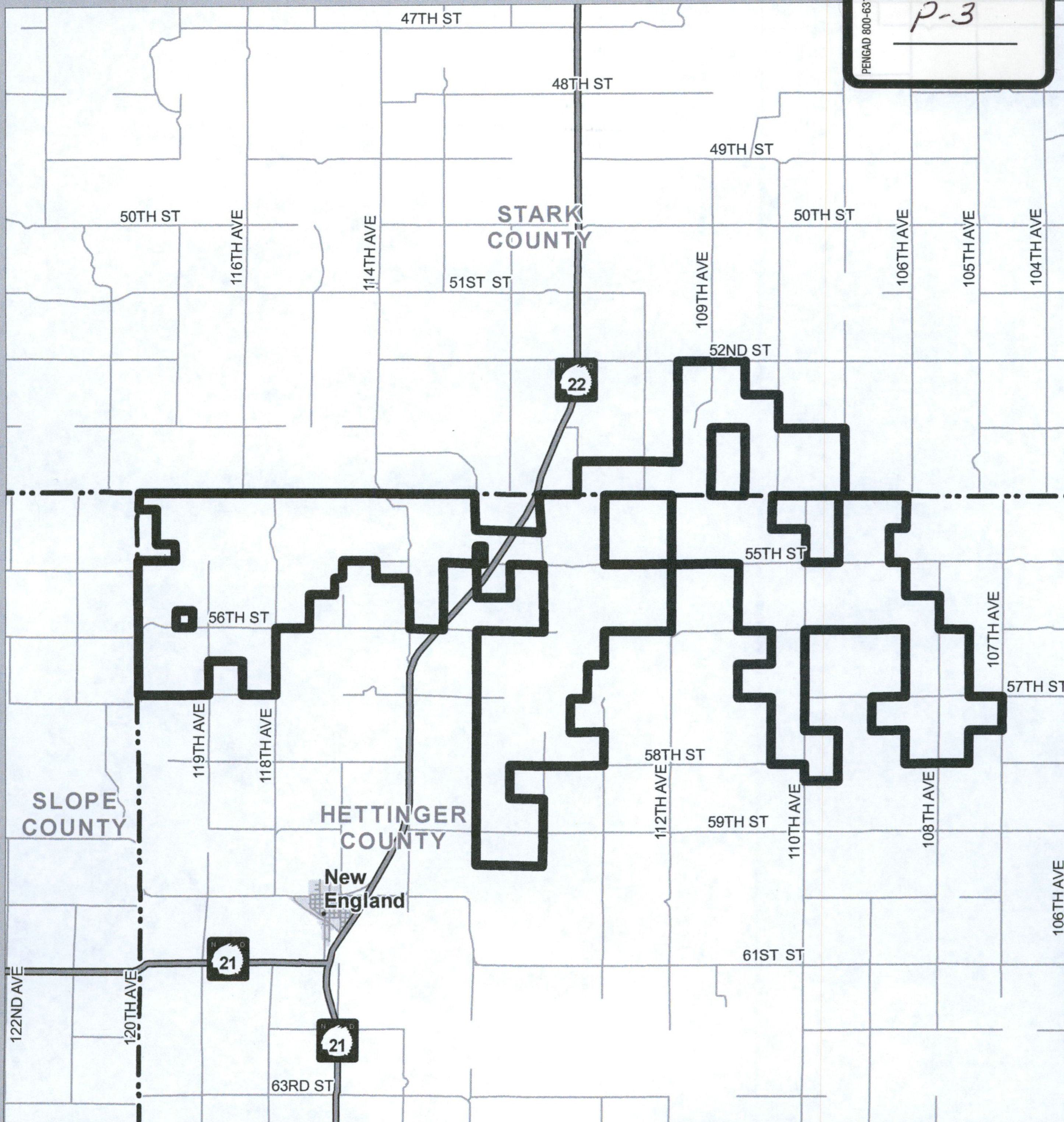
EXHIBIT
P-3
PENGAD 800-631-6989



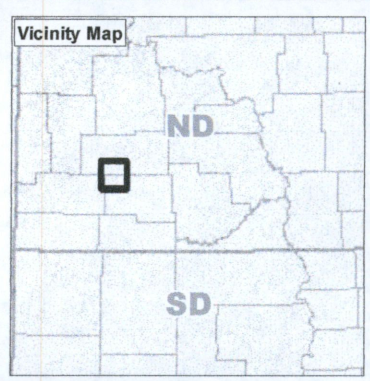
Brady II Wind Energy Center

Proposed Project Boundary

County Border

0 1 2 Miles

Scale is 1:130,000 when printed at 8.5x11"



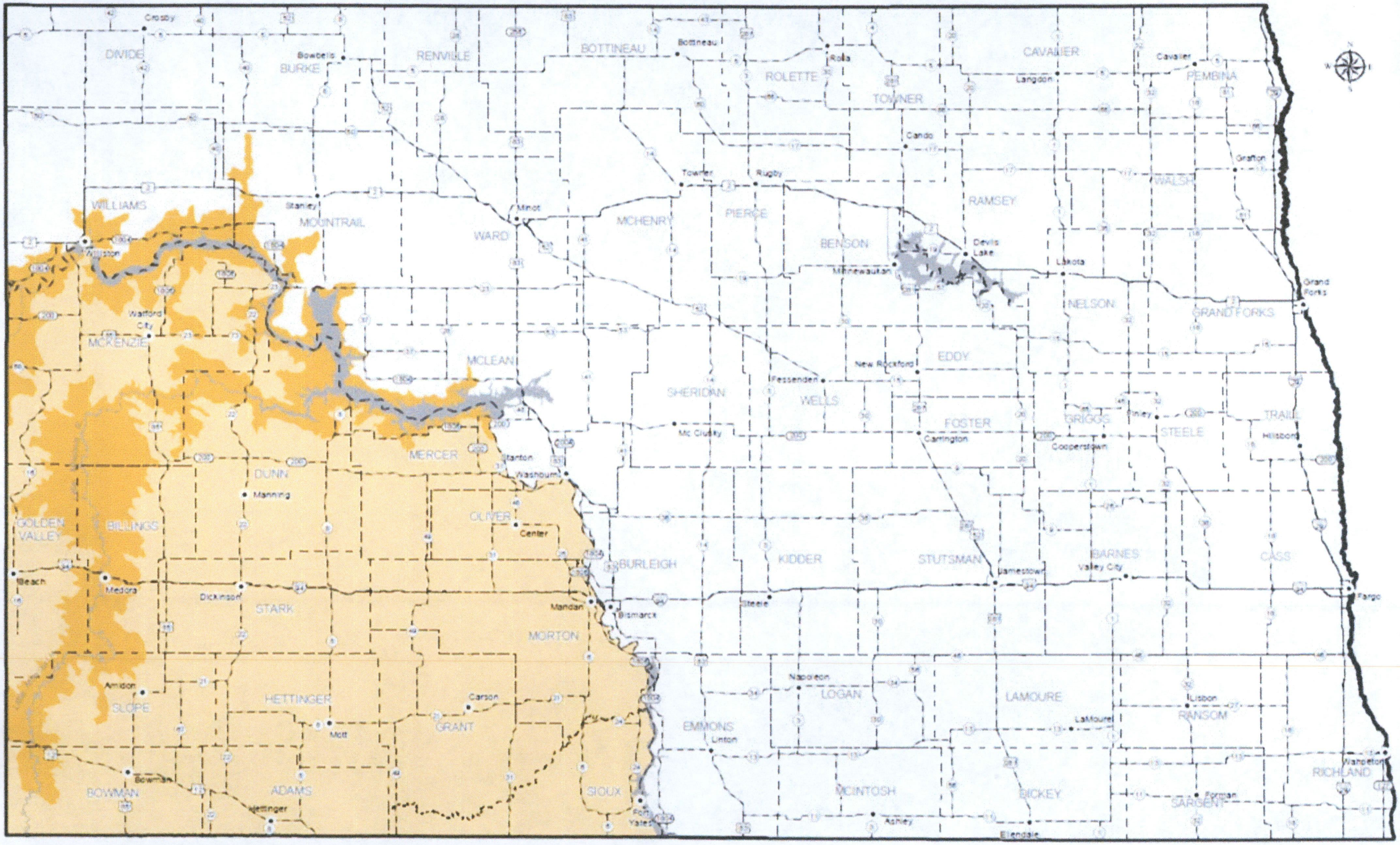
TETRA TECH

Source: BTS, ESRI, USGS Path: Path: P:\

66 PU-16-42 Filed: 6/7/2016 Pages: 55
Exhibit P3 – Jon Wert Binder

Jon Wert

North Dakota Game & Fish Department
Golden Eagle Breeding Range



Primary Breeding Range

Secondary Breeding Range

1

NextEra North Dakota Projects – Brady I, Brady II, Oliver III
Meeting Summary
16 December, 2015
In attendance:

x
Kevin Shelley, US Fish and Wildlife Service (USFWS)
x
John Schumacher, ND Game and Fish (NDGF)
x
Kim Wells, NextEra
x
Melissa Hochmuth, NextEra
x
Chris Farmer, Tetra Tech
x
Laura Nagy, DNV GL

Handouts provided during meeting and via email:

x
NEER ND Wind wildlife summary diligence 12112015.docx
x
NEER Brady I map 12112015.pdf
x
NEER Brady II map 12112015.pdf
x
NEER Oliver III map 12112015.pdf

Attachments to the meeting summary:

x
NEER Brady Wind I and II native prairie map
x
NEER Oliver III native prairie map

Introductions:

The group gave introductions and then Kim and Melissa provided an overview of the Projects by walking
through the NEER ND Wind Wildlife summary diligence document, which summarizes the due diligence
completed, planned, and in progress for the Brady I, Brady II, and Oliver III Projects.

Brady I and II:

x
Melissa provided a description of Brady and Brady II. These projects are adjacent (Brady I in Stark County and Brady II primarily in Hettinger County) approximately 15 miles south of the city of Dickinson.
x
Each project is 150 MW.
o
Brady I ~ 87 turbines.
o
Brady II ~ 72 turbines.
o
Projects will share a 19 mile, above-ground transmission (gen-tie) line.
o
Brady I

PPA with Basin Electric

Stark County Conditional Use Permit received on December 22, 2015

Submitted the PUC application for the wind farm and transmission line in December 2015.
2
o
Brady II also has a PPA with Basin electric.
o
Both Brady I and Brady II are expected to be operational by the end of 2016.
Oliver III:
x
The existing Oliver complex has two operating sites, Oliver I and Oliver II.
x
Oliver III is the third phase of this project, proposed to construct an additional 100 MW approximately 10 miles southeast of the existing complex.
x
Oliver III is currently negotiating a PPA and was previously permitted through the Public Service Commission in 2011, so there is a larger amount of due diligence for this site.
Brady I and II Discussion
Eagles:
x
The group reviewed the location of the eagle nests within 10 miles of the project boundaries. Kevinidentifiedthatthisisanareawithwinteringgoldeneagles.
x
Kevin asked John if the state collects wintering eagle data. John responded that they do not.
x
Chris identified that winter eagle data collection is ongoing.
Dakota Skipper:
x
Kevin identified that the presence/absence county-level information in the listing decision may not capture the current understanding of skipper presence.
x
Kevin said that USFWS has assembled a skipper database that contains data through 2013. This database is not currently publically available, but Kevin offered to assess the nearest skipper locations if NextEra would provide him with shapefile of the project.
x
Kim agreed to provide these files and asked if he was aware of any skippers within the project counties. He said he did not believe they had skippers documented in these counties.
x
Kevin suggested that NextEra take a landscape look at potential skipper habitat, including potential connectivity. He recommended that the analysis use a minimum patch size of ¼ acres, which is equivalent to 1/10 hectare. He suggested evaluation of potential skipper habitat as starting with a desktop analysis, then evaluate the vegetation present in the potential locations followed by skipper surveys, as appropriate.
PLOTS (Private Lands Open to Sportsmen):
x
John explained that PLOTS is an access easement and that if a landowner enters into an agreement he or she needs to contact the department and identify the acreages being removed from the agreement. He said that most PLOTS were usually in place for one year; however, if they were paid access, there would be a pro-rated amount that would need to be paid back. The state keeps an accurate list of PLOTS areas on their website.
Site Visit

x
Kim offered that NextEra would be happy to provide a tour of their existing facilities located ~20-25 min north of Bismarck.
3
Prairie Dogs and Black-footed Ferrets:
x
Kevin asked if prairie dog towns were mapped and Kim responded that there haven't been systematic surveys to date.
x
John said that the state maintains a GIS layer of prairie dog towns and that Sandra would be the point-of-contact for those data. The state historically kept an atlas of prairie dog towns, but this has not been as well maintained in the last 10 years.
x
Kevin said that he was aware of some significant prairie-dog towns in the New England area, up to several thousand acres, that might come into play for foraging golden eagles. At one point, this area was considered for black-footed ferret reintroduction, but there were not enough land owners to get the acreage.
x
Kevin said that there was an unconfirmed report of black-footed ferrets in 2012 close to Dickinson; however, they were not confirmed during follow up surveys by the USFWS.
x
NDGF provided shapefiles of documented prairie dog colonies and burrowing owls in and near the projects. There is a 43-acre prairie dog colony in the northeast portion of the Brady project area that was observed as unoccupied in 2011 and an 18-ac colony north of the Brady project area that was also observed as unoccupied in 2011. All documented occupied prairie dog colonies and burrowing owls were located over 5 miles to the west of both Brady and Brady II (none were located in the vicinity of Oliver III).
Easements:
x
Kevin asked if the maps addressed all of the existing easements held by the USFWS for grassland easements, particularly in the vicinity of Hettinger County Waterfowl Production Area (WPA).
x
NextEraandTetraTechreceivedconfirmatio
n from Sue Kvas at USFWS that there are no USFWS
interests (easements or WPA) within the boundary of the three projects or within 10 miles, with the exception of the Hettinger Coun
ty WPA within 10 miles of Brady II.
Sage grouse:
x
Kevin identified that the projects are on the edge of the sage grouse range and would most likely be an issue for Brady I. He believed that the 10-mile buffer was likely within the historic, but not the current range.
x
Kevin suggested that NextEra query Aaron Robinson of NDGF regarding current sage grouse locations.
Northern long-eared bats:
x
Kevin asked if the group had Dr. Erin Gillam's report on northern long-eared bats because her studies confirmed northern long-eared bats in western North Dakota. Kim asked if Kevin could share her report. Kevin emailed the report to the group during the meeting.
Brady I and II as separate projects vs. a singular project:
x
Kevin said that he didn't see differences in environmental issues between the two Brady projects and that he would find the review easier if it was all done as part of one analysis.

x
Contact Sandra to get the prairie dog database and then evaluate prairie dog use in the vicinity of the project (complete; contacted on 01/11/16 and shapefiles received 01/20/16).
x
Check to see if there are other easements near Hettinger WPA through NextEra's easement point person (complete; there are none, according to Sue Kvas at USFWS)
x
Query Aaron Robinson regarding sage grouse locations (query sent on 01/11/16)
x
Generate and share depiction of the grassland maps and forested areas for each project for landscape evaluation (transmitted with meeting summary)
x
Have an internal discussion about the potential of separate or tiered BBCSs (discussions in progress as of 01/11/16)
USFWS:
x
Share Erin Gillam's report on northern long-eared bats – (completed)
x
Review the project shape files for locations of whooping cranes and Sprague's pipits (pending)
x
Provide contact for USFWS' easement program manager to NextEra

found primarily along the Missouri River and Red River (Johnson 2010), the number of bald eagle nests has increased in North Dakota over the last 20 years as the species continues to recover from population declines, primarily due to environmental contaminants. Nesting bald eagles now occur in more than half of the counties in the state (Dyke et al. 2015) growing steadily to 140–150 active bald eagle nests to date (Johnson 2015). Most of the nests occur near streams and mid- to large-sized lakes, but bald eagles are also initiating nests in areas not considered traditional nesting habitat such as cottonwood trees surrounded by cropland or grassland (Dyke et al. 2015). The home range of bald eagles is variable. Populations in Oregon and Washington have home ranges of 2.7 to 18.1 square miles, with an average of 8.5 square miles (Watson et al. 1991), and in Montana the average home range size was 3.5 square miles (Stangl 1994). Along the Mississippi River in Minnesota, nests were located an average of 0.94 mile from the nearest neighboring nest (Mundahl et al. 2013).

