prospective transmission routes are located within the current Odell Wind Farm boundary. |               |          |       |                          |

To facilitate your review, we have enclosed a map of Odell Wind Farm’s location and project boundary. The transmission route evaluation area is also indicated on the map.

We welcome any comments the 4101 East 80th Street may have at this time or throughout the permit application process. Any comments provided will be incorporated into the PUC review process for the Odell Wind Farm.

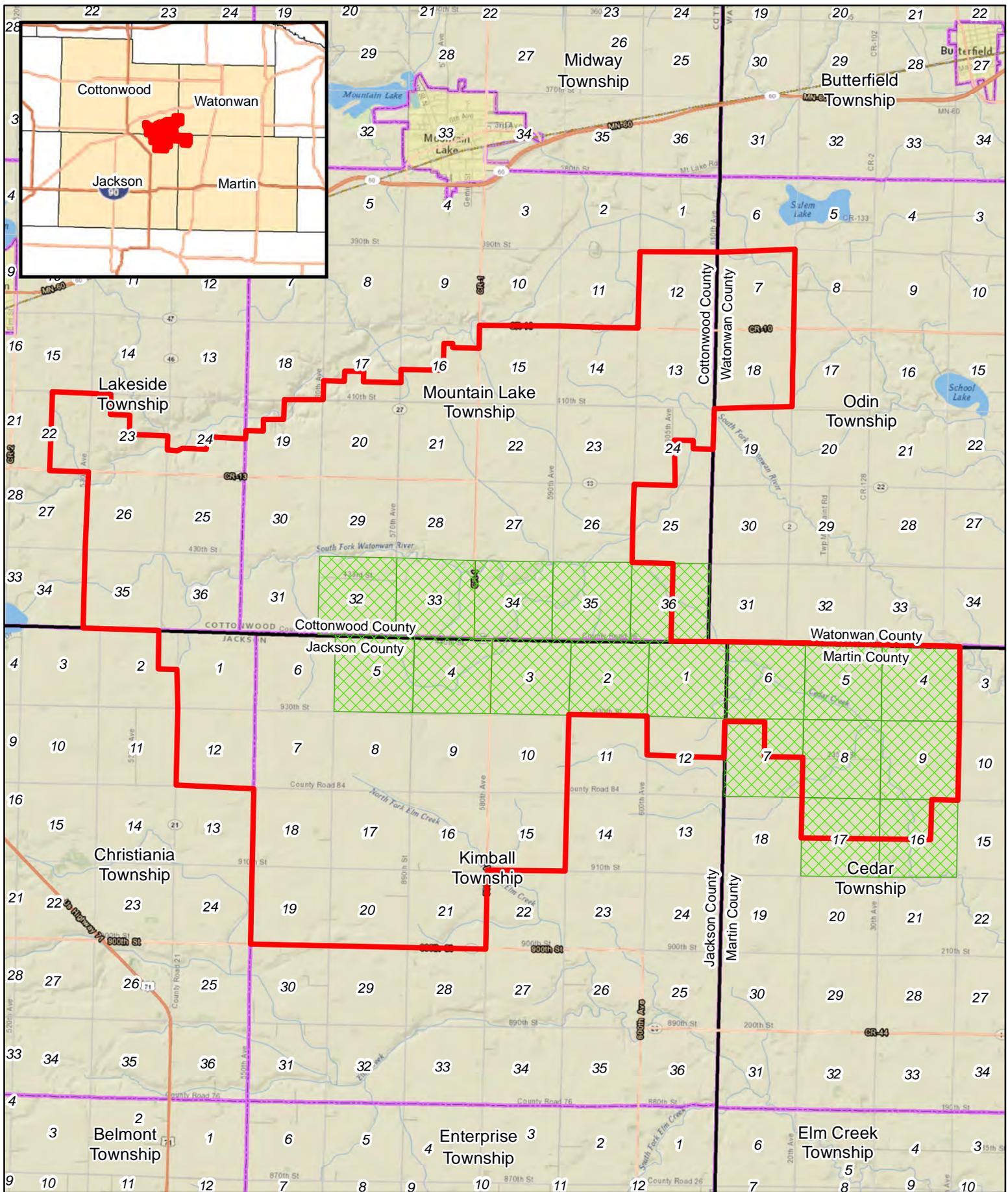
If you require further information or have questions regarding this matter, please contact me at 952-988-9000 or at Patrick@geronimoenergy.com

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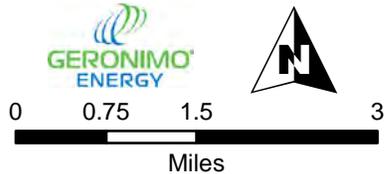


Patrick Smith  
 Director of Environmental Planning

Enclosures:  
 Odell Wind Farm Project Location Map



-  Odell Footprint
-  Route Evaluation Area
-  County
-  County Subdivisions



# Project Location Map

**Swenson, Kristen**

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**From:** Heather L. Wayne  
**Sent:** Tuesday, June 18, 2013 3:29 PM  
**To:** Margaret\_Rheude@fws.gov  
**Cc:** heather.kieweg@appliedeco.com; Jordan B. Burmeister; Patrick Smith  
**Subject:** Meeting Minutes for Odell Wind Farm  
**Attachments:** OdellWindFarm-USFWS-MeetingMinutes05132013\_sent06182013.docx

Hi Mags-

Thank you again for your time and input on the Odell Wind Farm.

I've attached a draft of the meeting minutes from our discussion.

Will you please review the minutes and let me know if we missed anything or if you have anything to add?

Thank you.

