

June 24, 2022



VIA E-MAIL AND FEDERAL EXPRESS

Mr. Steven Kahl
Executive Secretary
North Dakota Public Service Commission
600 E. Boulevard, Dept. 408
Bismarck, ND 58505-0480

**RE: Badger Wind, LLC's Application for a Certificate of Site Compatibility for the Badger Wind Project in McIntosh and Logan Counties, North Dakota
Case No. PU-22-086**

Dear Mr. Kahl:

Enclosed for filing for Badger Wind, LLC ("Badger Wind") in connection with the above-referenced matter are an original and six (6) copies of proposed hearing exhibit **BW Exhibit 31** (Additional USFWS and NDGF Correspondence) and an updated index.

Electronic copies of this letter and the above-referenced proposed hearing exhibit were filed with the Commission today via e-mail, with hard copies sent to the Commission via Federal Express.

If you have any questions, please let me know.

Sincerely,

A handwritten signature in cursive script that reads "Mollie M. Smith".

MOLLIE M. SMITH

MMS/ms/76434563

Enclosures

cc: Victor Schock (w/ encls.)
Mitchell Armstrong (w/ encls.)
Sarah Aftergood (w/ encls.)

Attorneys & Advisors
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STATE OF NORTH DAKOTA
PUBLIC SERVICE COMMISSION

**IN THE MATTER OF BADGER WIND, LLC'S
APPLICATION FOR A CERTIFICATE OF
SITE COMPATIBILITY FOR THE BADGER
WIND PROJECT IN MCINTOSH AND LOGAN
COUNTIES, NORTH DAKOTA**

Case No. PU-22-086

CERTIFICATE OF SERVICE

Malinda Maier, being first duly sworn, does depose and state that on June 24, 2022, this Certificate of Service and true and correct copies of Badger Wind, LLC's Filing Letter, proposed **BW Exhibit 31** (Additional USFWS and NDGF Correspondence), and updated index were sent by electronic mail to:

Steven Kahl
Executive Secretary
North Dakota Public Service
Commission
600 E. Boulevard, Dept. 408
Bismarck, ND 58505-0480
ndpsc@nd.gov

Victor Schock
Director, Public Utilities Division
North Dakota Public Service Commission
600 E. Boulevard, Dept. 408
Bismarck, ND 58505-0480
vschock@nd.gov

Mitchell Armstrong
Special Assistant Attorney General
ND Public Service Commission
600 E. Boulevard, Dept. 408
Bismarck, ND 58505-0480
marmstrong@smithporsborg.com

Hope L. Hogan
Administrative Law Judge
Office of Administrative Hearings
2911 North 14th Street, Suite 303
Bismarck, ND 58503
hlhogan@nd.gov

Mr. Kevin Pranis
Marketing Manager
LIUNA Minnesota & North Dakota
81 E. Little Canada Road
St. Paul, MN 55117
kpranis@liunagroc.com

and sent via Federal Express to:

Steven Kahl
Executive Secretary
North Dakota Public Service
Commission

600 E. Boulevard, Dept. 408
Bismarck, ND 58505-0480
(7 copies)

Signed: /s/ Malinda M. Maier

Fredrikson & Byron, P.A.
200 South Sixth Street
Suite 4000
Minneapolis, MN 55402

76434627 v1

BADGER WIND, LLC

Badger Wind Project – Logan & McIntosh Counties
Siting Application Case No. PU-22-086

STATE OF NORTH DAKOTA
PUBLIC SERVICE COMMISSION

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From: Sarah Aftergood
Sent: Thursday, June 23, 2022 4:37 PM
To: 'Riddle, Heidi L' <heidi_riddle@fws.gov>; Becker, Drew N <Drew_Becker@fws.gov>
Subject: FW: Badger Wind Farm Project

Hi Heidi/Drew,

I sent the below update for the project to Elisha and I apologize I didn't include you in that correspondence. If you have any concerns please let me know.

Best regards,
Sarah Aftergood
Director of Environmental Permitting
Environmental Permitting
Onshore

Ørsted
Tel. +15122302148

From: Sarah Aftergood
Sent: Tuesday, June 14, 2022 3:27 PM
To: Mueller, Elisha K. <ekmueller@nd.gov>; Nicholas Gebauer <NIGEB@orsted.com>
Subject: Badger Wind Farm Project

Hi Elisha,

I just wanted to provide you with a quick update to our project that will be conveyed during the Public Hearing, it is possible we may build all 79 turbines due to a potential change in the turbine itself. The helpful news in that the foundations won't change in size and all of the assessments we've done to date have assessed all 79 locations so no

surprises in regards to impact. I don't have a clear line of sight on when the final turbine will be selected but once we do, I will provide another update at that time.

Let me know if you have any questions in the meantime.

Best regards,
Sarah Aftergood
Director of Environmental Permitting
Environmental Permitting
Onshore

Tel. +15122302148
saraf@orsted.com



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Austin, TX 78701

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From: Sarah Aftergood
Sent: Tuesday, June 21, 2022 11:42 AM
To: 'Riddle, Heidi L' <heidi_riddle@fws.gov>
Cc: Becker, Drew N <Drew_Becker@fws.gov>
Subject: RE: [EXTERNAL] Badger Wind Farm Eagles-USFWS coordination

Hi Heidi and Drew,

Thank you for the call today. I have noted that although our site is of low risk, environmental conditions can change over time which could allow for the presence of species like the Piping plover. Will touch base after the hearing on next steps for developing PCMM, eagle mitigation and the potential for NLEB to be listed. Talk soon!

Best regards,
Sarah Aftergood
Director of Environmental Permitting
Environmental Permitting
Onshore

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Tel. +15122302148

From: Riddle, Heidi L <heidi_riddle@fws.gov>
Sent: Thursday, June 16, 2022 3:00 PM
To: Sarah Aftergood <SARAF@orsted.com>
Subject: RE: [EXTERNAL] Badger Wind Farm Eagles-USFWS coordination

Hi Sarah,

We could talk next week, Tuesday the 21st if you would like. In the meantime, my comments were to point out that there are some unknowns that were not really addressed in the BBCS, mainly that there could be operational impacts due to turbine strikes, to both birds and bats. One way to address them would be to increase

BW Exhibit 31

post-construction monitoring and use any data from that to inform adaptive management decisions. This is ultimately the company's decision of course, and whatever level of risk they are comfortable with. I just wanted to provide the information, especially given that there is a possibility that the 4d rule for northern long-eared bat could go away IF the species is uplisted. Also, the presence of piping plovers is another question mark, as it isn't clear how/if they are using the project area.

Thank you,
Heidi

Heidi Riddle, CWB®
Fish and Wildlife Biologist
USFWS North Dakota Ecological Services Field Office
3425 Miriam Ave
Bismarck, ND 58501
(701) 355-8545
heidi_riddle@fws.gov

From: Sarah Aftergood <SARAF@orsted.com>
Sent: Thursday, June 16, 2022 1:28 PM
To: Riddle, Heidi L <heidi_riddle@fws.gov>
Subject: RE: [EXTERNAL] Badger Wind Farm Eagles-USFWS coordination
Importance: High

Hi Heidi.

Can we have a meeting in the next few days regarding your comments from June 8th? Point 4 has been addressed in the revised BBCS, but the first 3 I need some more clarity onto as to next steps from your end. We can do a new update to the BBCS that addresses these 3 comments but I'd like to understand what we need to do to fully address these concerns.

Hi Sarah, please see my comments in response to your email.

- 1) Acoustic monitoring alone may not be sufficient to determine presence of NLEB. Most bat experts agree that even in-hand identification is difficult. Positive identification using only acoustics is extremely difficult.
- 2) Given that less than 0.1 acre of wooded areas will be cleared in the Project Area, outside of the NLEB roosting season, the greater concern would seem to be operational impacts to NLEB.
- 3) Re: PIPL, again, I would note that the potential for operational impacts is at least as great as disturbance impacts from construction of turbines. My recommendation about assessing suitability of wetlands within the project area was also pertaining to movement of plovers between habitat in the project area.
- 4) In my original April 8, 2022, email, I recommended including any voluntary offset information in the BBCS, as well as using NDGF's impact analysis document when determining estimates; I am still unclear on whether Badger Wind will incorporate that recommendation(s).