During the non-breeding season (September through January; USFWS 2013c), bald eagles concentrate near large bodies of water where the water remains unfrozen and roost up to 20 miles from foraging sites, depending on abundance of prey (Buehler 2000). Bald eagles are opportunistic foragers that prey primarily on fish but also feed on other aquatic and terrestrial vertebrates, as well as on carrion (Buehler 2000).

No bald eagle nests were found within the Project Area or 2-mile buffer surrounding the Project Area during a nest inventory conducted in November 2015. There is one known bald eagle nest within 10 miles of the Project Area. The nest was located during spring 2015 aerial raptor nest surveys conducted in support of another proposed wind energy facility (now canceled) approximately 15 miles to the northeast of the Project Area. The bald eagle nest is located approximately 8.5 miles to the east of the proposed Project in an isolated stand of trees surrounded by agricultural habitat. No additional bald eagle nests are known to occur within 10 miles of the Project Area based on a query to NDGF in May 2015 (NDGF 2015).

Bald eagles have a low likelihood of occurring in the Project Area during the winter given the absence of large bodies of water that remain unfrozen within or near the Project Area. Although bald eagles have a low likelihood of breeding within the Project Area due to a lack of suitable nesting habitat, bald eagles nesting in the vicinity of the Project could occur in the Project Area when foraging or migrating.

Golden Eagle (Federally Protected under BGEPA)
Golden eagles are common in western North America west of the 100th meridian with small populations also present in the eastern portions of Canada and the United States (Kochert et al. 2002). Golden eagles in the western U.S. are most commonly associated with open and semi-open habitats such as shrublands, grasslands, woodland-brushlands, and coniferous forests as well as in farmland and riparian habitats (Kochert et al. 2002). Both year-round and migratory golden eagles occur in North Dakota (Dyke et al. 2015). Golden eagles nest on cliffs, utility poles, and in large trees in open areas from late January through August (Kochert et al. 2002). Golden eagles in North Dakota nest mainly west of the Missouri River (Johnson 2015) and egg-laying occurs from late March to early May (Stewart 1975, DeLong 2004). The species feeds

upon a wide variety of prey species but tends to hunt small to medium-sized mammals such as hares, rabbits, ground squirrels, marmots, and prairie dogs depending upon local availability (Bloom and Hawks 1982, Kochert et al. 2002).

No golden eagle nests were found within the Project Area or 2-mile buffer surrounding the Project Area during a nest inventory conducted in November 2015. In response to a May 2015 request for locations of known eagle nests within 10 miles of the Project Area, NDGF provided locations of two known golden eagle nests within 10 miles of the Project Area (NDGF 2015). The nests are located on large sandstone bluffs and are among a group of six nests approximately 9.7 to 10.8 miles to the northwest of the Project Area.

Golden eagles have a low likelihood of breeding within the Project Area due to a lack of suitable nesting habitat. Golden eagles nesting in the vicinity of the Project Area could occur in the Project Area when foraging or migrating, although the prey base appears to be limited (e.g., no prairie dog towns have been observed within the Project Area during eagle surveys).

Dakota Skipper (Federal Threatened)

The Dakota skipper (*Hesperia dacotae*) is a small butterfly found in the tallgrass and mixed-grass prairies of the Northern Great Plains. On October 24, 2014, the USFWS listed the Dakota skipper as a threatened species (USFWS 2014a). Although its historic range once consisted of vast, unbroken native prairie in the north-central U.S. and south-central Canada, its current range is now limited to scattered remnants of high quality native prairie in Minnesota, North Dakota, South Dakota, and southern Manitoba and Saskatchewan (USFWS 2015a). The Dakota skipper population has declined due to sensitivity to disturbances, such as grazing and fire, and the loss of native prairie habitat. The USFWS proposed to designate 50 units, ranging in size from 31 acres to 2,887 acres, in North Dakota, Minnesota, and South Dakota as critical habitat (USFWS 2014b). The closest proposed critical habitat to the proposed Project Area is approximately 70 miles to the north in McKenzie County. The Dakota skipper is not known to occur in Hettinger or Stark counties (USFWS and Western 2015); however, the two counties are on the western extent of the species' range (USFWS 2015a), and as a result, there is a low likelihood for the species to occur within the proposed Project Area. Brady Wind II has evaluated potential habitat for the Dakota skipper within the Project Area and has identified 177 acres (less than 1 percent of the Project Area) of excellent habitat and 7,776 acres (30 percent of the Project Area) of good habitat. Approximately 965 acres (4 percent of the Project Area) were classified as undetermined (i.e., could not be determined from desktop analysis or verified in the field due to access limitations).

7.16.2 Impacts

Based on operational data from the WRRS protocol in use at NEER's 12 operating wind farms in North Dakota, there have been no fatalities of any federally-listed species. Per the WRRS protocol, if a dead or injured federally protected species is found, it must be left undisturbed and reported to USFWS.

Bald Eagle
Six bald eagle mortalities associated with wind energy facilities within the United States were reported from 1997 through June 2012 (Pagel et al. 2013). To date, one bald eagle mortality has been reported at a wind energy facility in North Dakota (Public Prairie Broadcasting 2015). Bald eagles are believed to be at less risk of turbine collision than golden eagles because they tend to focus their hunting efforts for fish and waterfowl in lakes and rivers (Buehler 2000). Although the landscape within the Project Area does not support any large waterbodies or an abundance of smaller waterbodies that would attract bald eagles for nesting or foraging, there is one known bald eagle nest located approximately 8.6 miles to the northeast of the Project Area. The presence of occupied bald eagle nests in the vicinity of the Project Area suggests that the species may potentially forage in or pass through the Project Area during the breeding season. Eagle use surveys are underway to evaluate risk of proposed Project activities to bald eagles.

Golden Eagle
Seventy-nine golden eagle mortalities associated with wind energy facilities within the United States were reported from 1997 through June 2012, excluding the Altamont Pass Wind Resource Area in California (Pagel et al. 2013.); however, to date no golden eagle mortalities have been reported at wind energy facilities in North Dakota. Golden eagles are believed to be more at risk of turbine collision than bald eagles because they hunt for land-based prey along topographic contours where turbines are often located (Kochert et al. 2002).

Six known or potential golden eagle nests occur on sandstone bluffs within 10 miles of the Project Area. The landscape within the Project Area lacks any buttes or rock or dirt cliff faces suitable to support eagle nests; therefore, it is unlikely that golden eagles would nest within the Project Area. Golden eagles may forage in or pass through the Project Area; however, there are no known features that would concentrate golden eagles within the Project Area compared to the surrounding area. Eagle use surveys are underway to evaluate risk of proposed Project activities to golden eagles.

Dakota Skipper (Federal Threatened)
The Dakota skipper is not known to occur in Hettinger and Stark counties, and the Project Area is on the western extent of the species' range. Approximately 30 percent of the proposed Project Area was classified as Excellent/Likely or Good/Possible potential Dakota skipper habitat and approximately 4 percent was undetermined. Brady Wind II has avoided locating Project facilities on lands classified as Excellent/Likely, and has avoided locating Project facilities on lands classified as Good/Possible where practicable. Therefore, the impacts of the Project on the Dakota skipper are likely to be low.

7.16.3 Mitigative Measures

General avoidance and minimization practices for vegetation and wildlife are discussed in **Sections 7.14.3** and **7.15.3**, respectively. Brady Wind II has committed to the following additional avoidance and minimization measures which are specific to potential impacts to federally threatened and endangered species:

golden eagles occur in North Dakota (Dyke et al. 2015). Golden eagles nest on cliffs, utility poles, and in large trees in open areas from late January through August (Kochert et al. 2002). Golden eagles in North Dakota nest mainly west of the Missouri River (Johnson 2015) and egg-laying occurs from late March to early May (Stewart 1975, DeLong 2004). The species feeds upon a wide variety of prey species but tends to hunt small to medium-sized mammals such as hares, rabbits, ground squirrels, marmots, and prairie dogs depending upon local availability (Bloom and Hawks 1982, Kochert et al. 2002).

No golden eagle nests were found within the Study Area or 2-mile buffer surrounding the Study Area during a nest inventory conducted in November 2015. In response to a May 2015 request for locations of known eagle nests within 10 miles of the Study Area, NDGF provided locations of two known golden eagle nests within 10 miles of the Study Area (NDGF 2015). The nests were located on large sandstone bluffs and were among a group of six nests approximately 9.6 to 10.7 miles to the northwest of the Study Area. Aerial surveys conducted in 2016 determined that one nest was occupied by a ferruginous hawk and the other nest was destroyed. Subsequent aerial raptor nest surveys conducted in January, February, and March 2016 documented 4 occupied golden eagle nests within 10 miles of the Project Area. In March 2016, there was one occupied nest 0.2 miles outside edge of the Project Area; the other three nests were 0.1 – 8.2 miles outside of the Project Area.

Golden eagles have a moderate likelihood of breeding within the Study Area based on the observation of nesting activity outside the Study Area in 2016. However, nest density is expected to be low due to a general lack of suitable nesting habitat in the Study Area and lack of observations of eagles during eagle surveys conducted since November 2015. Golden eagles nesting in the vicinity of the Study Area may occur in the Study Area when commuting from the nest, foraging, or migrating, although the prey base appears to be limited (e.g., no prairie dog towns have been observed within the Study Area during eagle surveys).

Dakota Skipper (Federal Threatened)

The Dakota skipper (*Hesperia dacotae*) is a small butterfly found in the tallgrass and mixed-grass prairies of the Northern Great Plains. On October 24, 2014, the USFWS listed the Dakota skipper as a threatened species (USFWS 2014a). Although its historic range once consisted of vast, unbroken native prairie in the north-central U.S. and south-central Canada, its current range is now limited to scattered remnants of high quality native prairie in Minnesota, North Dakota, South Dakota, and southern Manitoba and Saskatchewan (USFWS 2015a). The Dakota skipper population has declined due to sensitivity to disturbances, such as grazing and fire, and the loss of native prairie habitat. The USFWS proposed to designate 50 units, ranging in size from 31 acres to 2,887 acres, in North Dakota, Minnesota, and South Dakota as critical habitat (USFWS 2014b). The closest proposed critical habitat to the Study Area is approximately 70 miles to the north in McKenzie County. The Dakota skipper is not known to occur in Hettinger or Stark counties (USFWS and Western 2015); however, the two counties are on the western extent of the species' range (USFWS 2015a), and as a result, there is a low likelihood for the species to occur within the Study Area.

power lines (Morkill and Anderson 1991, Murphy et al. 2009). Furthermore, no whooping crane fatalities have been recorded at wind facilities to date, suggesting that likelihood of collision may be low (USFWS 2009).

The potential for indirect impacts resulting from habitat loss is likely to be low, because the Study Area is outside the whooping crane migration corridor and less than one percent of the Study Area is suitable stopover habitat (**Table 10**).

Based on location of the Study Area outside of the migration corridor and the avoidance and minimization measures discussed in **Section 7.16.3** (e.g., buried collection systems), there is a low likelihood that the proposed Project would impact the whooping crane.

Bald Eagle

Six bald eagle mortalities associated with wind energy facilities within the United States were reported from 1997 through June 2012 (Pagel et al. 2013). To date, one bald eagle mortality has been reported at a wind energy facility in North Dakota (Public Prairie Broadcasting 2015). Bald eagles are believed to be at less risk of turbine collision than golden eagles because they tend to focus their hunting efforts for fish and waterfowl in lakes and rivers (Buehler 2000). Although the landscape within the Study Area does not support any large waterbodies or an abundance of smaller waterbodies that would attract bald eagles for nesting or foraging, there is one known bald eagle nest and one unoccupied large stick nest located approximately 5 miles to the northeast of the Study Area. Additionally, three unidentified large stick nests are located within 10 miles of the Study Area. Prairie dog activity was confirmed at all of the nine known prairie dog colonies within 10 miles of the Study Area in March 2016. The presence of occupied bald eagle nests in the vicinity of the Study Area suggests that the species may potentially forage in or pass through the Study Area during the breeding season. Eagle use surveys begun in November 2015 have detected no bald eagles within the Study Area.

Golden Eagle

Seventy-nine golden eagle mortalities associated with wind energy facilities within the United States were reported from 1997 through June 2012, excluding the Altamont Pass Wind Resource Area in California (Pagel et al. 2013.); however, to date no golden eagle mortalities have been reported at wind energy facilities in North Dakota. Golden eagles are believed to be more at risk of turbine collision than bald eagles because they hunt for land-based prey along topographic contours where turbines are often located (Kochert et al. 2002).

Eight known or potential golden eagle nests occur on sandstone bluffs within 10 miles of the Study Area. Four occupied nests, all within trees, are located within 10 miles of the Project Area. Golden eagles will likely forage in or pass through the Study Area; however, there are no known features that would concentrate golden eagles within the Study Area compared to the surrounding area. Eagle use surveys begun in November 2015 have detected no golden eagles in the Study Area.

USFW website

and the lack of any estimates at most existing wind energy facilities makes it difficult to draw general conclusions about the effect of wind energy related fatalities on avian populations (NRC 2007). At the one site where population effects have been studied, Hunt (2002) found that the resident golden eagle population at the APWRA appeared to be self-sustaining, in spite of relatively high fatalities, although the effect of these fatalities on eagle populations wintering within and adjacent to the APWRA is unknown. Fatality rates of migratory tree bats appear to be relatively high in some landscapes (e.g., forested mountain ridges); however, without a better understanding of the population status of these species it is impossible to determine the biological significance of these fatalities. As the abundance of wind facilities increases, the potential for cumulative and significant population effects must be considered (NRC 2007), although the focus of concern will continue to be on local populations, where the potential for population effects is greatest.

Habitat

Habitat is a species-specific concept. That is, habitat should be discussed with reference to a specific species (Morrison et al. 2006). The following is a general discussion of what is known about wind energy development on wildlife habitat, although the discussion focuses primarily on birds.