Have a good week,

**Heather Wayne**

Associate

Direct: 952.641.4043

[www.geronimoenergy.com](http://www.geronimoenergy.com)



## **Odell Wind Farm and U.S. Fish and Wildlife Service**

Meeting Minutes  
Bald Eagle Discussion  
May 13, 2013  
9:30 Telephone Call

### **Attendees:**

U.S. Fish and Wildlife Service (“USFWS”)-Margaret Rheude  
Applied Ecological Services, Inc. (“AES”) –Heather Kieweg  
Geronimo Wind Energy, LLC as an agent for Odell Wind Farm, LLC (“Geronimo”) –  
Patrick Smith, Jordan Burmeister, Heather Wayne

### **General Project Information:**

Team Introductions

Project Introduction: Odell Wind Farm (“Odell” or “the project”) is being actively developed by Geronimo. It is expected to be up to 200 MW in size. It is located in southwest Minnesota and includes portions of Jackson, Cottonwood, Martin, and Watonwan Counties. It is located near several other constructed wind farms including: Trimont and Elm Creek 1 & 2. The Lakefield Wind Farm is located twenty miles to the southwest of the site. Geronimo began development of the project in 2008, at which point it was called the North Star Wind Farm. According to the current timeline construction will be in 2014 with permitting in 2013.

AES, in conjunction with WSB Associates, is helping Geronimo assess potential environmental impacts from the project.

### **Eagle Discussion and Environmental Assessments:**

The USFWS *Eagle Conservation Plan Guidance Module 1 Land Based Wind Energy Version 2* were released one week previous to this discussion.

A stick nest search and habitat assessment was conducted from the public right-of-way for the project area, a 2-mile buffer of the project area and some areas of higher quality eagle habitat from 2-10 miles from the project. AES located an active eagle nest about 3.5 miles west of the project boundary, along the Des Moines River.

Margaret Rheude is aware of the nest mentioned above. She said that 3.5 miles is a good ways away, but Geronimo should see which way the eagles are moving, or if they are just hanging out near the river. They might be staying west of the project near the Des Moines River.

The USFWS recommends doing eagle surveys with an 800 meter radius and keeping counts of eagles above and below 200 meters in elevation. The USFWS uses 200 meters as the top end of the rotor swept area. They also recommend keeping track of eagle minutes in the radius and getting representative samples during different seasons throughout the year. These recommendations are compatible with AES data collection methods. Margaret Rheude will send sample eagle data and maps in formats that have been useful to the USFWS and are compatible with their collision risk model.

Patrick Smith asked about the threshold for seeking a take permit. Margaret Rheude responded saying that the risk is determined using the USFWS' collision risk model. The models help assess the likelihood of incidental eagle take. A take permit is recommended if the model predicts an eagle take in a thirty year project lifespan. This would be considered a low level of potential take, and would not mean that the project was a high risk project. She also said the take permit is a recommendation, not a requirement. There is some gray area, but if an entity wants to be covered they should seek a permit. Geronimo can also run their model to analyze the potential for eagle take at the site. She will also check and see if the Odell project is near any USFWS interest lands.

Geronimo has an NHIS information request submitted now. It is pending response.

Margaret Rheude will conduct a desktop analysis of known nests in a ten mile radius, and share any known nest locations. The USFWS maintains an eagle nest database as eagle nest locations are reported to them. The MNDNR no longer updates eagle nest locations. Margaret Rheude reported that there are not a huge number of eagle nests in the part of the state where Odell is located. The population is growing in the area, but not experiencing as fast of growth as other areas of the state near major rivers like the Minnesota and St. Croix Rivers. She also reported that because of population growth, eagles are moving into less ideal habitat.

Margaret Rheude recommended being aware of potential eagle habitat hotspots (popular fishing areas, refuge dumps, or waterbodies that stay open through the winter). Heather Kieweg commented that the water bodies in the project area usually freeze, and that some bald eagle activity has been observed in and near the site during surveys completed to date.

Heather Kieweg reported that AES is using point counts that are one hour in duration for its raptor surveys. Margaret Rheude agreed this was a good point count length. She commented that the guidelines recommend counts every month, and once there is a year of data to check for pulses in population numbers, because those numbers can help in operational analysis. She said that survey frequency can potentially be decreased to account for time periods when behavior/activity is likely to be similar. Greater survey frequency may be necessary during migratory periods.

#### **Bat Discussion and Other Topics:**

Heather Kieweg and/or Patrick Smith said there is very little natural habitat in the site. There is one area with a prairie remnant in the northeast portion of the project that will be avoided.

Patrick will send a link to the statewide turbine map data indicating constructed turbines.



AES has prepared a Tier I and Tier II analysis and there is nothing that really stands out. The two USFWS species listed for the project counties are the Poweshiek Skipperling and Prairie Bush Clover.

Geronimo/AES is conducting full spectrum bat acoustic monitoring at three locations with monitors at two elevations at each location.

The northern long eared bat is a proposed MN candidate species. Margaret Rheude recommended keeping this in mind. Heather Kieweg noted that the site is not forested, although it could be present at the site during migration. Margaret Rheude was not aware of a timeline for making a decision regarding listing, but she would inquire. She was also unsure of if the listing will include the full extent of the species' range.

Margaret Rheude was not currently aware of any other issues for the site, but she will review the site in more detail before providing additional comments. Her comments will include the recommended setbacks from USFWS protected lands. The USFWS' main focus will be eagles, threatened and endangered species, and protected lands. She said the USFWS tries not to duplicate migratory bird work since the MNDNR focuses on those issues.

Patrick Smith said he was not aware of hibernacula in the area (using state database). Margaret Rheude said that it would again be good to see how much bat movement occurs between the project and water resources, or to note if bats stay near the main river without straying too far. Heather Kieweg said the data will be analyzed and reported to the USFWS and other relevant agencies.