Please let me know your availability over the next few days and I will set up a meeting. If that isn't possible, perhaps some clarity of further expectations on how we address these 3 items would be helpful.

Let me know.

Best regards,
Sarah Aftergood
Director of Environmental Permitting
Environmental Permitting
Onshore

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Tel. +15122302148

From: Riddle, Heidi L <heidi_riddle@fws.gov>
Sent: Wednesday, June 8, 2022 5:28 PM
To: Sarah Aftergood <SARAF@orsted.com>
Subject: RE: [EXTERNAL] Badger Wind Farm Eagles-USFWS coordination

Sounds good. Thanks Sarah, and good luck with the deadline! A busy time, I'm sure.

From: Sarah Aftergood <SARAF@orsted.com>
Sent: Wednesday, June 8, 2022 4:45 PM
To: Riddle, Heidi L <heidi_riddle@fws.gov>; Francesca Martella <FRKEH@orsted.com>
Subject: RE: [EXTERNAL] Badger Wind Farm Eagles-USFWS coordination

I will reach out this week. We have been busy making our deadline for the exhibits for the state hearing 😊.

Best regards,
Sarah Aftergood
Director of Environmental Permitting
Environmental Permitting
Onshore

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Tel. +15122302148

From: Riddle, Heidi L <heidi_riddle@fws.gov>
Sent: Wednesday, June 8, 2022 4:42 PM
To: Francesca Martella <FRKEH@orsted.com>
Cc: Sarah Aftergood <SARAF@orsted.com>
Subject: RE: [EXTERNAL] Badger Wind Farm Eagles-USFWS coordination

Hello Francesca and Sarah,

I am going through some emails and see that I didn't respond to this one. I believe I recommended that Sarah contact our Regional Office, Migratory Birds Division. Sarah, have you made contact with them?

Thanks,
Heidi

Heidi Riddle, CWB®
Fish and Wildlife Biologist
USFWS North Dakota Ecological Services Field Office
3425 Miriam Ave
Bismarck, ND 58501
(701) 355-8545

heidi_riddle@fws.gov

From: Francesca Martella <FRKEH@orsted.com>
Sent: Thursday, March 3, 2022 1:43 PM
To: Riddle, Heidi L <heidi_riddle@fws.gov>
Cc: Sarah Aftergood <SARAF@orsted.com>
Subject: RE: [EXTERNAL] Badger Wind Farm Eagles-USFWS coordination

Perfect! I will set it up.

Are there any other people at USFWS that would like to have access? I would just need their emails to grant them access.

Best regards,
Francesca Martella
Project Developer
West Regional Development
Onshore

Ørsted
Tel. +13475220931

From: Riddle, Heidi L <heidi_riddle@fws.gov>
Sent: Thursday, March 3, 2022 2:03 PM
To: Francesca Martella <FRKEH@orsted.com>
Cc: Sarah Aftergood <SARAF@orsted.com>
Subject: RE: [EXTERNAL] Badger Wind Farm Eagles-USFWS coordination

Hello Francesca,

Yes, let's try that. Occasionally we have issues using certain sites, but it's changed so much that I don't even know what's best right now. Go ahead and send me the access info and we'll go from there!

Thank you for working on this,
Heidi

Heidi Riddle, CWB®
Fish and Wildlife Biologist
USFWS North Dakota Ecological Services Field Office
3425 Miriam Ave
Bismarck, ND 58501
(701) 355-8545
heidi_riddle@fws.gov

From: Francesca Martella <FRKEH@orsted.com>
Sent: Thursday, March 3, 2022 8:29 AM
To: Riddle, Heidi L <heidi_riddle@fws.gov>
Cc: Sarah Aftergood <SARAF@orsted.com>
Subject: RE: [EXTERNAL] Badger Wind Farm Eagles-USFWS coordination

Hi Heidi,

Following up on this. Would a shared Box folder work for you? We can set one up where you and anybody from your office would have access. We will save the BBCS in the Box folder.

Best regards,
Francesca Martella
Project Developer
West Regional Development
Onshore

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Tel. +13475220931

From: Riddle, Heidi L <heidi_riddle@fws.gov>
Sent: Tuesday, March 1, 2022 10:28 AM
To: Francesca Martella <FRKEH@orsted.com>
Subject: FW: [EXTERNAL] Badger Wind Farm Eagles-USFWS coordination

From: Riddle, Heidi L
Sent: Tuesday, March 1, 2022 9:00 AM
To: Sarah Aftergood <SARAF@orsted.com>
Subject: RE: [EXTERNAL] Badger Wind Farm Eagles-USFWS coordination

Hi Sarah,

We have been struggling to find a site that allows us to access large files. Do you have a ftp site? I have found that sometimes they work. Otherwise you can mail me an encrypted jump drive. Let me know what works best for you.

Heidi

Heidi Riddle, CWB®
Fish and Wildlife Biologist
USFWS North Dakota Ecological Services Field Office
3425 Miriam Ave
Bismarck, ND 58501
(701) 355-8545
heidi_riddle@fws.gov

From: Sarah Aftergood <SARAF@orsted.com>
Sent: Thursday, February 24, 2022 2:40 PM
To: Riddle, Heidi L <heidi_riddle@fws.gov>; Mueller, Elisha K. <ekmueller@nd.gov>
Cc: Peters, Kimberly <Kimberly.Peters@dnv.com>; Francesca Martella <FRKEH@orsted.com>; Nicholas Gebauer <NIGEB@orsted.com>
Subject: [EXTERNAL] Badger Wind Farm Eagles-USFWS coordination

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Hi Heidi/Elisha,

Please find the presentation which conveys what we discussed the other week regarding Eagles at Badger Wind Farm. I would like to send our BBCS but its too large (38 MB). Heidi is there another way to send it to you? A sharefile site perhaps?

Let me know if there is anything else you need for your colleagues at the regional office. I'll reach back out in a few weeks to see what the next steps are. Have a great rest of your week!

Best regards,
Sarah Aftergood
Director of Environmental Permitting
Environmental Permitting
Onshore

Tel. +15122302148
saraf@orsted.com



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Austin, TX 78701

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From: Riddle, Heidi L <heidi_riddle@fws.gov>
Sent: Wednesday, June 8, 2022 4:39 PM
To: Sarah Aftergood
Subject: RE: [EXTERNAL] RE: Badger Wind

Hi Sarah, please see my comments in response to your email.

- 1) Acoustic monitoring alone may not be sufficient to determine presence of NLEB. Most bat experts agree that even in-hand identification is difficult. Positive identification using only acoustics is extremely difficult.
- 2) Given that less than 0.1 acre of wooded areas will be cleared in the Project Area, outside of the NLEB roosting season, the greater concern would seem to be operational impacts to NLEB.
- 3) Re: PIPL, again, I would note that the potential for operational impacts is at least as great as disturbance impacts from construction of turbines. My recommendation about assessing suitability of wetlands within the project area was also pertaining to movement of plovers between habitat in the project area.
- 4) In my original April 8, 2022, email, I recommended including any voluntary offset information in the BBCS, as well as using NDGF's impact analysis document when determining estimates; I am still unclear on whether Badger Wind will incorporate that recommendation(s).

Best,
Heidi

Heidi Riddle, CWB®
Fish and Wildlife Biologist
USFWS North Dakota Ecological Services Field Office
3425 Miriam Ave
Bismarck, ND 58501
(701) 355-8545
heidi_riddle@fws.gov

From: Sarah Aftergood <SARAF@orsted.com>
Sent: Wednesday, May 18, 2022 12:01 PM
To: Riddle, Heidi L <heidi_riddle@fws.gov>
Subject: FW: [EXTERNAL] RE: Badger Wind

Hi Heidi,

Just curious to know if you have any thoughts regarding the answers to your questions below?