Relatively little is known about wildlife habitat impacts from wind development, although there is a growing concern, particularly as development expands to native landscapes in the mid-western region of the United States. Potential wildlife habitat impacts from wind energy development include the direct loss of habitat and the loss of habitat due to displacement of wildlife from suitable habitat. Generally speaking, wind energy development has a relatively small permanent footprint, approximately 1 acre/turbine, and consequently the potential direct loss of wildlife habitat is low (NRC 2007). The Bureau of Land Management (BLM) *Programmatic Environmental Impact Statement* (BLM 2005) estimated that the permanent footprint of a facility is 5–10% of the site being developed, including turbines, roads, buildings, and transmission lines. Displacement effects, on the other hand, have much greater potential habitat impacts for species sensitive to human activities. Displacement is considered a behavioral avoidance of otherwise suitable habitat because of the presence of a wind facility and its infrastructure. If displacement effects are great enough then habitat fragmentation can occur. For the purposes of this discussion, fragmentation is considered the separation of a block of habitat for a particular species into two or more smaller blocks of habitat, so that the sum of the total value of habitat for the species is reduced.

Leddy et al. (1999) found that total breeding bird densities were lower in Conservation Reserve Program (CRP) fields with turbines compared to those without turbines in southwestern Minnesota. This reduced density was attributed to displacement of birds within 80 m of the turbine string (Leddy et al. 1999). Other studies (e.g., Johnson et al. 2000a, Erickson et al. 2004) suggest that the area of influence of wind turbines on grassland birds is within approximately 100 m of a turbine. Notwithstanding, there was no overall reduction in density within the larger area (the WRA) surveyed after the facility was in place (Johnson et al. 2000a, Erickson et al. 2004). Similar studies at the Stateline (Oregon-Washington) wind facility suggest a fairly small-scale impact of the wind facility on grassland nesting passerines, with a large portion of the impact related to direct loss of habitat from turbine pads and roads, and temporary disturbance of habitat due to construction areas (Erickson et al. 2004). Horned larks (*Eremophila alpestris*) appeared least affected, with some suggestion of displacement for grasshopper sparrows (*Ammodramus savannarum*), although sample sizes were limited. Shaffer and Johnson (2008) reported small-scale displacement of songbirds in a study of

USFW website

Data to be collected for each nest observed should include status (active, inactive), condition (e.g., good, fair, poor), species, stage (eggs, young in nest), and substrate (e.g., deciduous tree, cliff).

Certain precautions should be taken when conducting aerial surveys. Any residential areas within the survey area should not be surveyed. Rural residential areas should only be surveyed if the helicopter or plane can be kept at a minimum distance of ¼ mile from occupied residences. The helicopter or plane should be kept at an altitude of approximately 152 m (500 feet) while traveling between survey and staging areas to minimize effects on residents. Attempts should be made to minimize disturbance to horses, cattle, pets and other livestock. The helicopter or plane should be kept approximately 400 m (¼ mile) from livestock and pets, but greater distances may be warranted if livestock or pets appear disturbed.

Several studies have found that aerial surveys routinely miss nests. For example, during fixed-wing aerial surveys to estimate ferruginous hawk (*Buteo regalis*) populations in Wyoming, observers detected 23.7%-36.5% of known nests (Ayers and Anderson 1999). Many ferruginous hawks nest on the ground or on rock outcrops, and nests of this species are likely harder to detect than nests located in deciduous trees. However, aerial surveys should be followed by ground surveys, especially in areas within NSO zones or buffers associated with timing restrictions.

A comprehensive survey would include the identification of all occupied and unoccupied raptor nests. Basic nest use should be recorded and include: (1) *Unoccupied* - a nest with no evidence of recent use, or attendance by adult birds of prey; (2) *Occupied* - a nest site, or series of supernumerary nests within a 1-km radius, that revealed recent refurbishing (greenery, recent egg cup), or is represented by one or more adults on, or immediately adjacent to, nest structure(s); (3) *Successful* - a nest that fledged at least one young; (4) *Unsuccessful* - a nest known to be active but displaying addled/infertile eggs, a destroyed clutch, dead young, or empty at a period when dependent young should be present; and, (5) the number of chicks fledged (Steenhof and Kochert 1982). This type of survey will require visits throughout the nesting chronology of the raptor of interest. Often two to three surveys of each nest are required to determine nest timing so that future visits can be timed to coincide with fledging.

Prairie Grouse Lek Surveys

Much concern has recently been expressed regarding the potential impacts of wind energy facilities on prairie grouse species, which include the greater sage-grouse, greater and lesser prairie chickens, and sharp-tailed grouse. It is currently unknown how prairie grouse, which are accustomed to a relatively low vegetation canopy, would respond to numerous wind turbines hundreds of feet taller than the surrounding landscape. Some scientists speculate that such a skyline may displace prairie grouse hundreds of meters or even kilometers from their normal range (Manes et al. 2002, NWCC 2004, USFWS 2003). If birds are displaced, it is unknown whether, in time, local populations may become acclimated to elevated structures and return to the area, although Robel et al. (2004) did not detect habituation by the greater prairie chicken to other forms of development. The USFWS argues that because prairie grouse evolved in habitats with little vertical structure, placement of tall man-made structures, such as wind turbines, in occupied prairie grouse habitat may result in a decrease in habitat suitability (USFWS 2004).

TETRA TECH

TO:	NextEra Energy Resources, LLC
FROM:	Tetra Tech, Inc.
DATE:	May 4, 2016
CORRES. NO.:	TTCES-PTLD-2016-047
SUBJECT:	Brady II Wind Energy Center Eagle Use Report, August 2015 – April 2016

Summary

NextEra Energy Resources, LLC (NextEra) is developing the Brady II Wind Energy Center (Project) located in Hettinger and Stark counties, North Dakota. NextEra is committed to environmental due diligence and has contracted Tetra Tech, Inc. (Tetra Tech) to conduct eagle use surveys in the Study Area identified for the proposed Project.

Changes in turbine layout and Project boundary occurred after the initiation of the studies. Figure 1 shows survey locations relative to the original Study Area identified for the Project (dated 10-29-15), and Figure 2 shows survey locations relative to the revised Study Area (dated 3-3-16). The revised Study Area encompasses the current turbine layout and all associated facilities.

The objective of the eagle use surveys was to document eagle movements and behavior within and adjacent to the proposed Project. Tetra Tech used standardized protocols for the eagle use surveys that were designed to be responsive to the level of effort recommended in Tier 3 of the voluntary Land-Based Wind Energy Guidelines (WEG; U.S. Fish and Wildlife Service [USFWS] 2012) and Stage 2 of the Eagle Conservation Plan Guidance (ECP Guidance; USFWS 2013). This report describes eagle use surveys conducted from August 2015 to April 2016.

During a March 2016 raptor nest survey Tetra Tech found an active golden eagle nest approximately 0.2 miles outside the revised Study Area boundary (Figure 2). Brady Wind II has moved all project facilities outside of a one-half mile buffer around this occupied golden eagle nest. As a result, the closest turbine is 0.9 miles away to the northwest. Brady Wind II is continuing direct consultation with the U.S. Fish & Wildlife Service and the North Dakota Game & Fish Department regarding this nest.

Methods

Eagle Use Surveys

Two point-count locations (Points 14 and 15) were identified in August 2015 as part of the eagle use surveys for the proposed Brady Wind Energy Center, which is adjacent to the northern boundary of the original and revised Study Areas shown in Figures 1 and 2. Data collection began at

Tetra Tech, Inc.
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these points in August 2015. After data collection started, the Brady Wind Energy Center boundaries were revised and excluded points 14 and 15. Subsequently, the original Study Area for the proposed Project (Brady II Wind Energy Center) was identified, and points 14 and 15 were located within the original Study Area boundary (Figure 1). Because data collection from points 14 and 15 had already started, Tetra Tech included them in the identification of point-count locations for the proposed Project. An additional 12 point-count locations were identified in November 2015, resulting in a total of 14 point-count locations within the original Study Area for the proposed Project (Figure 1).

Initially, these 14 point-count locations provided spatial coverage of approximately 29 percent of the 1-kilometer buffer around the original proposed turbine locations (dated October 28, 2015), consistent with recommendations in the ECP Guidance (USFWS 2013) (Figure 1). Those proposed turbine locations have recently been modified (dated April 22, 2016). As a result, Survey Point 11 no longer overlapped any part of the 1-km turbine buffer and the remaining 13 point-count locations now provide spatial coverage of approximately 23 percent of the 1-kilometer buffer around the current proposed turbine locations (Figure 2). Point 11 is not located in the revised Study Area. According to ECP supposed to be 30% minimum

At points 14 and 15, eagle use surveys were conducted over 1 to 2 days every 2 weeks, totaling 17 rounds, from August 20, 2015 to April 2, 2016. From August 20 to October 25, 2015, survey visits included 20 minutes of general fall avian surveys followed by 60 minutes of eagle use surveys for a total of 1 hour and 20 minutes of survey time at each point-count location (Table 1). The fall general avian surveys ended on November 04, 2015. From November 11, 2015 to February 23, 2016, eagle use surveys were conducted for 60 minutes at each of the 13 point-count locations (Table 1). Additionally, on April 1 and April 2, 2016, survey visits (at all 13 points), included 20 minutes of general spring avian surveys followed by 60 minutes of eagle use surveys (a total of 1 hour and 20 minutes of survey time at each point-count location; Table 1). The total eagle survey time at the Study Area was 163.35 hours (Table 1). Surveys were conducted during daylight hours, and the order in which points were surveyed was altered between subsequent rounds so that each point was surveyed at different times of the day over the course of the season. Surveys were not conducted if fog or low cloud-cover reduced visibility to less than 400 meters of horizontal distance or less than 200 meters of vertical distance.

During each eagle use survey, the biologist continuously scanned the surrounding landscape for eagle activity using an unlimited viewshed. For each eagle observed, the biologist recorded the species, age class (Adult, Immature, or Unknown), time first and last observed, minimum and maximum flight heights, and flight behavior. Eagle flights were recorded in two height categories (less than or equal to 200 meters and greater than 200 meters above ground), based on the ECP Guidance. The time an observed eagle spent flying within the 800-meter-radius circular plot around the count location at each of these height categories was recorded and rounded up, in 1-minute intervals, so that these data could then be translated into eagle exposure minutes for projected fatality modeling. In accordance with the ECP Guidance, exposure minutes were defined as the number of minutes that an eagle was observed below 200 meters within the 800-meter-radius

Table 1. Eagles Observed within 800-Meter-Radius Circular Plots During Eagle Use Surveys at the proposed Brady II Wind Energy Study Area, August 20, 2015 to April 2, 2016.

Survey Visit	Dates	Number of Points Surveyed	Length of Surveys (Hours)	Number of Eagles	Flights Observed		Minutes of Eagle Flight below 200 Meters and within 800 Meters of Observation Point		Minutes of Eagle Flight above 200 Meters and within 800 Meters of Observation Point	
					Bald Eagle	Golden Eagle	Bald Eagle	Golden Eagle	Bald Eagle	Golden Eagle
1	8/20, 2015[1]	2	2.67	0	0	0	0	0	0	0
2	9/1, 2015[1]	2	2.67	0	0	0	0	0	0	0
3	9/16, 2015[1]	2	2.67	0	0	0	0	0	0	0
4	9/29, 2015[1]	2	2.67	0	0	0	0	0	0	0
5	10/14, 2015[1]	2	2.67	0	0	0	0	0	0	0
6	10/25, 2015[1]	2	2.67	0	0	0	0	0	0	0
7	11/11 - 11/12, 2015[2]	13	13.00	0	0	0	0	0	0	0
8	11/21 - 11/22, 2015[2]	13	13.00	0	0	0	0	0	0	0
9	12/5 - 12/6, 2015[2]	13	13.00	0	0	0	0	0	0	0
10	12/19 - 12/20, 2015[2]	13	13.00	0	0	0	0	0	0	0
11	12/31, 2016 - 1/1, 2016[2]	13	13.00	0	0	0	0	0	0	0
12	1/16 - 1/17, 2016[2]	13	13.00	0	0	0	0	0	0	0
13	1/28 - 1/30, 2016[2,3]	13	13.00	0	0	0	0	0	0	0
14	2/11 - 2/13, 2016[2,3]	13	13.00	0	0	0	0	0	0	0
15	2/22 - 2/23, 2016[2]	13	13.00	0	0	0	0	0	0	0
16	3/6-3/7, 2016[2]	13	13.00	0	0	0	0	0	0	0
17	4/1-4/2, 2016[4]	13	17.33	1	0	0	0	0	0	0
TOTAL		155	163.35	1	0	0	0	0	0	0

[1] During survey visits 1-6, only point-count locations 14 and 15 were surveyed, for a total of 1 hour and 20 minutes at each point-count location (included general fall avian surveys for 20 minutes).
[2] During survey visits 7-16, after the Brady II project boundary was defined, eagle use surveys were conducted exclusively at all 13 points, for a total of 60 monitoring minutes at each point-count location.
[3] No surveys occurred on 1/29 and 2/12 due to weather.
[4] During survey visit 17, all 13 point-count locations were surveyed for a total of 1 hour and 20 minutes at each point-count location (included general fall avian surveys for 20 minutes).

According to game & fish peak breeding season occurs from early April to late June. There is only 1 visit in that time frame.

TETRA TECH

TO:	NextEra Energy Resources, LLC
FROM:	Tetra Tech
DATE:	5/6/2016
CORRES. NO.:	TTCES-PTLD-2016-047
SUBJECT:	Brady II Wind Energy Center Raptor Nest Survey Report

Introduction

Brady Wind II, LLC (Brady Wind II), a wholly-owned, indirect subsidiary of NextEra Energy Resources, LLC (NextEra), is developing the Brady II Wind Energy Center (Project) in Hettinger and Stark counties, North Dakota (Figure 1). Brady Wind is committed to environmental due diligence and has contracted Tetra Tech, Inc. (Tetra Tech) to conduct raptor nest surveys in the Study Area identified for the Brady II Wind Energy Center (Figure 1) and a 10-mile buffer surrounding the Study Area (Figure 2).

The objective of the raptor nest surveys was to document all raptor nests within the Study Area plus a 2-mile buffer, and all eagle nests within a 10-mile buffer of the Study Area. Tetra Tech used standardized protocols for the raptor nest surveys that were designed to be responsive to the level of effort recommended in Tier 3 of the voluntary Land-Based Wind Energy Guidelines (WEG; USFWS 2012) and Stage 2 of the Eagle Conservation Plan Guidance (ECP Guidance; USFWS 2013). This report describes raptor nest surveys conducted in fall 2015 (November), winter 2016 (January and February), and spring 2016 (March).

Tetra Tech requested locations of documented eagle nests within the Study Area and a 10-mile buffer around the Study Area in May 2015 and April 2016 from North Dakota Game and Fish (NDGF). In May 2015, NDGF reported two historic golden eagle nest structures, located on sandstone buttes approximately 9 miles northwest of the Study Area (Figure 2). One of these nests (2015_22) was reported as destroyed by NDGF; however, surveyors checked for new nests in the vicinity of this historic nest location during the winter and spring 2016 aerial surveys. In April of 2016, correspondence with NDGF confirmed that a golden eagle nest located during our spring 2016 aerial nest survey had been reported to NDGF. NDGF also confirmed that they had no new information on eagle nests within 10 miles of the Study Area.

In spring of 2015, Tetra Tech located one bald eagle nest within 10 miles of the Study Area during aerial raptor nest surveys conducted in support of another proposed wind energy facility (now canceled). The bald eagle nest is located approximately 8.6 miles to the northeast of the Study Area, in an isolated stand of trees surrounded by agricultural habitat. There were no other known bald or golden eagle nests within a 10-mile radius of the Study Area, prior to Tetra Tech conducting the raptor nest surveys.