Best regards,
Sarah Aftergood
Director of Environmental Permitting
Environmental Permitting
Onshore

Ørsted
Tel. +15122302148

From: Sarah Aftergood
Sent: Thursday, April 21, 2022 10:22 AM
To: Riddle, Heidi L <heidi_riddle@fws.gov>
Subject: RE: [EXTERNAL] RE: Badger Wind

Hi Heidi,

Sorry for the delay, took some time to dig through past correspondence to provide you with answers to the below. I've attached a pdf that provides responses to the first 3 points. Let me know your thoughts.

The last point, I just had a meeting with Elisha and we will be going forward with voluntary offsets. I'll add something in to that nature.

Let me know if you need anything else in the meantime. Also I think at some point I would also like to discuss the presence of Eagles at site, let me know when that can take place.

Best regards,
Sarah Aftergood
Director of Environmental Permitting
Environmental Permitting
Onshore

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Tel. +15122302148

From: Riddle, Heidi L <heidi_riddle@fws.gov>
Sent: Friday, April 8, 2022 1:08 PM
To: Sarah Aftergood <SARAF@orsted.com>
Subject: RE: [EXTERNAL] RE: Badger Wind

Hello Sarah,

I do have some preliminary comments and questions. It would be good to address these prior to us sending an official letter if that works for you.

On March 22, 2022, the Service announced a proposal to reclassify the northern long-eared bat as endangered under the Endangered Species Act. If finalized, the proposed rule would nullify the current 4(d) rule, and any incidental take of the species would require incidental take authorization. We recommend you consider this possibility as you move forward in your surveys and planning. The Tier 2 analysis identified approximately 427 acres of potentially suitable NLEB habitat in the Project Area (PA). The BBCS states that bat habitat was "delineated within the Study area by using a 1,000-ft buffer around forested areas greater than 5 acres and around connective woodlands". I'm not familiar with this buffer or acreage. Can you explain that further?

The BBCS indicates that the likelihood of occurrence for piping plovers is "unknown". There is critical habitat 3 miles from the PA. I would recommend including any monitoring/survey data for the critical habitat, as well as assessing wetlands within the project area for habitat suitability for piping plovers as well as red knots.

The whooping crane analysis refers to sighting data and assesses the likelihood of stopover use relative to four reference areas. We recommend using the Niemuth (2018) model developed by the Service's Habitat and Population Evaluation Team as referred to in our January 26, 2021, letter. Please contact Adam Ryba, adam_ryba@fws.gov, for the shapefiles and for more information about the model (paper attached).

BW Exhibit 31

It isn't clear whether Badger Wind plans to use the methods recommended by both the Service and the ND Game and Fish (Department), used to obtain appropriate grassland and wetland offsets are described in Shaffer et al. 2019. We recommend including such a statement in the BBCS, if you plan to do voluntary offsets. We also recommend referring to the Department's March 14, 2022, impact analysis document when determining estimates.

Best,
Heidi

Heidi Riddle, CWB®
Fish and Wildlife Biologist
USFWS North Dakota Ecological Services Field Office
3425 Miriam Ave
Bismarck, ND 58501
(701) 355-8545
heidi_riddle@fws.gov

From: Sarah Aftergood <SARAF@orsted.com>
Sent: Monday, April 4, 2022 1:38 PM
To: Riddle, Heidi L <heidi_riddle@fws.gov>
Cc: Becker, Drew N <Drew_Becker@fws.gov>
Subject: RE: [EXTERNAL] RE: Badger Wind

Hi Heidi,

Just curious to know if you guys have reviewed the BBCS and the data we've provided and whether we should have a meeting soon. Let me know.

Best regards,
Sarah Aftergood
Director of Environmental Permitting
Environmental Permitting
Onshore

Ørsted
Tel. +15122302148

From: Riddle, Heidi L <heidi_riddle@fws.gov>
Sent: Monday, March 14, 2022 2:58 PM
To: Sarah Aftergood <SARAF@orsted.com>
Cc: Becker, Drew N <Drew_Becker@fws.gov>
Subject: RE: [EXTERNAL] RE: Badger Wind

Hi Sarah,

Drew's email is drew_becker@fws.gov.

Thanks,
Heidi

Heidi Riddle, CWB®

Fish and Wildlife Biologist
USFWS North Dakota Ecological Services Field Office
3425 Miriam Ave
Bismarck, ND 58501
(701) 355-8545
heidi_riddle@fws.gov

From: Sarah Aftergood <SARAF@orsted.com>
Sent: Monday, March 14, 2022 2:16 PM
To: Johnson, Sandra K. <sajohnson@nd.gov>; Mueller, Elisha K. <ekmueller@nd.gov>
Cc: Riddle, Heidi L <heidi_riddle@fws.gov>; drew.becker@fws.gov
Subject: [EXTERNAL] RE: Badger Wind

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Yep I've received everything. It appears that Drew's email is incorrect so that keeps bouncing back to me.

Best regards,
Sarah Aftergood
Director of Environmental Permitting
Environmental Permitting
Onshore

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Tel. +15122302148

From: Johnson, Sandra K. <sajohnson@nd.gov>
Sent: Monday, March 14, 2022 2:07 PM
To: Sarah Aftergood <SARAF@orsted.com>; Mueller, Elisha K. <ekmueller@nd.gov>
Cc: Heidi Riddle <heidi_riddle@fws.gov>; drew.becker@fws.gov
Subject: RE: Badger Wind

Ok, trying again...both Elisha and I have had some emails bounce back. We're not sure if it's us or one of you. So, here are the shapefiles. If this doesn't work, I'll use the State File Transfer System.

From: Johnson, Sandra K.
Sent: Monday, March 14, 2022 1:35 PM
To: 'Sarah Aftergood' <SARAF@orsted.com>; Mueller, Elisha K. <ekmueller@nd.gov>
Cc: 'Heidi Riddle' <heidi_riddle@fws.gov>; 'drew.becker@fws.gov' <drew.becker@fws.gov>
Subject: RE: Badger Wind

Sending this again in case it didn't go through...we used to be able to send zip files, not receive them, but my email bounced back. Just change the extension from .piz to .zip

From: Johnson, Sandra K.
Sent: Monday, March 14, 2022 1:29 PM
To: Sarah Aftergood <SARAF@orsted.com>; Mueller, Elisha K. <ekmueller@nd.gov>
Cc: Heidi Riddle <heidi_riddle@fws.gov>; drew.becker@fws.gov
Subject: RE: Badger Wind

Hi Sarah,
That is the total number of turbines that were analyzed (because that is your final turbine layout, correct?). No, not all turbines are impacting grassland. Attached are the results of the NDGF GIS analysis. For access to the AIOM tool, please contact Chuck Loesch at the USFWS HAPET office.
Thanks,
Sandy

Sandra Johnson
Conservation Biologist

701.328.6382 • sajohnson@nd.gov • gf.nd.gov



From: Sarah Aftergood <SARAF@orsted.com>
Sent: Monday, March 14, 2022 12:39 PM
To: Mueller, Elisha K. <ekmueller@nd.gov>
Cc: Heidi Riddle <heidi_riddle@fws.gov>; drew.becker@fws.gov; Johnson, Sandra K. <sajohnson@nd.gov>
Subject: RE: Badger Wind

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Hi Elisha,
Great I will review. Just a super quick note in case this changes anything, in the attached document it states 52 primarys and 8 alts. Is that the number of turbines you've totaled to be impacting grasslands to a certain degree? Just want to make sure it adds up. 😊.

Talk soon!

Best regards,
Sarah Aftergood
Director of Environmental Permitting
Environmental Permitting
Onshore

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Tel. +15122302148

From: Mueller, Elisha K. <ekmueller@nd.gov>
Sent: Monday, March 14, 2022 12:04 PM
To: Sarah Aftergood <SARAF@orsted.com>
Cc: Heidi Riddle <heidi_riddle@fws.gov>; drew.becker@fws.gov; Johnson, Sandra K. <sajohnson@nd.gov>
Subject: RE: Badger Wind

Sarah,

Attached you will find the Department's impact analysis on Badger Wind. Our letter to PSC will be based off of the permit application and this review of impacts. Feel free to reach out if you have any questions.

Elisha

From: Sarah Aftergood <SARAF@orsted.com>
Sent: Monday, March 7, 2022 3:35 PM
To: Mueller, Elisha K. <ekmueller@nd.gov>
Cc: Heidi Riddle <heidi_riddle@fws.gov>; drew.becker@fws.gov
Subject: RE: Badger Wind

******* CAUTION:** This email originated from an outside source. Do not click links or open attachments unless you know they are safe. *********

Hi Elisha,

Sounds good to me. The map package I sent you the other day will match exactly what was submitted to the PSC. Let me know when NDGF are done with their review and Orsted would gladly meet to discuss next steps. Thanks!

Best regards,
Sarah Aftergood
Director of Environmental Permitting
Environmental Permitting
Onshore

Ørsted
Tel. +15122302148

From: Mueller, Elisha K. <ekmueller@nd.gov>
Sent: Monday, March 7, 2022 1:31 PM
To: Sarah Aftergood <SARAF@orsted.com>
Cc: Heidi Riddle <heidi_riddle@fws.gov>
Subject: Badger Wind

Hi Sarah,

It has come to our attention that Orsted has submitted an application with PSC for its Badger Wind project. The Department will run its impact analysis based strictly on details specified in the submission. This analysis will be the basis of our recommendation letter which we provide to PSC overviews the project and its potential wildlife impacts. I know we had discussed meeting again regarding the impact analysis. This is an important step in understanding the impacts a project might pose to wildlife and habitats, and further, determining if voluntary measures should be considered to address those impacts. If you would like to meet and discuss further, we are happy to do so. However, as stated above, our review of the project can only be based on what is in the permit application and not on subsequent conversations.

Elisha Mueller
Conservation Biologist

701.328.6348 • ekmueller@nd.gov • gf.nd.gov



Badger Wind
Requested responses to USFWS comments

April 14, 2022

1) On March 22, 2022, the Service announced a proposal to reclassify the northern long-eared bat as endangered under the Endangered Species Act. If finalized, the proposed rule would nullify the current 4(d) rule, and any incidental take of the species would require incidental take authorization. We recommend you consider this possibility as you move forward in your surveys and planning.

Response:

The Project is aware of, and has considered, this proposal to reclassify the northern long-eared bat (NLEB) as endangered under the Endangered Species Act (ESA). There are a number of site-specific factors that may influence the decision that an incidental take permit for the Badger Wind project (project) should be considered. These are listed below:

- The Project completed two years of pre-construction acoustic monitoring, during which there were no positive identifications of NLEB in the 121,695 acre Study Area (*at that time*).
- At the time of the Tier 2 analyses, the nearest documented occurrence of NLEB within North Dakota was more than 50 miles from the Study Area.
- As of submittal of the CSC Permit application, less than 0.1 acre of wooded areas are proposed to be cleared (temporary impacts to potential NLEB roost tree habitat) during the course of project construction. These areas would be replaced under the project tree and shrub mitigation plan. As such, impacts to potential NLEB roost trees are expected to be minimal
- Construction of the Project is anticipated to begin this fall, after NLEB roosting season. Therefore, impacts to potential NLEB roost trees are expected to be minimal and could be scheduled to occur outside of the roosting season.

2) The Tier 2 analysis identified approximately 427 acres of potentially suitable NLEB habitat in the Project Area (PA). The BBCS states that bat habitat was “delineated within the Study area by using a 1,000-ft buffer around forested areas greater than 5 acres and around connective woodlands”. I’m not familiar with this buffer or acreage. Can you explain that further?

Response:

Approximately 427 acres of potentially suitable NLEB habitat was identified within the Project’s 2019 Study Area. It should be noted that 2019 Study Area comprised a much larger area (approximately 121,695 acres) than the current *Project Area* (approximately 31,500 acres). The current Project Area contains approximately 62 acres of wooded areas, as identified via analysis of aerial imagery. It should also be noted that the majority of these wooded areas are relatively small and isolated, mostly planted windbreaks, reducing their potential suitability for NLEB.

Regarding the methods used to identify suitable wooded habitat within the Study Area, wooded areas were identified via interpretation of aerial imagery in concert with review of the NLCD. This was done to provide an accurate assessment of actual wooded areas within the Study Area. Wooded areas within the Study Area are small and highly fragmented, with the largest identified comprising 8.65 acres, and the median woodlot size within the Study Area of 1.41 acres.

In a recent NLEB habitat assessment for the Tatanka Wind Project in South Dakota, a 10-acre minimum acreage was used as the threshold for identifying potentially suitable NLEB habitat, which was based on discussions with the USFWS in Michigan. Due to the small size of the majority of wooded areas within the Study Area, a more-conservative, 5-acre minimum was used to define suitable wooded habitat. The 1,000-foot buffer came from USFWS guidance stating “individual trees that are greater than 1,000 feet from a forested/wooded area” were not suitable habitat for NLEB. Thus, small, otherwise isolated wooded areas were flagged as potential habitat if they were in close proximity to a woodlot that could be defined as potentially suitable habitat.

3) The BBCS indicates that the likelihood of occurrence for piping plovers is “unknown”. There is critical habitat 3 miles from the PA. I would recommend including any monitoring/survey data for the critical habitat, as well as assessing wetlands within the project area for habitat suitability for piping plovers as well as red knots.

Response:

In the cited January 26, 2021, letter, the USFWS recommends a ½-mile non-disturbance buffer surrounding Designated Critical Habitat for piping plovers. As the nearest Designated Critical Habitat for piping plover is 3 miles away, there will be no disturbance within this ½ mile on such Designated Critical Habitat.

This letter also recommends a ½-mile non-disturbance buffer surrounding suitable wetland habitat, which is described in the letter as “near alkali lakes and consists of sparsely vegetated shorelines, sandbars, and islands, salt-encrusted mud flats, gravelly salt flats, and adjacent uplands 200 feet above the high-water mark of alkali wetlands with potential or documented plover nesting during the timeframe of April 1 – September 1.”

In general, such potentially suitable habitat for piping plovers is very limited within the Project Area. Furthermore, project construction is anticipated to commence in **September of 2022**, after the stated nesting season for piping plovers. Therefore, no direct impacts to nesting plovers are expected, should they be present in this limited habitat during the nesting season.

In addition, the Project has minimized permanent impacts to wetlands, with less than 0.01 acre of permanent impacts to a low-quality roadside ditch wetland proposed. As such, loss of suitable piping plover nesting habitat as a result of the Project would be negligible. Temporary impacts to wetlands will occur, however, these would take place outside the piping plover nesting season.

Red knots do not breed in North Dakota. Although they may migrate through the Project Area, permanent impacts to red knot stopover habitat will also be minimized. Temporary wetland

impacts occurring during the migration season are not anticipated to directly impact piping plovers or red knots.

4) The whooping crane analysis refers to sighting data and assesses the likelihood of stopover use relative to four reference areas. We recommend using the Niemuth (2018) model developed by the Service’s Habitat and Population Evaluation Team as referred to in our January 26, 2021, letter. Please contact Adam Ryba, adam_ryba@fws.gov, for the shapefiles and for more information about the model (paper attached).

Response:

The reference areas were selected as part of the whooping crane (WHCR) habitat assessment completed for the Badger project in 2020. This study used the USFWS HAPET model to compare four reference areas (north, south, east, and west) relative to the Project Study Area (at that time), using modeling outputs produced by Niemuth et al. (2018). In addition to the HAPET model, the study area was compared to the same four reference areas using Pearse (2015)’s stopover intensity model, prior WHCR sightings, and scoring of wetlands as potential stopover locations. Results of the desktop assessment found that probability of whooping crane stopover use increased towards the west, towards the centerline of the whooping crane migration corridor. The WHCR desktop assessment and methods used was presented to USFWS in the meeting on December 8, 2020. The methodology of this assessment was also confirmed in the August 9, 2021 meeting with USFWS.