Winter 2016 Raptor Nest Surveys

January 2016 Raptor Nest Surveys

Golden eagles have been observed displaying courtship behavior as early as January in North Dakota (K. Shelley, USFWS, personal communication, December 16, 2015). In order to detect any early-season occupancy of eagle territories, Tetra Tech conducted an aerial raptor nest survey on January 25-27, 2016, as recommended by USFWS. The aerial survey consisted of searches for all raptor nests within the Study Area plus a 2-mile buffer, and searches for eagle nests within the Study Area plus a 10-mile buffer. Surveyors also checked the status of previously documented raptor nests, including all known nests within 2 miles of the Study Area, and known bald and golden eagle nests and large stick nests within 10 miles of the Study Area. The same aircraft, crew, and survey approach described for the fall aerial raptor nest surveys was used for the January aerial raptor nest surveys.

Data collected within the Study Area plus the 2-mile buffer included location and status of all stick nests (occupied or unoccupied), and any observations of eagles. Data collected within the remainder of the 10-mile buffer around the Study Area included location and status of any detected eagle nests, potential eagle nests, and any observations of eagles.

Eagle nests and large stick nests

No bald or golden eagle nests were found within the Study Area or the 2-mile buffer during the January nest surveys. Beyond the 2-mile buffer, the existing golden eagle nest structure reported by NDGF was unoccupied in January 2016 (2015_25; Table 1). Nest 2015_22, which was reported as destroyed in the dataset provided by NDGF, was confirmed to be gone. The two groups of large stick nests located on buttes between 3.8 and 7.4 miles from the Study Area (2015_11, 2015_12, 2015_13, 2015_14, 2015_15, and 2015_18; Table 1) were all unoccupied. The known bald eagle nest located by Tetra Tech in 2015 (2015_20) was occupied in January 2016 (Table 1).

Five new large stick nests were found between the 2-mile and 10-mile buffer around the Study Area (2016_02, 2016_08, 2016_10, 2016_09, and 2016_11); all five nests were unoccupied and located in deciduous trees (Table 1). Nest 2016_10 is located approximately 800 feet from Nest 2015_20, and is likely an alternate bald eagle nest. The other four large stick nests (2016_02, 2016_08, 2016_09, and 2016_11) were located in deciduous trees between 2 and 10 miles from the Study Area.

A total of 9 bald eagles and 15 golden eagles were incidentally observed within 10 miles of the Study Area during the January raptor nest survey. Eagles of both species were distributed throughout the 10-mile survey area, but outside of the Study Area.

Other raptor nests and small stick nests

There were seven unoccupied small stick nests within 2 miles of the Study Area; five within the Study Area and 2 within the 2-mile buffer around the Study Area (Table 2; Figure 2). None of these nests were newly documented.

February 2016 Raptor Nest Surveys

An additional winter aerial raptor nest survey was conducted on 24 February, 2016 to detect any early-season occupancy of eagle territories. The aerial survey consisted of checks of all known and potential bald and golden eagle nests within 10-miles of the Study Area; small raptor nests were not checked during this survey. The same aircraft, crew, and survey approach described for the previous raptor nest surveys was used for the February aerial raptor nest surveys. Data collected during the survey included the status of any confirmed or potential bald and golden eagle nests, the location and status of new potential eagle nests, and any observations of eagles.

Eagle nests and large stick nests

The known bald eagle nest located outside the Study Area which was occupied in January (Nest 2015_20) was still occupied during the February surveys. An adult was observed perched near the nest. All of the known and potential golden eagle nests located on sandstone buttes to the northwest of the Study Area were unoccupied.

Three large stick nests located in trees to the south of the Study Area (2016_08, 2016_09 and 2016_11) were occupied based on the addition of fresh greenery; however, no eagles were observed in attendance at these nests. Two new large stick nests (Nests 2016_12 and 2016_13) were found in the same group of cottonwood trees as Nest 2016_08, and are probably alternate nests. There are often several alternate, inactive nests within an eagle territory. Three eagles (one bald and two golden eagles) were observed incidentally during the survey. All of the eagles were located outside of the Study Area and observed flying individually and at least 0.36 miles from the nearest known large stick nest.

March 2016 Raptor Nest Surveys

Tetra Tech conducted an aerial raptor nest survey on March 29-31, 2016 with the objective of documenting all raptor nests within 2 miles of the Study Area, and all eagle nests within the Study Area plus a 10-mile buffer, following recommendations of the ECP Guidance. Along with searching for all raptor nests within the Study Area plus the associated buffers, surveyors also checked the status of previously documented raptor nests, including all known nests within 2 miles of the Study Area and known bald and golden eagle nests and large stick nests within 10 miles of the Study Area. The same aircraft, crew, and survey approach described for the previous aerial raptor nest surveys was used for the March aerial raptor nest surveys.

Data collected within the Study Area plus the 2-mile buffer included location and status of all stick nests (occupied or unoccupied) and any observations of eagles. Data collected within the remainder of the 10-mile buffer around the Study Area included location and status of any detected eagle nests, potential eagle nests, and any observations of eagles.

Eagle nests and large stick nests

No eagle nests were located within the Study Area. One occupied golden eagle nest (Nest 2015_39) was found within the 2-mile buffer around the Study Area (Figure 2). The nest is located 0.2 miles to the south of the Study Area boundary. This nest is relatively undersized and located near the top of the tree, which is more typical of a hawk nest than a golden eagle nest. The nest was classified as small and not considered to be a potential eagle nest when first located during the November 2015 surveys and rechecked during the January 2016 surveys. Follow-up ground surveys in April showed nest 2015_39 continued to be occupied.

Three occupied golden eagle nests and one occupied bald eagle nest were found between the 2-mile and 10-mile buffer around the Study Area (Figure 2). The nearest nest is a golden eagle nest (2016_08), located 2.0 miles to the south of the Project Area. All of the other large stick nests located in trees between the 2 and 10-mile buffers around the Study Area were unoccupied. Nests 2016_12 and 2016_13 appear to be alternate nests within the golden eagle territory of Nest_2016_08. Nest 2016_10 appears to be an alternate nest within the bald eagle territory of nest 2016_20. Nests 2016_02 and 2015_38 are located in large trees near drainages and these nest structures appear large enough to potentially support eagles. Nest 2015_10 is large, but appears to be a ferruginous hawk nest based on the height and size of the nest tree.

Two of the large stick nests located on buttes between the 2 and 10-mile buffer around the Study Area (2015_13 and 2015_15) were determined to be occupied based on fresh lining material added to the nests between the February and March surveys. However, no raptors were present and the species could not be determined. Nest 2015_25, which is a historical golden eagle nest location provided by NDGF, was occupied by s ferruginous hawk. All of the other large stick nests located on buttes were unoccupied.

Other raptor nests and small stick nests

Surveyors located three occupied great horned owl nests, one occupied ferruginous hawk nest, one occupied red-tailed hawk nest, and three unoccupied small stick nests within the Study Area during the March 2016 aerial raptor nest surveys (Figure 2). Outside the Study Area, but within the 2-mile buffer, surveyors located two occupied great horned owl nests and one unoccupied small stick nest (Figure 2). All of the unoccupied small stick nests were located in trees and are most likely used by smaller raptor species (e.g., red-tailed hawk and great horned owl). Three of these nests were newly documented.

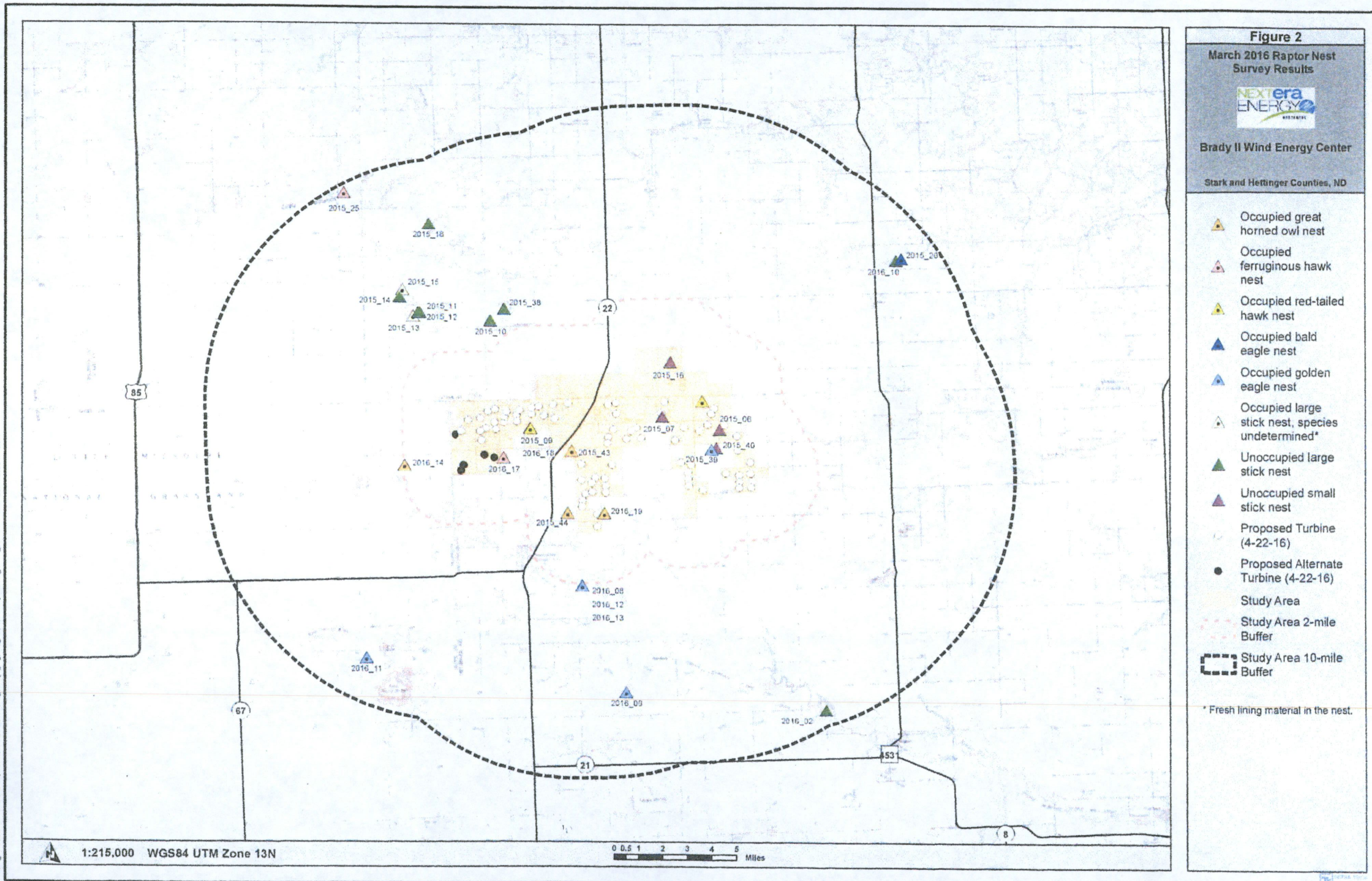


Figure 2
March 2016 Raptor Nest Survey Results
Brady II Wind Energy Center
Stark and Hettinger Counties, ND
Occupied great horned owl nest
Occupied ferruginous hawk nest
Occupied red-tailed hawk nest
Occupied bald eagle nest
Occupied golden eagle nest
Occupied large stick nest, species undetermined*
Unoccupied large stick nest
Unoccupied small stick nest
Proposed Turbine (4-22-16)
Proposed Alternate Turbine (4-22-16)
Study Area
Study Area 2-mile Buffer
Study Area 10-mile Buffer
* Fresh lining material in the nest.
2015_25
2015_18
2015_15
2015_14
2015_11
2015_12
2015_13
2015_38
2015_10
2015_28
2016_10
2015_16
2015_08
2015_07
2015_40
2015_39
2015_09
2016_18
2015_43
2016_14
2016_17
2016_19
2015_44
2016_08
2016_12
2016_13
2016_11
2016_09
2016_02
85
22
67
21
453
8
1:215,000 WGS84 UTM Zone 13N
0 0.5 1 2 3 4 5 Miles

Eagle Conservation Plan Guidance
Module 1 – Land-based Wind Energy
Version 2

Credit: Brian Millsap/USFWS

U.S. Fish and Wildlife Service
Division of Migratory Bird Management

April 2013

EXECUTIVE SUMMARY

1. Overview

Of all America's wildlife, eagles hold perhaps the most revered place in our national history and culture. The United States has long imposed special protections for its bald and golden eagle populations. Now, as the nation seeks to increase its production of domestic energy, wind energy developers and wildlife agencies have recognized a need for specific guidance to help make wind energy facilities compatible with eagle conservation and the laws and regulations that protect eagles.

To meet this need, the U.S. Fish and Wildlife Service (Service) has developed the Eagle Conservation Plan Guidance (ECPG). This document provides specific in-depth guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities. The ECPG guidance supplements the Service's Land-Based Wind Energy Guidelines (WEG). WEG provides a broad overview of wildlife considerations for siting and operating wind energy facilities, but does not address the in-depth guidance needed for the specific legal protections afforded to bald and golden eagles. The ECPG fills this gap.

Like the WEG, the ECPG calls for wind project developers to take a staged approach to siting new projects. Both call for preliminary landscape-level assessments to assess potential wildlife interactions and proceed to site-specific surveys and risk assessments prior to construction. They also call for monitoring project operations and reporting eagle fatalities to the Service and state and tribal wildlife agencies.

Compliance with the ECPG is voluntary, but the Service believes that following the guidance will help project operators in complying with regulatory requirements and avoiding the unintentional "take" of eagles at wind energy facilities, and will also assist the wind energy industry in providing the biological data needed to support permit applications for facilities that may pose a risk to eagles.

2. The Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) is the primary law protecting eagles. BGEPA prohibits "take" of eagles without a permit (16 USC 668-668c). BGEPA defines "take" to include "pursue, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb," and prohibits take of individuals and their parts, nests, or eggs. The Service expanded this definition by regulation to include the term "destroy" to ensure that "take" includes destruction of eagle nests. The term "disturb" is further defined by regulation as "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause,....injury to an eagle, a decrease in productivity, or nest abandonment" (50 CFR 22.3).

3. Risks to Eagles from Wind Energy Facilities

Wind energy development can affect eagles in a variety of ways. First, eagles can be killed by colliding with structures such as wind turbines. This is the primary threat to eagles from wind facilities, and the ECPG guidance is primarily aimed at this threat. Second, disturbance from pre-construction, construction, or operation and maintenance activities might disturb eagles at concentration sites or and result in loss of productivity at nearby nests. Third, serious disturbance or mortality effects could result in the permanent or long term loss of a nesting territory. Additionally, disturbances near important eagle use areas or migration concentration sites might stress eagles so much that they suffer reproductive failure or mortality elsewhere, to a degree that could amount to prohibited take. All of these impacts, unless properly permitted, are violations of BGEPA.

4. Eagle Take Permits

The Service recognizes that wind energy facilities, even those developed and operated with the utmost effort to conserve wildlife, may under some circumstances result in the "take" of eagles under BGEPA. However, in 2009, the Service promulgated new permit rules for eagles that address this issue (50 CFR 22.26 and 22.27).

Under these new rules the Service can issue permits that authorize individual instances of take of bald and golden eagles when the take is associated with, but not the purpose of, an otherwise lawful activity, and cannot practicably be avoided. The regulations also authorize permits for "programmatic" take, which means that instances of "take" may not be isolated, but may recur. The programmatic take permits are the most germane permits for wind energy facilities. However, under these regulations, any ongoing or programmatic take must be unavoidable even after the implementation of advanced conservation practices (ACPs).