As noted in the CSC Application and the BBCS, three whooping cranes were observed within the study area in April of 2020. It was speculated that poor harvesting conditions, which led to an increase in unharvested corn within the study area, may have led these individuals to forage farther from the center of the migration corridor. As such, the Project has committed to various measures to reduce the likelihood of impacts to whooping cranes. As collision with above-ground power lines was noted to represent the highest likelihood of whooping crane mortality, the Project has committed to adhering to APLIC guidelines and burying electrical collection lines. In addition, the Project Area has been refined to comprise an area in the northeast of the Study Area, closer to the boundary of the 75 percent migration corridor.

From: Riddle, Heidi L <heidi_riddle@fws.gov>
Sent: Wednesday, June 8, 2022 4:42 PM
To: Francesca Martella
Cc: Sarah Aftergood
Subject: RE: [EXTERNAL] Badger Wind Farm Eagles-USFWS coordination

Hello Francesca and Sarah,

I am going through some emails and see that I didn't respond to this one. I believe I recommended that Sarah contact our Regional Office, Migratory Birds Division. Sarah, have you made contact with them?

Thanks,
Heidi

Heidi Riddle, CWB®
Fish and Wildlife Biologist
USFWS North Dakota Ecological Services Field Office
3425 Miriam Ave
Bismarck, ND 58501
(701) 355-8545
heidi_riddle@fws.gov

From: Francesca Martella <FRKEH@orsted.com>
Sent: Thursday, March 3, 2022 1:43 PM
To: Riddle, Heidi L <heidi_riddle@fws.gov>
Cc: Sarah Aftergood <SARAF@orsted.com>
Subject: RE: [EXTERNAL] Badger Wind Farm Eagles-USFWS coordination

Perfect! I will set it up.

Are there any other people at USFWS that would like to have access? I would just need their emails to grant them access.

Best regards,
Francesca Martella
Project Developer
West Regional Development
Onshore

Ørsted
Tel. +13475220931

From: Riddle, Heidi L <heidi_riddle@fws.gov>
Sent: Thursday, March 3, 2022 2:03 PM
To: Francesca Martella <FRKEH@orsted.com>
Cc: Sarah Aftergood <SARAF@orsted.com>
Subject: RE: [EXTERNAL] Badger Wind Farm Eagles-USFWS coordination

Hello Francesca,

Yes, let's try that. Occasionally we have issues using certain sites, but it's changed so much that I don't even know what's best right now. Go ahead and send me the access info and we'll go from there!

Thank you for working on this,
Heidi

Heidi Riddle, CWB®
Fish and Wildlife Biologist
USFWS North Dakota Ecological Services Field Office
3425 Miriam Ave
Bismarck, ND 58501
(701) 355-8545
heidi_riddle@fws.gov

From: Francesca Martella <FRKEH@orsted.com>
Sent: Thursday, March 3, 2022 8:29 AM
To: Riddle, Heidi L <heidi_riddle@fws.gov>
Cc: Sarah Aftergood <SARAF@orsted.com>
Subject: RE: [EXTERNAL] Badger Wind Farm Eagles-USFWS coordination

Hi Heidi,

Following up on this. Would a shared Box folder work for you? We can set one up where you and anybody from your office would have access. We will save the BBCS in the Box folder.

Best regards,
Francesca Martella
Project Developer
West Regional Development
Onshore

Ørsted
Tel. +13475220931

From: Riddle, Heidi L <heidi_riddle@fws.gov>
Sent: Tuesday, March 1, 2022 10:28 AM
To: Francesca Martella <FRKEH@orsted.com>
Subject: FW: [EXTERNAL] Badger Wind Farm Eagles-USFWS coordination

From: Riddle, Heidi L
Sent: Tuesday, March 1, 2022 9:00 AM
To: Sarah Aftergood <SARAF@orsted.com>
Subject: RE: [EXTERNAL] Badger Wind Farm Eagles-USFWS coordination

Hi Sarah,

We have been struggling to find a site that allows us to access large files. Do you have a ftp site? I have found that sometimes they work. Otherwise you can mail me an encrypted jump drive. Let me know what works best for you.

Heidi

Heidi Riddle, CWB®
Fish and Wildlife Biologist
USFWS North Dakota Ecological Services Field Office
3425 Miriam Ave
Bismarck, ND 58501
(701) 355-8545
heidi_riddle@fws.gov

From: Sarah Aftergood <SARAF@orsted.com>
Sent: Thursday, February 24, 2022 2:40 PM
To: Riddle, Heidi L <heidi_riddle@fws.gov>; Mueller, Elisha K. <ekmueller@nd.gov>
Cc: Peters, Kimberly <Kimberly.Peters@dnv.com>; Francesca Martella <FRKEH@orsted.com>; Nicholas Gebauer <NIGEB@orsted.com>
Subject: [EXTERNAL] Badger Wind Farm Eagles-USFWS coordination

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Hi Heidi/Elisha,

Please find the presentation which conveys what we discussed the other week regarding Eagles at Badger Wind Farm. I would like to send our BBCS but its too large (38 MB). Heidi is there another way to send it to you? A sharefile site perhaps?

Let me know if there is anything else you need for your colleagues at the regional office. I'll reach back out in a few weeks to see what the next steps are. Have a great rest of your week!

Best regards,
Sarah Aftergood
Director of Environmental Permitting
Environmental Permitting
Onshore

Tel. +15122302148
saraf@orsted.com



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Austin, TX 78701

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From: Mueller, Elisha K. <ekmueller@nd.gov>
Sent: Monday, April 18, 2022 2:52 PM
To: Sarah Aftergood <SARAF@orsted.com>
Subject: Offset guidance

Hi Sarah,

Attached are our offset guidance documents. These have never been finalized so I would appreciate you not sharing them too widely. And just in case it doesn't go without saying, these, like any offsets, are voluntary. These documents incorporate our recommendations based on the best science we have available.

Feel free to reach out if you have any questions!

Elisha Mueller
Conservation Biologist

701.328.6348 • ekmueller@nd.gov • gf.nd.gov

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Wetland Restoration for Energy Development Offsets

Background

North Dakota is a top producer of coal, oil and gas, and wind energy. Increased demand for energy causes stress on the state's wildlife resources from direct and indirect impacts to habitat. Voluntary offset measures by energy developers can help alleviate these impacts. This document outlines the parameters of a wetland restoration program for offsetting impacts to wetlands as a result of energy development. Delivery of wetland restoration will be accomplished through funding assistance provided to willing landowners and is completely voluntary.

Wetland Restoration Parameters

Wetland restoration is defined as the return of a wetland and its functions to close approximation of its original condition as it existed prior to disturbance on a former or degraded wetland site. This would include, in most cases, restoring the natural hydrologic conditions by excavation and/or repair of a drained, ditched or tiled wetland basin. Because the wetlands are restored to offset for impacts resulting from an energy development project, the wetland will need to stay intact for the life of the specific development project.

I. Administrative Parameters

1. Eligible vendors:
 - a. Registered with the North Dakota Secretary of State.
 - b. Deliver all aspects of wetland restoration, including locating willing private landowners, execute and enforce the lease agreement(s), oversee contractors or excavators, and distribute payments.
2. Geographic constraints:
 - a. Preference to local landowners within general vicinity of impact, but not within 0.5 miles of direct impact.
 - b. Priority flowchart:
 - i. Within county of impact, within same geological feature (i.e. Missouri Coteau)
 - ii. Within county of impact, within different geological feature
 - iii. Adjacent county, within same geological feature
 - iv. Adjacent county, within different geological feature
 - v. Non-adjacent county, within same geological feature
3. Lease agreements:
 - a. Commensurate with projected length of impact.
 - b. Notice of Agreement recorded on title.
4. Reporting requirements:
 - a. For all candidate restorations, a written summary for plans and specifications, including but not limited to worksheets detailing the acreage and depth of each restored wetland, seeding list, management plan, and a map showing the project location and wetland boundaries must be submitted to NDGF for approval.

5. Monitoring requirements:
 - a. Verification the restoration was completed in year 1 and that it is not compromised in following years is required. See attachment 1 for the form that will be submitted during monitoring.
 - b. Monitoring will take place between May and September. The two monitoring schedules are:
 - i. Remote monitoring: Can include current year's aerial imagery verification or with photos submitted by landowner.
 1. Photo points will be designated by NDGF and photos will have to be submitted to both the third-party vendor and NDGF in years 3, 10, and 20.
 - ii. Field monitoring: In-person field verification performed by third party or NDGF and photos will be submitted to both the third-party vendor and NDGF in years 1, 5, 15, and 25.

II. Biological Parameters

1. Size/Hydrology constraints:
 - a. Minimum basin size: 1 acre
 - b. Maximum basin size: 10 acres
 - c. Wetlands within the 1-3-acre range should be prioritized.
 - d. Restorations should be of temporary and seasonal wetlands (0.5-2.5 feet deep) only.
2. Location constraints:
 - a. Prioritize wetlands within grasslands, but wetlands within croplands should not be omitted.
 - i. Native grass/forb buffers are encouraged around wetlands within croplands but are not required. Interested landowners should contact NRCS to pursue buffer creations.
3. Wetland restoration criteria:
 - a. Refer to and follow *NRCS Wetland Restoration Standard – 657*
 - b. Additional useful information can be found in *Minnesota Wetland Restoration Guide – Blocking and Filling Surface Drainage Ditches*
4. Planning considerations:
 - a. Refer to and follow *NRCS ND Wetland Restoration Workbook*, with the addition “Ditches will be filled for their entire length or 300 feet, whichever comes first. The fill will not exceed the elevation of the natural wetland sill, allowing 10 percent overfill for settling. Borrow material may be taken from the wetland basin but must be accomplished in a manner which does not compromise the wetland seal” per the (ND) United States Fish and Wildlife Service’s Partners for Wildlife program.
 - i. Recommend using Ditch Plug design only.

III. Landowner/Operator Parameters

1. Privately owned land only.

2. Public access encouraged but not required.
3. Commitment to a wetland management plan (required):
 - a. Mowing allowed during the first three years for weed control.
 - b. Grazing prohibited the first four years of contract to allow vegetation establishment
 - c. Managed grazing may occur after the first four years.
 - d. No physical alteration permitted.
4. Offset payments:
 - a. 100% cost-share for excavation work, seed mix, site preparation, seeding, and management treatments.
5. Buyout option:
 - a. If an agreement is exited, landowner must make a prorated repayment to account for remaining agreement services no longer provided. The vendor must determine a new offset site to replace the remaining services of the previous agreement.
6. Agreement extensions or alternatives to provide additional environmental benefits and services past the term of the original agreement are optional based on mutual consent of both parties or other conservation program providers.

IV. Ineligible Practices

1. Permanent easements.
2. Land acquisition.
3. Restoration on public land.

V. Resources

USDA Natural Resources Conservation Service Wetland Restoration Standard
https://efotg.sc.egov.usda.gov/references/public/ND/ND_657_Standard.pdf

USDA Natural Resources Conservation Service ND Wetland Restoration Workbook
https://efotg.sc.egov.usda.gov/references/public/ND/ND_Wetland_Restoration_Workbook.xls

USDA Natural Resources Conservation Service Web Soil Survey
<https://websoilsurvey.nrcs.usda.gov/app/>

Minnesota Wetland Restoration Guide – Blocking and Filling Surface Drainage Ditches
https://bwsr.state.mn.us/sites/default/files/2019-01/appendix_4a-1_blocking_and_filling_surface_drainage_ditches.pdf

Attachment 1

| | |
|---|---|
| <p style="text-align: center;">Location Map</p> <p style="text-align: center;">Quarter = 0</p> <p style="text-align: center;">Scale in Feet</p> <p style="text-align: center;">1,320</p> <p style="text-align: center;">2,640</p> <p style="text-align: center;">0</p> <p style="text-align: center;">2,640</p> <p style="text-align: center;">N</p> | <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p style="text-align: center;">Profile (perpendicular to flow) - DESIGN</p> <p style="text-align: center;">Top Width 10.0'</p> <p style="text-align: center;">Required Fill Height (with overfill) 2.0'</p> </div> <div style="width: 48%;"> <p style="text-align: center;">Profile (perpendicular to flow) - DESIGN</p> <p style="text-align: center;">Top Width 10.0'</p> <p style="text-align: center;">Required Fill Height (with overfill) 2.0'</p> </div> </div> |
| <p style="text-align: center;">CHECKOUT - Profile (perpendicular to flow)</p> <p style="text-align: center;">(End) _____ (Max.) _____ (End)</p> <p style="text-align: center;">Original Ground</p> | <p style="text-align: center;">CHECKOUT - Max. X-Section (parallel flow)</p> <p style="text-align: center;">Top EI. _____ Top Width _____</p> <p style="text-align: center;">U/S (horz) slope = 1:3</p> <p style="text-align: center;">D/S (horz) slope = 1:3</p> |
| <p style="text-align: center;">Ditch Plug Checkout</p> <p>TBM1 Elevation = 100.00</p> <p>Description: 1X2 hub 5" southeast of structure on the south rim of the wetland</p> | <p style="text-align: center;">Maximum X-Section (parallel flow) - DESIGN</p> <p style="text-align: center;">Top of Fill Elevation: 101.0 (including overfill)</p> <p style="text-align: center;">FLOW (upstream)</p> <p style="text-align: center;">Scarity base 1/2</p> <p style="text-align: center;">Original Ground</p> <p style="text-align: center;">Required Fill Height (with overfill) 2.0'</p> |
| <p style="text-align: center;">TRACT # 0</p> <p style="text-align: center;">FIELD # 0</p> <p style="text-align: center;">WETLAND # 0</p> <p style="text-align: center;">CONTRACT # 0</p> <p>Checkout Date _____</p> <p>Checked By _____</p> <p>Contractor _____</p> <p>Completion Date _____</p> | <p style="text-align: center;">DITCH PLUG PLAN</p> <p style="text-align: center;">SECTION, TOWNSHIP, RANGE</p> <p style="text-align: center;">0 County, ND</p> <p style="text-align: center;">U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE</p> |
| <p>Designed: _____ Date: Jan-00</p> <p>Drawn: _____</p> <p>Traced: _____</p> <p>Checked: _____ Date: Jan-00</p> | <p>Approved By: _____ Date: _____</p> <p>Title: _____</p> <p>Title: _____</p> |

Wetland Restoration Monitoring Form

Wetland Latitude/Longitude:

Checked by:

Date:

Approved by:

Date:

Brief description of current wetland condition:

Additional notes:

*****Submission of photos from designated photo sites required with this form.***

Grassland Reconstruction for Energy Development Offsets

Background

North Dakota is a top producer of coal, oil and gas, and wind energy. Increased demand for energy causes stress on the state's wildlife resources from direct and indirect impacts to habitat. Voluntary offset measures by energy developers can help alleviate these impacts. This document outlines the parameters of a grassland reconstruction program for offsetting impacts to native grassland as a result of energy development. Delivery of grassland reconstruction will be accomplished through funding assistance provided to willing landowners and is completely voluntary.

Grassland Reconstruction Parameters

Grassland reconstruction is considered the reestablishment of native grassland habitat in key areas important to declining wildlife where it has been lost due to conversion. This would include, in most cases, planting cropland back to a diverse native grass/forb planting specifically designed for the soils, topography, precipitation, and other characteristics of the local area. A management plan is required to be implemented by the owner/operator on the newly established grassland acres. The reestablished grassland is intended to be utilized as working lands in a haying or grazing operation and not remain idle indefinitely. Because this grassland is reconstructed to offset for impacts resulting from an energy development project, the grassland will need to stay intact for the life of the specific development project.