The ECPG is written to guide wind-facility projects starting from the earliest conceptual planning phase. For projects already in the development or operational phase, implementation of all stages of the recommended approach in the ECPG may not be applicable or possible. Project developers or operators with operating or soon-to-be operating facilities and who are interested in obtaining a programmatic eagle take permit should contact the Service. The Service will work with project developers or operators to determine if the project might be able to meet the permit requirements in 50 CFR 22.26. The Service may recommend that the developer monitor eagle fatalities and disturbance, adopt reasonable measures to reduce eagle fatalities from historic levels, and implement compensatory mitigation. Sections of the ECPG that address these topics are relevant to both planned and operating wind facilities (Appendices E and F in particular). Operators of wind projects (and other activities) that were in operation prior to 2009 that pose a risk to golden eagles may qualify for programmatic eagle take permits that do not automatically require compensatory mitigation. This is because the requirements for obtaining programmatic take authorization are designed to reduce take from historic, baseline levels, and the preamble to the Eagle Permit Rule specified that unavoidable take remaining after implementation of avoidance and minimization measures at such projects would not be subtracted from regional eagle take thresholds.

5. Voluntary Nature of the ECPG

Wind project operators are not legally required to seek or obtain an eagle take permit. However, the take of an eagle without a permit is a violation of BGEPA, and could result in prosecution. The methods and approaches suggested in the ECPG are not mandatory to obtain an eagle take permit. The Service will accept other approaches that provide the information and data required by the regulations. The ECP can be a stand-alone document, or part of a larger bird and bat strategy as described in the WEG, so long as it adequately meets the regulatory requirements at 50 CFR 22.26 to support a permit decision. However, Service employees who process eagle take permit applications are trained in the methods and approaches covered in the ECPG. Using other methodologies may result in longer application processing times.

6. Eagle Take Thresholds

Eagle take permits may be issued only in compliance with the conservation standards of BGEPA. This means that the take must be compatible with the preservation of each species, defined (in USFWS 2009a) as "consistent with the goal of stable or increasing breeding populations."

To ensure that any authorized "take" of eagles does not exceed this standard, the Service has set regional take thresholds for each species, using methodology contained in the National Environmental Policy Act (NEPA) Final Environmental Assessment (FEA) developed for the new eagle permit rules (USFWS 2009b). The Service looked at regional populations of eagles and set take thresholds for each species (upper limits on the number of eagle mortalities that can be allowed under permit each year in these regional management areas).

The analysis identified take thresholds greater than zero for bald eagles in most regional management areas. However, the Service determined that golden eagle populations might not be able to sustain any additional unmitigated mortality at that time, and set the thresholds for this species at zero for all regional populations. This means that any new authorized "take" of golden eagles must be at least equally offset by compensatory mitigation (specific conservation actions to replace or offset project-induced losses).

The Service also put in place measures to ensure that local eagle populations are not depleted by take that would be otherwise regionally acceptable. The Service specified that take rates must be carefully assessed, both for individual projects and for the cumulative effects of other activities causing take, at the scale of the local-area eagle population (a population within a distance of 43 miles for bald eagles and 140 miles for golden eagles). This distance is based on the median distance to which eagles disperse from the nest where they are hatched to where they settle to breed.

The Service identified take rates of between 1 and 5 percent of the total estimated local-area eagle population as significant, with 5 percent being at the upper end of what might be appropriate under the BGEPA preservation standard, whether offset by compensatory mitigation or not. Appendix F provides a full description of take thresholds and benchmarks, and provides suggested tools for evaluating how these apply to individual projects.

7. An Approach for Developing and Evaluating Eagle ACPs

Permits for eagle take at wind-energy facilities are programmatic in nature as they will authorize recurring take rather than isolated incidences of take. For programmatic take permits, the regulations require that any authorized take must be unavoidable after the implementation of advanced conservation practices (ACPs). ACPs are defined as "scientifically supportable measures that are approved by the Service and represent the best available techniques to reduce eagle disturbance and ongoing mortalities to a level where remaining take is unavoidable" (50 CFR 22.3).

Because the best information currently available indicates there are no conservation measures that have been scientifically shown to reduce eagle disturbance and blade-strike mortality at wind projects, the Service has not currently approved any ACPs for wind energy projects.

The process of developing ACPs for wind energy facilities has been hampered by the lack of standardized scientific study of potential ACPs. The Service has determined that the best way to obtain the needed scientific information is to work with industry to develop ACPs for wind projects as part of an adaptive-management regime and comprehensive research program tied to the programmatic-take-permit process. In this scenario, ACPs will be implemented at operating wind facilities with an eagle take permit on an "experimental" basis (the ACPs are considered experimental because they would not currently meet the definition of an ACP in the eagle permit regulation). The experimental ACPs would be scientifically evaluated for their effectiveness, as described in detail in this document, and based on the results of these studies, could be modified in

ASSESSING RISK AND EFFECTS

1. Considerations When Assessing Eagle Use Risk

Bald eagles and golden eagles associate with distinct geographic areas and landscape features throughout their respective ranges. The Service defines these "important eagle-use areas" as "an eagle nest, foraging area, or communal roost site that eagles rely on for breeding, sheltering, or feeding, and the landscape features surrounding such nest, foraging area, or roost site that are essential for the continued viability of the site for breeding, feeding, or sheltering eagles" (USFWS 2009a; 50 CFR 22.3). Migration corridors and migration stopover sites also provide important foraging areas for eagles during migration (*e.g.*, Restani *et al.* 2001, Mojica 2008) and result in seasonal concentrations of eagles. As a result, the presence of a migration corridor or stopover site on or near a proposed wind development project could increase the probability of encounters between eagles and wind turbines. Although these sites are not specifically included within the regulatory definition of an important eagle-use area at 50 CFR 22.3, the presence of such a site on or near a proposed wind project could increase the likelihood of collisions.

Wind energy projects that overlap, or are proximate to, important eagle use areas or migration concentration sites may pose risks to the eagles for reasons described earlier. Project developers or operators should identify the location and type of all important eagle use areas or migration concentration sites that might be affected by a proposed wind project (*e.g.*, within the project area). If recent (within the previous 5 years) local data are available on the spacing of eagle nests for the project-area nesting population, those data can be used to determine an appropriate boundary for such surveys (as described in Appendix H). Otherwise, for both species we suggest initial surveys be conducted on and within 10 miles of a project's footprint to establish the project-area mean inter-nest distance. The project footprint is the minimum convex polygon (*e.g.*, Mohr 1947) that encompasses the wind project area inclusive of the hazardous area around all turbines and any associated infrastructure, including utility lines, out-buildings, roads, etc. We suggest a site-specific approach based on the spacing between nearest, simultaneously occupied nests for the species present in the area. If data on nest-spacing in the project area are lacking, project proponents or operators may wish to survey up to 10 miles, as this is ½ the largest recorded spacing observed for golden eagles in the Mojave/Sonoran deserts of western Arizona (Millsap 1981). . For subsequent monitoring (*e.g.*, post-construction monitoring of occupancy and productivity of pairs potentially disturbed by the project), the project-area mean inter-nest distance can be used to define a more relevant project-area boundary. The 10-mile perimeter may be unnecessary for bald eagles in some areas, and the Service acknowledges there needs to be flexibility in the application of this approach to accommodate specific situations.

Evaluating the spatial area described above for each wind project is a key part of the programmatic take permitting process. As described later, surveys should be conducted initially to obtain data to predict effects of wind projects on eagles. After the project begins operating, studies should again be conducted to determine the actual effects. The following sections include descriptions and criteria for identifying important eagle use areas or migration concentration sites in these assessments.

a. General Background and Rationale for Assessing Project Effects on Eagles

A synthesis of publicly available databases and technical literature are fundamental to the pre-construction assessment component of an ECP. In some instances, this work may reveal information on use of a proposed project area by eagles that is strong enough to support a decision on whether to proceed with the project. In most cases, if available information warrants further consideration of a potential wind project site, on-site surveys should be implemented to further document use of the project area by eagles. The goal of such surveys should be to quantify and describe use of the project area by breeding (territorial) and non-breeding eagles across seasons and years. A variety of survey approaches may be needed to accomplish this goal.

Although potential for presence of all types of important eagle use areas or migration concentration sites should be considered when beginning to assess a potential project site, special attention is typically given to nests and nesting pairs. An eagle territory is defined in 50 CFR 22.3 as an area that contains, or historically contained, one or more nests within the home range of a mated pair of eagles. We recognize that usage conflicts with the true biological meaning of the term territory, but we use it herein in its regulatory context. Newton (1979) considered the nesting territory of a raptor as the defended area around a pair's nest site and defined the home range as "...the area traveled by the individual in its normal activities of food gathering, mating, and caring for the young." For golden eagles at least, the extent of the home range and territory during nesting season generally are similar; the eagle defends its territory by undulating flight displays near the home range boundaries and adjoining territories barely overlap (Harmata 1982, Collopy and Edwards 1989, Marzluff et al. 1997).

Avoidance zones, often distinguished by specific "buffer" distances, have been prescribed to protect nests and other types of eagle use areas from disturbance. Recommendations for the size of avoidance zones for nests of bald eagles and golden eagles have sometimes been based on documented distances between nests and territory boundaries. For example, McGrady et al. (2002) and Watson and Davies (2009) indicated nesting territories of golden eagles extend to at least 4 miles from their nests. Garrett et al. (1993) found that bald eagle territories extend at least 2 miles from nests, though studies in areas of densely packed breeding territories of bald eagles suggest much smaller distances (Sherrod et al. 1976, Hodges and Robards 1982, Anthony 2001). A recommendation for a spatial buffer to avoid disturbance of eagle nests can hardly be applied throughout the entire range of either species due to marked variation in the size and configuration of nesting territories. As such, these avoidance prescriptions have been conservative because there are few site-specific data on spatial extent of territories in the published and unpublished literature. For bald eagles, minimum-distance buffers are prescribed by the Service to protect nests, foraging areas, and communal roosts against disturbance from a variety of activities (USFWS 2007b).

The approach we recommend in the ECPG for evaluating siting options and assessing potential mortality and disturbance effects of wind facilities on eagles is to conduct standardized surveys (e.g., point counts) to estimate eagle exposure within the project footprint. We further suggest augmenting these with surveys to determine locations of important eagle use areas or migration concentration sites for the project-area eagle population. The project-area eagle population is the population of breeding, resident non-breeding, migrating, and wintering eagles within the project area. As described previously and in Appendix H, if recent data on the spacing of eagle nests in the project area are available, it may be appropriate to use the mean species-specific inter-nest distance (assuming there is no reason to suspect eagle territories in the project area are configured such that the mean inter-nest distance would be misleading) as the outer boundary of the project area. Such a choice, however, also increases the importance of having adequate eagle exposure information from the project footprint for all seasons. For example, a winter communal night roost of eagles further than one mean inter-nest distance from the project migration conditions suddenly become unfavorable and eagles are forced to land and seek roosts. Presence of a migration corridor or stopover site in the project area is best documented and delineated by using a standard "hawk watch" migration count as recommended in this ECPG as part of site-specific surveys or, in some cases, by simply expanding point count surveys to account for migration incidence during what normally would be the peak migration period (Appendix C).

Much eagle mortality could occur if communal night roosts or communal foraging areas of eagles are separated by strings of wind turbines from other areas used by eagles. Outside the breeding season, both bald eagles and golden eagles can roost communally. Such roosts can include individuals of all ages and residency status (Platt 1976, Craig and Craig 1984, Mojica et al. 2008). During the breeding season, non-breeding bald eagles also may roost communally. Large roosts of eagles tend to be associated with nearby foraging areas. Conversely, eagles also may congregate to forage at sites of unusually high prey or carcass availability; such concentrations of bald eagles may number in the hundreds (Buehler 2000). Methods for documenting concentrations of eagles, and movements to and from such areas in relation to the project footprint are provided in Appendix C.

2. Eagle Risk Factors

Factors that influence vulnerability of eagles to collisions with wind turbines are poorly known. Theoretically, two major elements are likely involved: (1) eagle abundance, and (2) the presence of features or circumstances that decrease an eagle's ability to perceive and avoid collision. However, the relative importance of these factors, and how they interrelate, remains poorly understood for eagles and birds in general (Strickland et al. 2011). Table 1 lists some of the factors known or postulated to be associated with turbineblade-strike risk in raptors, but evidence for or against these is equivocal, and may well vary between sites. While some of these factors are not known to affect eagles, because of the similarity of flight behavior between eagles and some other soaring raptors, we include them here because they may apply to eagles. Evidence across multiple studies suggests that in addition to eagle abundance, two main factors contribute to increased risk of collision by eagles: (1) the interaction of topographic features, season, and wind currents that create conditions for high-risk flight behavior near turbines; and (2) behavior that distracts eagles and presumably makes them less vigilant (e.g., active foraging or inter- and intra-specific interactions).

Table 1. Factors potentially associated with wind turbine collision risk in raptors. Not all factors apply to eagles, and the influence of these factors may vary in association with other covariates on a case-by-case basis.

Risk Factor	Status of Knowledge from Literature	Citations
Bird Density	Mixed findings; likely some relationship but other factors have overriding influence across a range of species.	Barrios and Rodriguez (2004), De Lucas et al. (2008), Hunt (2002), Smallwood et al. (2009), Ferrer et al. (2011)
Bird Age	Mixed findings. Higher number of fatalities among subadult and adult golden eagles in one area. Higher fatalities among adult white-tailed eagles in another.	Hunt (2002), Nygård et al (2010)

APPENDIX B: STAGE 1 – SITE ASSESSMENT

Occurrence of eagles and their use of landscapes vary across broad spatial scales. The first step in project development is to conduct a landscape-scale assessment, based mainly on publicly available information, to identify sites within a large geographic area that have both high potential for wind energy and low potential for negative impacts on eagles if a project is developed. Stage 1 corresponds to Tiers 1 and 2 of the WEG and, along with Stage 2 herein and Tier 3 in the WEG, comprise the pre-construction evaluation of wind energy projects. Depending on the outcome of Stage 1, developers decide whether to proceed to the next stage, "... requiring a greater investment in data collection to answer certain questions" (referring to Tier 3, in the WEG; see also Table B-1). The WEG should be examined for general considerations relevant to Stage 1; this appendix and the following APPENDIX C focus on considerations specific to eagles.

The Stage 1 assessment should evaluate wind energy potential within the ecological context of eagles, including considerations for the eagle's annual life-cycle, i.e., breeding, dispersal, migration, and wintering. The goal at this stage is to determine whether prospective wind project sites are within areas known or likely to be used by eagles and, if so, begin to determine the relative spatiotemporal extent and type of eagle use of the sites. Areas used heavily by eagles are likely to fall into category 1; development in these areas should be avoided because the Service probably could not issue project developers or operators a programmatic permit for take that complies with all regulatory requirements. Stage 1 assessment is a relatively straightforward "desktop" process that probably should conduct before significant financial resources have been committed to developing a particular project.

Multiple data sources can be consulted when evaluating a prospective site's value to eagles. Wildlife biologists and other natural resource professionals from federal agencies including the Service, and tribal, state, and county agencies should be consulted early in the Stage 1 process to help ensure all relevant information is being considered. Information mainly encompasses physiographic and biological factors that could affect eagle risk associated with wind energy development. Questions generally focus on: (1) recent or historical nesting and seasonal occurrence data for eagles at the prospective area; (2) migration or other regular movement by eagles through the area or surrounding landscape; (3) seasonal concentration areas such as a communal roost site in a mature riparian woodland or a prairie dog (*Cynomys* spp.) town serving as a major forage base; and (4) physical features of the landscape, especially topography, that may attract or concentrate eagles. "Historical" is defined here as 5 or more years; a search for historical data should encompass at least the previous 5 years. Data from far longer time periods may be available but should be cautiously scrutinized for confounding factors such as land use change that diminish the data's relevance.

prairie dog town

Preliminary site evaluation could begin with a review of publically available information, including resource databases such as NatureServe (http://www.natureserve.org/) and the American Wind Wildlife Institute's Landscape Assessment Tool (LAT; http://www.awwi.org/initiatives/ □ landscape.aspx); information from relevant tribal, state, and federal agencies, including the Service; state natural heritage databases; state Wildlife Action Plans; raptor migration databases such as those available through Hawk Migration Association of North America (http://www.hmana.org) or HawkWatch International (http://www.hawkwatch.org); peer-reviewed literature and published technical reports; and geodatabases of land cover, land use, and topography (e.g., the LAT integrates several key geodatabases). Additional information on a site's known or potential value to eagles can be garnered by directly contacting persons with eagle expertise from universities, conservation organizations, and professional or state ornithological or natural history societies.

Some of this wide assortment of desktop information and certain knowledge gaps identified probably will necessitate validation through site-level reconnaissance, as suggested in the WEG.

Using these and other data sources, a series of questions should be considered to help place the prospective project site or alternate sites into an appropriate risk category. Relevant questions include (modified from the WEG):

1. Does existing or historical information indicate that eagles or eagle habitat (including breeding, migration, dispersal, and wintering habitats) may be present within the geographic region under development consideration?
2. Within a prospective project site, are there areas of habitat known to be or potentially valuable to eagles that would be destroyed or degraded due to the project?
3. Are there important eagle use areas or migration concentration sites documented or thought to occur in the project area?
4. Does existing or historical information indicate that habitat supporting abundant prey for eagles may be present within the geographic region under development consideration (acknowledging, wherever appropriate, that population levels of some prey species such as black-tailed jackrabbits (*Lepus californicus*) cycle dramatically [Gross et al. 1974] such that they are abundant and attract eagles only in certain years [e.g., Craig et al. 1984])?
5. For a given prospective site, is there potential for significant adverse impacts to eagles based on answers to above questions and considering the design of the proposed project?

We recommend development of a map that, based on answers to the above questions, indicates areas that fall under site category 1, i.e., areas where wind energy development would pose obvious, substantially high risks to eagle populations. Remaining areas could be tentatively categorized as either moderate to high but mitigable risk or minimal risk to eagle populations (category 2 or category 3). Prospective sites that fall into category 1 at this point are unlikely candidates for a programmatic permit for take of eagles, although classification of a site at Stage 1 might be regarded as tentative (see "Assessing Risk and Effects; 4. Site Categorization Based on Mortality Risk to Eagles" in the ECPG. If a site appears to be a category 1 site based on the outcome of Stage 1, the developer can decide whether information at that stage adequately supports a category decision or whether to invest in Stage 2 assessment to clarify preliminary indications of Stage 1 (Table B-1). Sites that tentatively fall into categories 2 or 3 at Stage 1 can move on to Stage 2 assessment, but could ultimately be excluded as permit candidates after more site-specific data are collected in Stage 2.

Again, the goal of Stage 1 site assessment in this ECPG is to determine whether prospective wind project sites are within areas known or likely to be used by eagles and, if so, begin to assess the spatiotemporal extent and type of eagle use the sites receive or are likely to receive. Thus, the ultimate goal of Stage 1 is to determine whether sites exhibit any obvious substantial risk for eagles. For those that do not, the Stage 1 site assessment will provide fundamental support for the design of detailed surveys in Stage 2, decisions which influence optimal allocation of the financial investment in surveys and quality of data collected. In some situations, the Stage 1 site assessment may provide enough information to adequately estimate impacts and support decisions on site categorization (and, where relevant, potential conservation measures and appropriate levels of compensatory mitigation), rendering Stage 2 assessment unnecessary (Table B-1).

described in this document. Consideration of alternative approaches for predicting fatality at such projects may require greater time and additional reviews.

The general approach for conducting a fixed-radius point count survey is to travel to a pre-determined point on the landscape and record individual birds detected – whether observed, only heard, or both observed and heard – within a circular plot, the boundary of which is at a fixed distance from the point and is marked in the field in several places (Hutto *et al.* 1986, Ralph *et al.* 1993). In addition to plot radius, the survey is standardized by count duration. Sometimes a variable-radius plot method (Reynolds *et al.* 1980) is used, yielding species-by-species detectability coefficients to appropriately bound the plot radius (*i.e.*, sampling area) for each species. A variety of point count survey methods have been used specifically for raptors (reviewed in Anderson [2007]; the North American Breeding Bird Survey [Sauer *et al.* 2009] is a random-systematic, continent-wide point count survey of bird population trends, including those of many raptor species). However, a fixed-radius approach with circular plots of 800-m radius typically is used for surveying eagles and other large (greater than crow [*Corvus* spp.]-size) diurnal species of raptors at proposed wind energy projects in the United States (Strickland *et al.* 2011).

The optimal duration of point count survey for eagles is a focus of current research. For now, for point count surveys of eagles at proposed wind energy projects, the Service recommends counts of 1, 2, or more hours duration instead of 20- to 40-minute counts typically used (Strickland *et al.* 2011). Longer counts also facilitate integration of other survey types (*e.g.*, development of utilization distribution profiles). Many raptor biologists have suggested that the likelihood of detecting an eagle during a 20- to 40-minute point count survey is extremely low in all but locales of greatest eagle activity and datasets generated by pre-construction point count surveys of this duration typically are replete with counts of zero eagles, resulting in unwieldy confidence intervals and much uncertainty. Moreover, time spent traveling to and accessing points for 20-minute surveys may exceed time spent conducting the observations. For example, 250 1-hour surveys conducted annually at a project of average size (*e.g.*, 15 sampling points, 1 to 3 km apart) and travel conditions require roughly the same total field time as needed for 500 20-minute surveys, yet yield 50% more observation hours (250 versus 167), with correspondingly greater probability of detecting eagles. Another advantage of longer counts is that they reduce biases created if some eagles avoid conspicuous observers as they approach their points and begin surveys, although some observers may become fatigued and overlook eagles during longer counts. A potential trade off of fewer visits, of course, is diminished accounting of temporal variation (*e.g.*, variable weather conditions or an abrupt migration event). While counting at fewer points for longer periods might also reduce the ability to sample more area, we advocate maintain the minimum spatial coverage of at least 30% of the project footprint. Until there is more evidence that shorter count intervals are adequate to estimate eagle exposure, we believe that a sampling strategy including counts of longer duration, albeit fewer total counts, may in the end improve sampling efficiency and data quality.

A key assumption of fatality prediction models based on data from point count surveys is that occurrence of eagles at a proposed project footprint before construction bears a positive relationship with turbine-collision mortality after the project becomes operational (Strickland *et al.* 2011). Support for this assumption from published literature is limited for eagles and other diurnal raptors at this time, however. In a recent study of raptors at 20 projects in Europe, no overall relationship was evident between either of two pre-construction risk indices and post-construction mortality (Ferrer et al. 2011). However, the authors based risk indices only in part on data from pre-construction point counts; factors incorporated into risk indices included a somewhat subjective decision on species-specific sensitivity to collision and conservation status. Despite this, a weak relationship between pre-construction flight activity and post-construction mortality was suggested for the most common species, griffon vulture (*Gyps fulvus*) and kestrels (*Falco* spp.). Neither *Aquila* nor *Haliaeetus* eagles occurred in the study. On coastal Norway, however, a high density, local population of the white-tailed eagle, a species closely related and ecologically similar to the bald eagle, experienced substantial turbine-collision fatality and loss of nesting territories after development of a wind energy project (Nygård et al. 2010). The relationship between pre-construction occurrence and post-construction mortality might be less clear if eagles and other raptor species avoided areas after wind energy projects were constructed (e.g., Garvin et al. 2011), but in general such displacement seems negligible (Madders and Whitfield 2006).

Precision, consistency, and utility of data derived from point count surveys depend greatly on the sampling framework and field approach for conducting the counts, which in turn depend somewhat on study objectives and the array of species under consideration. Precision and reliability of data from point count surveys for eagles can be much improved upon – and need for a risk-averse approach lessened – by incorporating some basic, common-sense sideboards into the survey design. One of these, longer count duration, is discussed above. Below are examples of ideal design features for point count surveys of eagle use of proposed wind energy projects, particularly when fatality rate prediction is a primary objective. Some of these extend from Strickland et al. (2011) and references therein, although the first is not in accord with corresponding guidance in that document.

- Surveys of eagles and other large birds are exclusive of those for small birds, to avoid overlooking large birds while searching at a much smaller scale for a much different suite of birds. The relatively brief (e.g., 10-minute) point counts for small birds could be conducted during the same visit, but before or after the count of large birds.
- In open areas where observers may be conspicuous, counts are conducted from a portable blind or from a blind incorporated into a vehicle to reduce the possibility that some individual eagles avoid observers, thus reducing likelihood of detection. Blinds are designed to mask conspicuous observer movement while not impeding views of surroundings.
- Point locations may be shifted slightly to capitalize on whatever vantage points may be available to enhance the observer's view of surroundings.
- Elevated platforms (e.g., blinds on scaffolding or high in trees, truck-mounted lifts) are used to facilitate observation in vistas obstructed by tall vegetation, topographic features, or anthropogenic structures.
- The observer's visual field at a point count plot, if less than 800 m (e.g., due to obstruction by forest cover), is mapped. The percentage of the plot area that is visible is factored into the calculation of area surveyed.
- Observers use the most efficient, logical route to move among points, changing the starting point with the beginning of each survey cycle such that each point is surveyed during a range of daylight hours.
- Systematic scans of the point count plot using binoculars alternating with scans via the unaided eye to detect close and distant eagles, and with overhead checks for

- Flight paths of eagles, including those outside the plot, are recorded on reference maps, using topographic features or markers placed in the field as location references. Eagle flight paths are recorded also before and after point count surveys and incidental to other field work. Flight paths are summarized on a final map, with those recorded during point count surveys distinguished from others to roughly account for spatial coverage bias. Documentation of flight paths can aid planning to avoid areas of high use (Strickland *et al.* 2011).
- Behavior and activity prevalent during each 1-minute interval is recorded as (*e.g.*) soaring flight (circling broadly with wings outstretched); unidirectional flapping-gliding; kiting-hovering; stooping or diving at prey; stooping or diving in an agonistic context with other eagles or other bird species; undulating/territorial flight; perched; or other (specified).
- Age class of individual eagles is recorded, *e.g.*, juvenile (first year), immature or subadult (second to fourth year), adult (fifth year or greater), or unknown.
- Weather data are recorded, including wind direction and speed, extent of cloud cover, precipitation (if any), and temperature (Strickland *et al.* 2011).
- Distance measures are used to estimate detectability for improving estimates from counts (Buckland *et al.* 2001) and could be used to assess whether eagles avoid observers. Horizontal distance of each eagle-minute is estimated and categorized, *e.g.*, in 100-m intervals to > 800 m.

The key consideration for planning point count surveys at proposed wind energy projects is sampling effort. We advise that project developers or operators coordinate closely with the Service regarding the appropriate seasonal sampling effort, as sampling considerations are complex and depend in part on case-specific objectives. We also reiterate that these (and most other) surveys should be conducted for at least 2 years before project construction and, in most cases, across all seasons. In general, sampling effort should be commensurate with the relative level of risk at a proposed project footprint if this can be surmised reliably from the Stage 1 assessment. If Stage 1 information cannot support reasonably certain risk categorization, Stage 2 surveys should be conducted as described here to clearly ascertain whether eagles are known or likely to use the area. If a project is determined to be category 2, products of point count surveys should include data for the fatality model detailed in this document (APPENDIX D). If there is compelling Stage 1 evidence indicating no use in a given season, zero use could be assumed and point count surveys in that season might be unnecessary.

In general, goals for the Stage 2 surveys are either to: (1) confirm category-3 status for a project, or (2) to generate a fatality rate estimate. Regardless of which of these survey goals apply to a particular project, we recommend first identifying potential sites for wind turbines, including alternate sites, then calculating the total area (km^2) encompassing a 1-km buffer around all the sites. We suggest 1 km because this approximates optimal spacing of a generic 2.5-MW turbine (Denholm *et al.* 2009), and the area outside this may not be representative of topographic features and vegetation types that characterize turbine strings within the project footprint. This approach assures close association between sampling sites and likely turbine locations, as recommended by Strickland *et al.* (2011). Next, we recommend that at least 30% of the area within 1 km of turbines be considered as the total km^2 area to be covered by 800-m radius point count plots (with a sample area for each plot of 2 km^2). Our recommended 30% minimum is based on the actual minimum coverage at eight wind facilities under review by the Service at the time version 2 of the ECPG was being developed.

1979), so documentation of spatial use by resident eagles should encompass all seasons in addition to accounting for annual variation.

A substantial advantage of a direct observation approach compared to telemetry techniques, which typically target only one or two resident eagles at a proposed project, is that it disregards age and breeding and residency status. Included are overwintering individuals; dispersing juveniles; post-fledging young from nearby territories and juveniles dispersing from other areas or regions; and adults from adjoining territories plus non-breeding adults (i.e., "floaters," Hunt 1998) and subadults that may occur along boundaries of breeding territories. In many instances, identification of individual eagles may not be important and final results of a generalized UD analysis may be based on data pooled from multiple birds, some of which were indistinguishable from each other in the field. A disadvantage of this approach is that position accuracy based on direct observation across expansive landscapes is coarse compared to using telemetry with GPS capability, and generally declines with distance, increasing topographic and forest cover, and during early morning and late evening hours. This can be resolved to some extent by limiting the size and increasing the number of observation sectors (in addition to using multiple observers), but for most pre-construction information needs, a high degree of accuracy is unessential for UD data. Last, it is unlikely that UD needs to be assessed across entire project footprints. Instead, it is more likely used to target specific areas of concern, such as areas where eagles nest or frequently forage, and to refine knowledge of use of particular areas to better inform turbine siting decisions. The method obviously has little utility in areas of low eagle occurrence.

Although we acknowledge telemetry offers some distinct benefits for assessing risks and impacts of wind projects, use of the method for eagles has other drawbacks. Specific individual eagles must be targeted for capture and not all eagles using a given project footprint are equally likely to be captured or provide useful data (e.g., migrants may be readily captured but leave the area before providing much data). More importantly, capturing and radio-marking eagles can have negative effects on behavior, productivity, and re-use of nest sites (e.g., Marzluff et al. 1997, Gregory et al. 2002), and recent information suggests a negative effect in some cases on survival, especially of golden eagles captured as adults and released with large (70- to 100-g), solar-charged transmitters (USFWS, unpublished information). These effects must be better understood before routine use of telemetry techniques can be recommended as components of wind-facility assessments. Until then, the Service discourages the use of telemetry in assessments of eagle use associated with wind energy projects; survey approaches suggested herein do not require telemetry.

d. Summary

The Service encourages development of cost-effective sampling designs that simultaneously address multiple aspects of use of proposed wind energy projects by eagles, though emphasizes that high-quality point count data to support fatality rate estimation should be considered the highest priority. In many cases, the sampling framework for point count surveys likely can be extended to reasonably assess migration incidence, UD, and other objectives. Although field-based data that directly support fatality estimation are most important, development of methods for addressing other objectives is encouraged, such as the use of digital trail cameras to document eagle occurrence at carcass stations. Regardless, we recommend that pre-construction surveys at proposed wind energy sites encompass a minimum of 2 years, including at least 1 year characterized by robust sampling that integrates multiple survey types.