I. Administrative Parameters

1. Eligible vendors:
 - a. Registered with the North Dakota Secretary of State.
 - b. Deliver all aspects of grassland reconstruction, including locating willing private landowners, execute and enforce the lease agreement(s), verify the grassland management plan is being implemented, and distribute payments.
 - i. use the flow chart "Evaluation for Grassland Offset" to prioritize offers
2. Geographic constraints:
 - a. Offset project delivered within county of impact (preferred) or county adjacent to impact (secondary).
 - b. Preference to local landowners within general vicinity of impact, but not within 0.5 miles of direct impact.
3. Lease agreements:
 - a. Commensurate with projected length of impact.
 - b. Notice of Agreement recorded on title.
4. Reporting requirements:
 - a. For all candidate restorations, a written summary for plans and specifications, including but not limited to worksheets detailing the acreage and depth of each restored wetland, seeding list, management plan, and a map showing the project location and wetland boundaries must be submitted to NDGF for approval.

5. Monitoring requirements:
 - a. Verification the restoration was completed in year 1 and that it is not compromised in following years is required. See attachment 1 and 2 for the forms that must be submitted during monitoring.
 - i. Field monitoring: In-person field verification performed by third party or NDGF and photos will be submitted to both the third-party vendor and NDGF in years 1, 3, 15, and 25.
 1. In year 3, stand evaluation must be carried out by third-party and approved by NDGF before restoration can be fully incorporated into operation. (See Attachment 1)
 2. Years 1, 15, and 25 the standard from (Attachment 2) should be used for monitoring.
 - ii. Remote monitoring: Can include NDGF aerial image verification or with photos submitted by landowner.
 1. The standard form, as well as photo from points designated by NDGF will have to be submitted to both the third-party vendor and NDGF in years 5, 10, and 20.

II. Biological Parameters

1. Size/location constraints:
 - a. If the grassland reconstruction is <55 acres, it must be located adjacent to an extant grassland tract so the entire parcel will be ≥55 acres.
 - b. Land tract is adjacent to an extant grassland tract >55 acres (high priority).
 - c. Land tract is within 0.5 miles of an extant grassland tract >55 acres (medium priority).
 - d. Land tract is >0.5 miles from an extant grassland tract >55 acres (low priority).
2. Grassland establishment:
 - a. Refer to and follow *USDA-NRCS Herbaceous Vegetation Establishment Guide*:
 - i. Seeding dates (Part 1)
 - ii. Seedbed preparation (Part 2)
 - iii. Seeding equipment (Part 3)
 - iv. Drill calibration (Part 4)
 - v. Seed requirements (Part 5)
 - vi. Seeding depth (Part 6)
 - vii. Cover and companion crops (Part 7)
 - viii. Management and protection during establishment (Part 8)
 - ix. Procedure for stand evaluation (Part 9)
3. Selecting species and varieties:
 - a. Native grasses and forbs only.
 - b. Mixes designed to mimic the local natural conditions.
 - c. Determine the Ecological Sites from the soils information located in either the *Web Soil Survey* or the county specific soil interpretations (see FOTG, Section II - Soil Information).

- d. Mix must be selected from the Recommended Species by Ecological Site list associated with the MLRA (see FOTG, Section II- Upland and Riparian Ecological Site Descriptions, Range Site Descriptions and Reference Worksheets) of the site.
 - e. Mix must be a ratio of 50-to-50 grasses-to-forbs. However, spiking individual forb seeding rates is encouraged (see Prairie Reconstruction Guidebook for North Dakota), as this will promote establishment success.
 - f. The mix must contain a minimum of 6 grass species, 1 sedge, and 15 forbs. More specifically, the mix should include at least:
 - i. 1 cool-season bunch grass
 - ii. 1 cool-season rhizomatous grass
 - iii. 1 warm-season bunch grass
 - iv. 1 warm-season rhizomatous grass
 - v. 1 sedge species
 - vi. 4 forbs with early summer bloom period
 - vii. 4 forbs with mid-summer bloom period
 - viii. 4 forbs with late summer bloom period
 - g. Refer to Table 1 of the *Herbaceous Vegetation Establishment Guide* for recommended species and percent minimums and maximums for the Ecological Site(s).
 - h. Refer to *Herbaceous Vegetation Establishment Guide* for approved named varieties and full seeding rates of native grasses, forbs and shrubs. Use named varieties when available.
 - i. Refer to *ND-CPA-Planning or Data Sheet for Grass and/or Legume Seeding* to determine proper seeding rates (see FOTG, Section II, Ecological Sciences Forms).
4. Planning considerations:
- a. Where water erosion is a concern, all tillage and seeding operations should be performed across the general slope of the fields where appropriate. When seeding into light textured soils, adequate cover is required to prevent excessive erosion.
 - b. For improved germination, scarification of legumes with hard seed coats is recommended. Scarification is especially important with the following species: purple prairie clover, white prairie clover, leadplant and Canada milkvetch.
 - c. Slender wheatgrass and Canada Wildrye are short-lived species but establish rapidly and provides quick cover.
5. Guidelines for stand evaluation:
- a. Stand must have a minimum density of two rhizomatous grass plants per square foot, or four plants per square foot for bunchgrasses or mixtures of bunch and rhizomatous type grasses; or in the case of grass/legume/forb mixtures, two grass plants and one legume or forb plant per square foot.
 - i. See Part 9 of *Herbaceous Vegetation Establishment Guide* for additional guidance on stand evaluation.
 - ii. Stand success must be evaluated prior to fully incorporating restoration into operation.
 1. Stand evaluation will be carried out by third-party vendor in year 3 and submitted to NDGF for approval.

III. Landowner/Operator Parameters

1. Privately owned land only.
2. Public access encouraged but not required.
3. Commitment to a grassland management plan (required):
 - a. Grazing prohibited the first three years of contract to allow vegetation establishment
 - b. Managed grazing encouraged after the first three years.
 - i. Refer to *Prescribed Grazing - 528 Specification* for management after establishment.
 - c. Haying/mowing allowed on 1/3 tract annually with timing restrictions.
 - d. Prescribed fire allowed.
4. Offset payments:
 - a. Payment to landowner may be provided in lump sum or periodic disbursements, per landowner and vendor agreement.
 - b. Payments may include up to:
 - i. 100% cost-share for seed mix, site preparation, seeding, and management treatments.
 - ii. Loss of production (foregone revenue) payment for Years 1 - 3 of establishment. Suggest using the 5-year average non-irrigated cropland rental rate for the specified county per North Dakota Trust Lands current county rents and prices.
 - iii. Graduated operational transition payment provided for Years 4+ (declining percentage of full county rental rate/acre).
 - iv. Infrastructure cost-share for fencing and water development.
5. Buyout option:
 - a. If an agreement is exited, landowner must make a prorated repayment to account for remaining agreement services no longer provided. The vendor must determine a new offset site to replace the remaining services of the previous agreement.
6. Agreement extensions or alternatives to provide additional environmental benefits and services past the term of the original agreement are optional based on mutual consent of both parties or other conservation program providers.