2. Survey of the Project-area Nesting Population: Number and Locations of Occupied Nests of Eagles

To evaluate project siting options and help assess potential effects of wind energy projects on breeding eagles, we recommend determining locations of occupied nests of eagles within the project area for no less than two breeding seasons prior to construction. The primary objective of a survey of the project-area nesting population is to determine the number and locations of occupied nests and the approximate centers of occupied nesting territories of eagles within the project area. If recent (*i.e.*, within the past 5 years) data are available on spacing of occupied eagle nests for the project-area nesting population, the data can be used to delineate an appropriate boundary for the project area as described in APPENDIX H. Otherwise, we suggest that project area be defined as the project footprint and all area within 10 miles.

In this ECPG document we use raptor breeding terminology originally proposed by Postupalsky (1974) and largely followed today (Steenhof and Newton 2007). An occupied nest is a nest structure at which any of the following is observed: (1) an adult eagle in an incubating position, (2) eggs, (3) nestlings or fledglings, (4) occurrence of a pair of adult eagles (or, sometimes subadults, *e.g.*, Steenhof *et al.* [1983]) at or near a nest through at least the time incubation normally occurs, (5) a newly constructed or refurbished stick nest in the area where territorial behavior of a raptor had been observed early in the breeding season, or (6) "A recently repaired nest with fresh sticks (clean breaks) or fresh boughs on top, and/or droppings and/or molted feathers on its rim or underneath" (Postupalsky 1974).

A nest that is not occupied is termed unoccupied. An occupied nesting territory includes one occupied nest and may include alternate nests, *i.e.*, any of several other nest structures within the nesting territory. Sometimes "active nest" is used to encompass occupied nests in which eggs were laid plus those at which no eggs were laid. Here, as elsewhere in the ECPG and in Postupalsky (1974), an active nest is considered one in which an egg or eggs have been laid. A nest that is active is also, by default, occupied. A nest that is not active is inactive, and there is a regulatory definition for the term inactive nest (50 CFR 22.3. Not all pairs of bald eagles and golden eagles attempt to nest or nest successfully every year (Buehler 2000, Kochert *et al.* 2002), and nesting territories where pairs are present but do not attempt to nest could in some cases be misclassified as unoccupied. Accurate comprehension of territory distribution and determination of occupancy status is the crux of determining the project-area nesting population.

The project-area nesting population survey should include all potential eagle nesting habitat within the project area. At least two checks via aircraft or two ground-based observations are recommended to designate a nest or territory as unoccupied, as long as all potential nest sites and alternate nests are visible and monitored (*i.e.*, alternate nests may be widely separated such that a full-length, ground-based observation should be devoted to each). Ground-based observations should be conducted for at least 4 hours each (occupancy may be verified in less time), aided by spotting scopes, from at least 0.8 km from the nest(s), during weather conducive to eagle activity and good visibility. Surveys of occupancy should be conducted at least 30 days apart, ideally during the normal courtship and mid-incubation periods, respectively. Surveys later in the breeding season are likely to overlook some territorial pairs that that did not lay eggs or failed early in the nesting season. Timing of surveys should be based on local nesting chronologies; Service staff can provide recommendations. If an occupied nest or a pair of eagles is located, the territory should

.35 Km away

continue to be searched for alternate nest sites. This information can help determine the relative value of individual nests to a territory if ever there are applications for permits to take inactive nests, and when determining whether abandonment of a particular nest may result in loss of a territory.

Use of aerial surveys followed by ground-based surveys at targeted sites can be an ideal approach to determine nest and territory occupancy. Helicopters are an accepted and efficient means for inventory of extensive areas of potential nesting habitat for eagles, although fixed-wing aircraft can be used where potential nest sites are widely scattered and conspicuous. Aerial surveys for eagle nests in woodland habitat may require two to three times as much time as aerial surveys for nests on cliffs. When surveying rugged terrain by helicopter, cliffs should be approached from the front, rather than flying over from behind or suddenly appearing from around corners or buttresses. Inventories by helicopter should be flown at slow speeds, about 30 to 40 knots. All potentially suitable nest sites should be scrutinized; multiple passes at several elevation bands may be necessary to provide complete coverage of nest site habitat on large cliff complexes. Hovering for up to 15 seconds no closer than 50 m from a nest may be necessary to verify the nesting species, photograph the nest site, and, if late in the nesting season, allow the observer to count and estimate age of young in the nest. Aerial surveys may not be appropriate in some areas such as bighorn sheep lambing areas; to avoid such sensitive areas, state resource agencies should be consulted when planning surveys. Additional guidelines for aerial surveys for eagles and other raptors are reviewed in Anderson (2007).

Surveys should be conducted only by biologists with extensive experience in surveys of raptors and appropriate training in aerial surveys (see review in Anderson 2007). Whether inventories are conducted on the ground or aerially, metrics of primary interest to the Service for the project-area nesting population include:

1. number and locations of nest structures that are verified or likely to be eagle nests
2. number and locations of eagle nests currently or recently occupied based on criteria outlined herein
3. estimated number and approximate boundaries and centers of eagle breeding territories, based on records of nest site occupancy and clustering of nests.

Additionally, productivity (*i.e.*, reproductive success, defined here as the mean number of nestlings surviving to ≥ 56 and ≥ 67 days of age per occupied nest for golden eagles and bald eagles, respectively) may be of interest for assessing disturbance effects, although utility of productivity data at a given project likely will be limited due to small sample size and factors confounding the interpretation of results. A meta-analysis approach based on productivity data from many projects is contemplated as part of the adaptive management process accompanying the ECPG, and may contribute to understanding of disturbance effects on this aspect of eagle breeding biology. Moreover, abandonment of territories – the gravest manifestation and clearest evidence of disturbance effects – could be documented through the occupancy surveys recommended herein, if these surveys are repeated after project construction. We reiterate that accurate comprehension of territory distribution and determination of occupancy status should be the primary goal of nesting surveys.

APPENDIX E: STAGE 4 – AVOIDANCE AND MINIMIZATION OF RISK USING ACPS AND OTHER CONSERVATION MEASURES, AND COMPENSATORY MITIGATION

The most important factor when considering potential effects to eagles is the siting of a wind project. Based on information gathered in Stage 2 and analyzed in Stage 3, the project developer or operator should revisit the site categorization from the Stage 1 assessment to determine if the site(s) still falls into an acceptable category of risk (at this stage, acceptable categories are 2 and 3, and very rarely 1). When information suggests that a proposed wind project has a high eagle exposure rate and presents multiple risk factors (*e.g.*, is proximate to an important eagle-use area or migration concentration site and Stage 2 data suggest eagles frequently use the proposed wind-project footprint), it should be considered a category 1 site; we recommend relocating the project to another area because a location at that site would be unlikely to meet the regulatory requirements for a programmatic permit. If the site falls into categories 2 or 3, or rarely some category 1 sites where there is potential to adequately abate risk, the ECP should next address conservation measures and ACPs that might be employed to minimize or, ideally, avoid eagle mortality and disturbance. To meet regulatory requirements, ACPs, if available, must be employed such that any remaining eagle take is unavoidable.

In this section of the ECP, we recommend project developers or operators re-run models predicting eagle fatality rates after implementing conservation measures and available ACPs for all the plausible alternatives. This re-analysis serves two purposes: (1) it demonstrates the degree to which minimization and avoidance measures might reduce effects to eagle populations compared to the baseline project configuration, and (2) it provides a prediction of unavoidable eagle mortality. Conservation measures and ACPs should be tailored to specifically address the risk factors identified in Stage 3 of the ECP. This section of the ECP should describe in detail the measures proposed to be implemented and their expected results.

The Service does not advocate the use of any particular conservation measures and merely provides the below list as examples. Moreover, at this time none of these measures have been approved as ACPs for wind projects. Ultimately, project developers or operators will propose and implement site specific conservation measures and ACPs (as they become available) in cooperation with local Service representatives in order to meet the regulatory standard of reducing any remaining take to a level that is unavoidable.

Examples of conservation measures that could be considered before and during project construction, depending on the specific risk factors involved, include:

1. Minimize the area and intensity of disturbances during pre-construction and construction periods.
2. Prioritize locating development on lands that provide minimal eagle use potential including highly developed and degraded sites.
3. Utilize existing transmission corridors and roads.
4. Set turbines back from ridge edges.
5. Site structures away from high eagle use areas and the flight zones between them.
6. Dismantle nonoperational meteorological towers.
7. Bury power lines to reduce avian collision and electrocution.
8. Follow the Avian Power Line Interaction Committee (APLIC) guidance on power line construction and design (APLIC 2006).
9. Minimize the extent of the road network.

10. Avoid the use of structures, or remove existing structures, that are attractive to eagles for perching.
11. Avoid construction designs (including structures such as meteorological towers) that increase the risk of collision, such as guy wires. If guy wires are used, mark them with bird flight diverters (according to the manufacturer's recommendation).
12. Avoid siting turbines in areas where eagle prey are abundant.
13. Avoid areas with high concentrations of ponds, streams, or wetlands.

Examples of avoidance and minimization measures that could be considered during project operation, depending on the specific risk factors involved, include:

1. Maintain facilities and grounds in a manner that minimizes any potential impacts to eagles (*e.g.* minimize storage of equipment near turbines that may attract prey, avoid seeding forbs below turbines that may attract prey, etc.).
2. Avoid practices that attract/enhance prey populations and opportunities for scavenging within the project area.
3. Take actions to reduce vehicle collision risk to wildlife and remove carcasses from the project area (*e.g.* deer, elk, livestock, etc.).
4. Instruct project personnel and visitors to drive at low speeds (< 25 mph) and be alert for wildlife, especially in low visibility conditions.

When post-construction fatality information becomes available, the project developer or operator and the Service should consider implementing all or a subset of the additional conservation measures and experimental ACPs that were considered at the time the permit was issued (see ASSESSING RISK AND EFFECTS, 3b. General Approach to Address Risks in the ECPG).

Examples of experimental ACPs that could be identified initially or after evaluation of post-construction fatality monitoring data, depending on the specific risk factors involved, include:

1. Seasonal, daily, or mid-day shut-downs (particularly relevant in situations where eagle strikes are seasonal in nature and limited to a few turbines, or occur at a particular time of day).
2. Turbine removal or relocation.
3. Adjusting turbine cut-in speeds.
4. Use of automated detection devices (*e.g.* radar, etc.) to control the operation of turbines.

Literature Cited

Avian Power Line Interaction Committee (APLIC). 2006. Suggested practices for avian protection on power lines: the state of the art in 2006. Edison Electric Institute, APLIC, and the California Energy Commission. Washington D.C. and Sacramento, CA, USA. *http://www.aplic.org/SuggestedPractices2006(LR-2watermark).pdf.*

Golden Eagle

CP2

Return to Birds of Prey

Genus species	*Aquila chrysaetos*
Description	Dark brown overall, feathered legs, brown eyes, and black beak. The head turns golden as an adult.
Body length	30 inches
Wing Span	79 inches
Weight	10 pounds
Habitat/Nesting habitat	Open shrubland and grasslands of shortgrass, mixed-grass, and xeric grasslands are preferred by golden eagles. Avoid heavily forested areas but will use riparian or woodland/brushland habitat. Typically nest on cliffs but also in trees such as cottonwood and green ash, or even on or near the ground. Nests on cliffs generally face south. Nests will be reused by returning eagles or a new pair and may be associated with black-tailed prairie dog towns.
Breeding Season	Peak breeding season occurs from early April to late June.
Status in North Dakota	Uncommon. It is unclear if golden eagles should be considered residents or migrants.
Food habits	Primary prey includes ground squirrels and rabbits; however, eagles are opportunistic and other prey include turkey, coyote, pronghorn, porcupine, skunk, bighorn sheep lamb, great-horned owls and waterfowl.

Conservation Issues

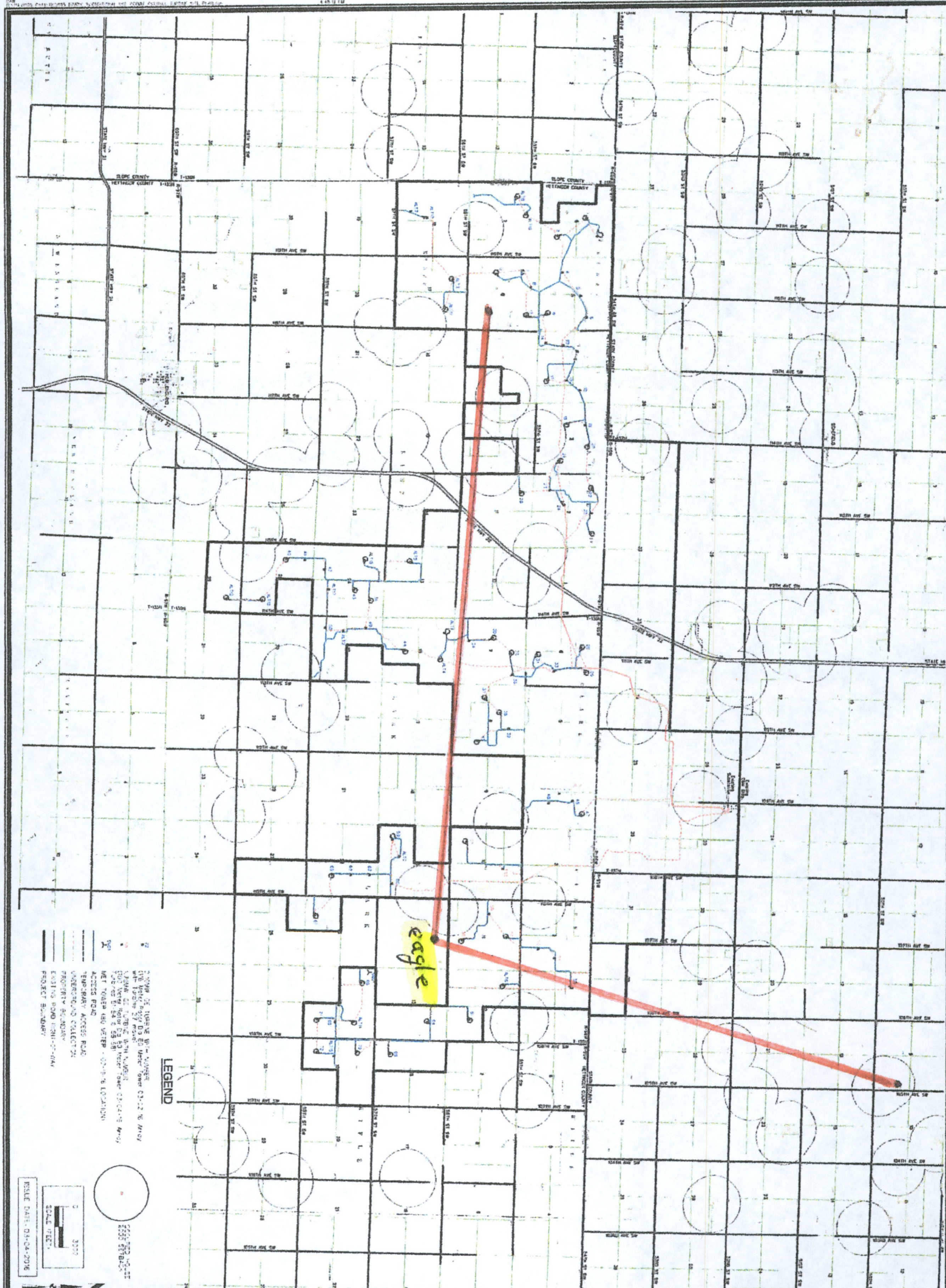
Habitat	Eagles may be limited by the abundance of their primary prey, rabbits and ground squirrels. The effect of roads fragmenting the landscape, and oil and gas exploration, is unknown but being explored.
Other Natural or Manmade Factors	Humans are believed to be the biggest threat to eagles. This includes intentional harming such as shooting, or unintentional such as poisoning of prey species. Collisions with vehicles, power lines, or other structures, and electrocution are the leading human-induced causes of death. Pesticides or contaminants are a threat when eagles consume

poisoned prey. Even after the federal ban on lead shot for waterfowl hunting, golden eagles are still exposed to lead, possibly from consuming nonwaterfowl prey. Human activity such as recreational viewing, research activities, noise, agricultural or construction activities, or the mere presence of humans may agitate nesting eagles. This may result in eagles being inadvertently flushed from the nest for extended periods of time and could result in the death of the young or nest abandonment.