IV. Ineligible Practices

1. Permanent easements.
2. Land acquisition.
3. Reconstruction on public land.

V. Resources

USDA Natural Resources Conservation Service Herbaceous Vegetation Establishment Guide
https://efotg.sc.egov.usda.gov/references/public/ND/Herbaceous_Veg_Est_Guide.pdf

USDA Natural Resources Conservation Service Web Soil Survey
<https://websoilsurvey.nrcs.usda.gov/app/>

Contact North Dakota Game and Fish for more information
ndgf@nd.gov Attn: Conservation Section

Updated: January 2020

NRCS Field Office Technical Guide (FOTG)

<https://efotg.sc.egov.usda.gov/#/details>

- Section II
 - *Soil Information*
 - *Upland and Riparian Ecological Site Descriptions, Range Site Descriptions and Reference Worksheets (MLRA information)*
- Section IV
 - Old Section IV
 - Ecological Sciences Forms
 - *ND-CPA-9 Planning or Data Sheet for Grass and/or Legume Seeding*
https://efotg.sc.egov.usda.gov/references/public/ND/ND-CPA-9_Herbaceous_Planting_Workbook.xlsm
 - Ecological Sciences Practices
 - *Herbaceous Vegetation Establishment Guide*
 - *Prescribed Grazing – 528 Prescribed Grazing Specification*
https://efotg.sc.egov.usda.gov/references/public/ND/528_specs_.pdf

Prairie Reconstruction Guidebook for North Dakota

<https://www.ag.ndsu.edu/publications/environment-natural-resources/prairie-reconstruction-guidebook-for-north-dakota>

Prairie Seedling and Seeding Evaluation Guide

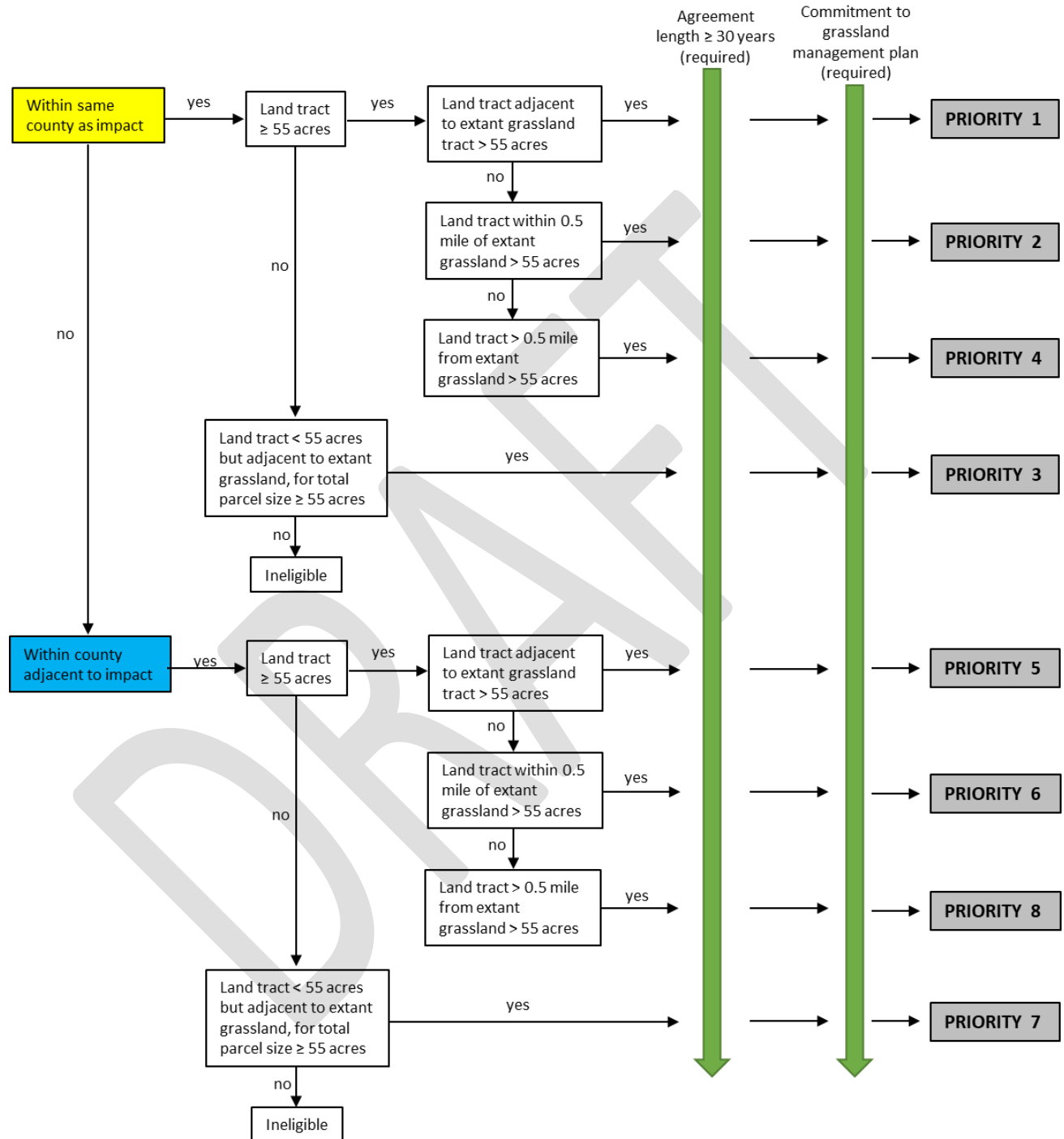
<https://secure.iowadot.gov/lrtf/docs/PrairieSeedlingGuide.pdf>

North Dakota Trust Lands County Rents and Prices North Dakota

<https://www.land.nd.gov/>

Or search for “County Rents and Prices North Dakota” and use current year.

Evaluation for Grassland Offset

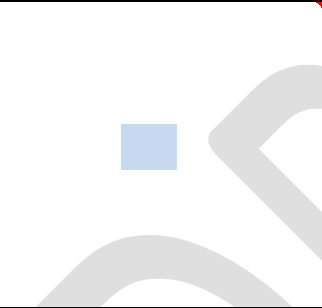


Attachment 1.

Grass/Legume Stand Evaluation

| Name: _____ | | Clear Worksheet | | | | | | | | | | Date: _____ | | | | | | | | | | | | | | | | | | | | | |
|-------------------------|---------------------------|---------------------------------|---|---|---|---|---|---|---|----|----|-------------|----|--------------|----|--------------|----|------------------------|----|----|----|----|----|----|----|-------|---------------------|--|--|--|--|--|--|
| Transect No: _____ | | Legal Desc: _____ | | | | | | | | | | Sect: _____ | | Twshp: _____ | | Range: _____ | | Tract / Field #: _____ | | | | | | | | | | | | | | | |
| Completed By: _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Species and/or Variety | Plants / Square Foot Plot | | | | | | | | | | | | | | | | | | | | | | | | | Total | Average Plants/SqFt | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | | | | | | | | |
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Totals Per Count | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Indicate how field was sampled:



Seeding Direction: _____

Total Acres: _____

Total number of plots: _____

Average Density (plant/sq. foot): _____

Plant Vigor: Low Medium High

Weed Competition: _____

Comments: _____

Recommendations to Cooperator: _____

Guidelines:

- Sample in a systematic and uniform manner
- Minimum of 10 plots for each 10 acres or less of field size
- Avoid areas that may have been double-seeded
- Sample perpendicular or diagonal to drill rows
- Use a 1 square foot frame (12 in. X 12 in.) or count parallel drill rows:

Recommended Minimum Seeded Species Densities:

Practices 512, 550: (3 - 5 plants per square foot)

Practice 327: (1 - 2 plants per square foot)

Use the lower limit for rhizomatous species; upper limit for bunch-type or mixtures) Refer to the "Herbaceous Vegetation Establishment Guide" for additional guidance.

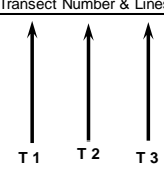
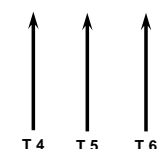
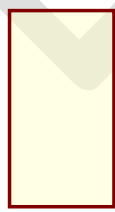
| Row spacing | No. of rows | Length |
|-------------|-------------|-------------|
| 6 inches | 2 rows | 12.0 inches |
| 7 inches | 2 rows | 10.3 inches |
| 8 inches | 2 rows | 9.0 inches |

I certify that the above stand evaluation is documented per NRCS practice specifications.

NRCS Evaluator Signature: _____

Date: _____

Click and drag with your mouse the feature you want from the patterns below:

| Transect Number & Lines | Field layout |
|--|---|
|   |  |

Attachment 2:

Grassland Restoration Monitoring Form

Grassland Latitude/Longitude:

Checked by:

Date:

Approved by:

Date:

Brief description of current grassland condition:

Additional notes:

*****Submission of photos from designated photo sites required with this form.***