North Dakota Game and Fish Department
100 N. Bismarck Expressway, Bismarck, ND 58501-5095
Phone: 701-328-6300
E-mail: ndgf@nd.gov

.35 Km away from nest

Prairie Dog Town
SE¼ 8 136 97



Prairie Dog Town
SE¼ 9 137 9

95

Project No.	1140895
Sheet	1 of 1

NEXTERA ENERGY - BRADY WIND II, LLC

CONDITIONAL USE PERMIT OVERALL TURBINE SITE PLAN

HETTINGER & STARK COUNTIES, NORTH DAKOTA

SNYDER & ASSOCIATES, INC.

1751 MADISON AVENUE
COUNCIL BLUFFS, IA 51503
712-322-3202 | www.snyder-associates.com

MARK	REVISION	DATE	BY
Engineer: SCH	Checked: MGG	Scale: 1" = 3300'	
Technician: DW	Date: 11-03-15	Field Bk:	Pg:
Project No: 1140895		Sheet 1 of 1	

7.8 Recreational Resources

7.8.1 Description of Resources

Recreational opportunities in Hettinger and Stark counties primarily include hunting and wildlife observation. The closest park to the Project Area is the Dickinson Reservoir-Edward Arthur Patterson Lake. Other recreation near the Project Area include the Old Red/Old Ten Scenic Byway and the Enchanted Highway. North Dakota Department of Trust Lands (School Trust Lands) are present within the Project Area.

The Dickinson Reservoir-Edward Arthur Patterson Lake is located on the Heart River, approximately 1 mile west of Dickinson and approximately 14 miles north of the Project Area. Recreational activities include boating, fishing, camping, and water sports (USBR 2015). The park is managed by the Dickinson Park and Recreation District.

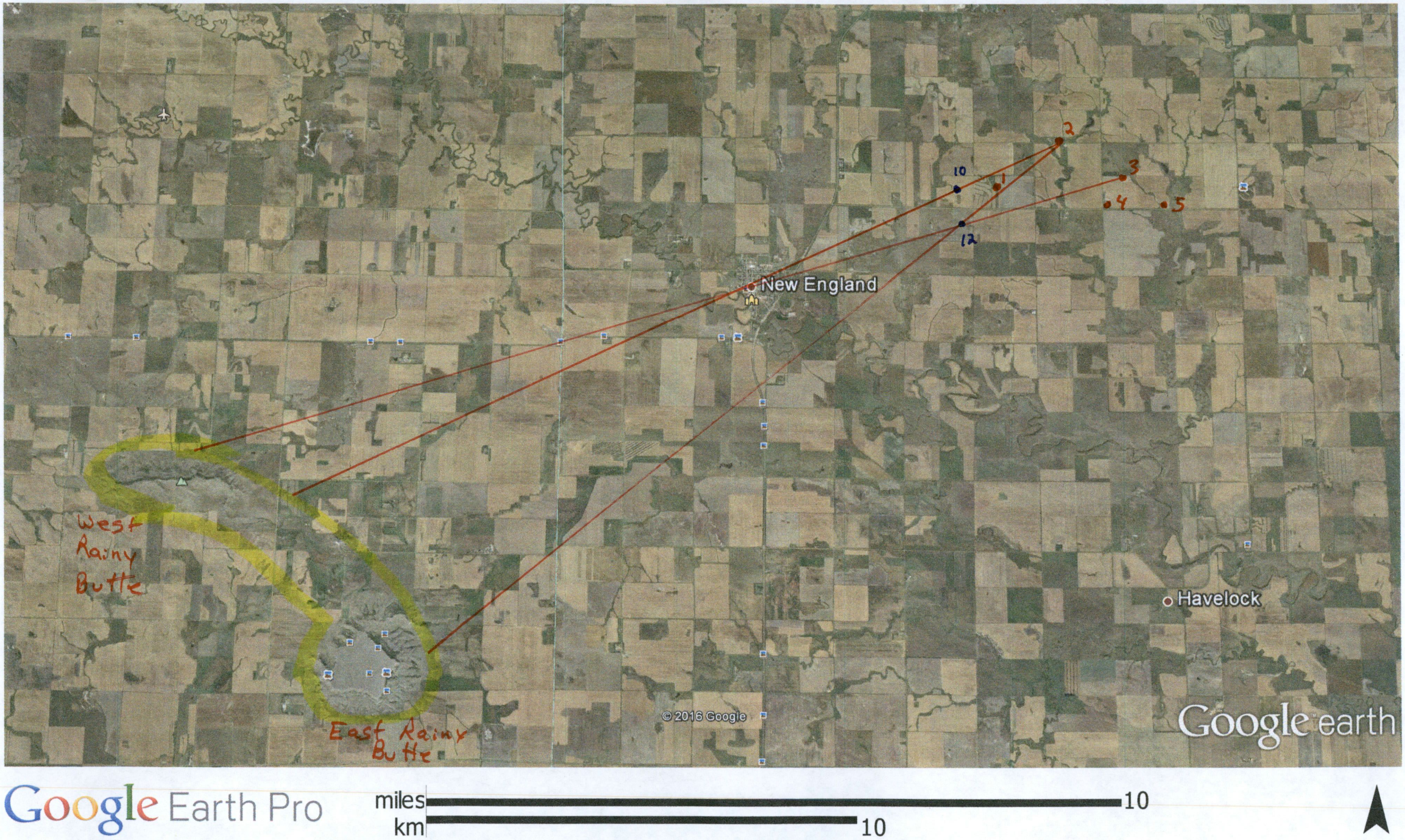
The Old Red/Old Ten Scenic Byway is a state-designated byway located approximately 15 miles north of the Project Area. The byway is oriented east to west and parallels Interstate 94 east of Dickinson. The North Dakota Scenic Byways and Backways Program is a tourism program managed by the North Dakota Parks and Recreation Department and the NDDOT.

The Enchanted Highway is a local tourist attraction consisting of various roadside art sculpture installations placed along Stark County Highway 100 ½ SW, each with a parking area and kiosk. The Enchanted Highway is oriented north and south and begins at I-94 near Gladstone and terminates 30 miles south in the small town of Regent. The Enchanted Highway is located approximately 6 miles east of the Project Area. The two closest sculptures to the Project Area are Grasshoppers in the Field (six miles northeast). Fisherman's Dream (approximately 6 miles east), and Pheasants on the Prairie (6.7 miles southeast). The Enchanted Highway is not a federal or state designated scenic highway.

The North Dakota Game and Fish Department (NDGF) administers and regulates the Private Lands Open to Sportsmen (PLOTS) program to allow hunting access on private lands through lease agreements with landowners. PLOTS allow for walk-in hunting during legal hunting seasons. Two parcels of North Dakota Department of Trust Lands School Trust Lands occur within the Project Area (**Figure 12**). These lands are open to walk-in hunting unless otherwise posted with official State Land Department signage (North Dakota Department of Game and Fish 2015).

7.8.2 Impacts

No recreational resources will be directly affected by the proposed Project. Recreational impacts would be auditory and visual in nature and limited to individuals using public or private property in and near the Project Area for hunting, fishing, or nature observation. A photo of the typical landscape in the area of the proposed Project is provided in **Figure 13**. The turbines would introduce a new visual element into the landscape, but the area already has transportation and utility infrastructure such as transmission lines, railroads, and Interstate 94. There are also five existing wind farms in the vicinity of the proposed Project, including Thunder Spirit Wind Farm



• Alt 10
• Alt 12

• 1 Rettinger house
• 2 Stagl house
• 3 Wert house
• 4 Wert house 2
• 5 Dinius house

NEXTera ENERGY RESOURCES

Investing in the future

Supporting Wind is an investment in the future.

At NextEra Energy Resources, we believe that an investment in education creates opportunities for sustainable and viable economic growth now and in the future. That's why we're proud to say that through our proposed Brady Wind project, the New England School District will receive an estim ed $8.5 million over the first 30 ears of the project.

INVESTING IN NORTH DAKOTA

Notes from New England School

By Kelly Koppinger

I would like to further define some of the information that has been presented concerning the proposed wind farms in Stark and Hettinger Counties. First, we need to understand the school budget. The major ways we pay to support schools are through property taxes, income taxes, sales taxes, corporate taxes, and energy taxes. These are the major sources of tax revenue at the state level in North Dakota. Income taxes and sales taxes go into the state's general fund and the state Legislature allocates money from that general fund to finance the services the state provides its citizens, including the service of educating the children and youth. Property taxes are paid at the county level and distributed by the county to the various political subdivisions within the county. Energy taxes are collected at the state and county level and are used to reduce the impact of the energy business on political subdivisions and to help fund state general fund expenditures.

Let's talk about property taxes. Property taxes are taxes on real estate and sometimes on other property. Before property can be taxed it must be appraised to determine its full and true value or market value. The market value of residential and commercial property is determined by an assessor who reviews the property, compares it to other property in the area, considers what other property in the area sells for, and then sets the market value of that piece of property. Agricultural property is similarly assessed, but an additional factor is applied and that is the productivity of the land as determined by records kept at North Dakota State University in Fargo. Once the market value is determined, the property is given an assessed value and a taxable value. State law sets the assessed value of property at 50% of the market value. The taxable value of property is a percentage of the assessed value. In North Dakota, the taxable value of residential property is 9% of assessed value and 10% of commercial and agricultural assessed value.

Most of us are used to thinking about property taxes in terms of mills levied (1 mill = .001 of $1), but in reality, schools can only levy the dollars needed to effectively run their school. Therefore, taxes are levied in terms of dollars and then a calculation is made to determine the mill rate of a political subdivision such as a school district. The tax is computed by multiplying the number of mills times the taxable value of the property. For example, a school district has a mill rate of 65 mills and a home has a value of $100,000, the taxes due for the school on this property would be $292.50 ($100,000/2=$50,000; $50,000x.09=$4,500.00; $4,500 x 65 mills/1000=$292.50).

Our School Funds consists of four major funds: School General Fund, Building Fund, Food Service or School Nutrition Fund, and the School Activity Fund.

The School General Fund accounts for the operations of the New England Public School District. Our estimated 2016-2017 budget is $3,648,998 for the General Fund. Of this amount, local revenue will account for about $975,000 or 26% of our total revenue. The state contribution is $2,673,798 or 72% of the revenue.

At our current levy of 80 mills, the first phase of the Brady Wind Project, located in Stark County, would provide to the District an estimated $285,000/year in local revenue. The second phase is projected to be about $290,000/year.

This is a little misleading because the state will deduct 75% of the revenue amounts from the state aid payment we are projected to receive. For example, if we receive $575,000 from the wind farm, the state would reduce our state aid payment by $431,250. Instead of receiving $2.6 million from the state we would receive $2.2 million from the state.

The school doesn't realize the bulk of this income; however the taxpayers within Stark County and Hettinger County would see a sizable reduction in their real estate taxes because of the revenue generated by the wind farm. The extra revenue, generated by the wind farm, would reduce the local taxpayer's portion of the dollars needed to be levied by the school. NEPS would still only request the dollars needed to effectively manage our school district.

If taxable valuations within Hettinger County would not have gone up recently, taxpayers in Stark County and Hettinger County would both see a reduction in their taxes. The additional revenue that could be realized by the wind farms would benefit local taxpayers more than the school district.

Wind Farm Zoning Ordinance Setback Petition

We the residents of Kunze and Clark townships in Hettinger county which represent the location of the Brady2 wind farm project request a change in the setback ordinance to respect the rights of the nonparticipating residents.

We request the zoning setback from non-participating residents of any wind turbine shall not be less than 5280 feet (1 mile).

Jon West	11191 59th St SW New England
Sheri West	11191 59th St SW New England
Robert Stagl	5470 110th ave SW New England
Alvin Urlacher	11825 55th St SW New England
Ann R. West	5658 HWY 22 S. New England
Marvin C. West	5658 Hwy 22 S. New England
Diane Urlacher	11681 58th St SW New England
Karen Madler	5995 Hwy 22 New Eng.
Michael A. Madler	5848 Hwy 22-S New England
Greg Madler	5858 Hwy 22 S New England
David C Madler	11649 57th St SW New England
Emily R. Madler	11649 57th St. S W N. England
Kristi Madler	5855 Hwy 22 S N England
Martina Stagl	11475 59th St SW New England
Kenneth W. Stagl	11475 59th St SW New England
[illegible]	5498 115th Ave SW New England
[illegible]	5549 116th Ave SW. New England

Theresa Jacobs	5549 116 Av SW New England
Bryn Jung	5665 118th Ave SW New England, N
[illegible] Jung	5696 118 Ave SW New England N
[illegible]	11905 60th St New England, ND
Tara Elkin	11905 60th St SW, New England, N
[illegible]	11687 58 St SW New England
[illegible]	11691 58 St SW New England
[illegible]	5525 111th Ave SW New England N
Leah Madler	5848 Hwy 22 S New England, ND
Julie Dinius	11115 59th St SW New England, ND
Shan Dinius	11115 59th St SW New England
[illegible] Urlacher	10824 55th St SW New England ND
Richard Stagl	11265A 58 St SW New England
[illegible] Stagl by Richard Stagl	" " " "
Bonita G Boneman	5942 Hwy 22 S New England ND
Kurt [illegible]	11685 12th St E New England
J M Sanchez	11691 58th St SW New England, ND 58647
Randy Fitterer	11625 56th St. SW New England ND
Cely Stagl	5470 110th Ave. S.W. New England
Vicki Urlacher	10825 55th St SW New England
David [illegible]	11477 59th St SW New England
Angeline [illegible]	11685 12th St Dr. E New England
Lea Dorner	5525 111th Ave SW New England
Doug Fitterer	5449 118th Ave SW New England

[illegible signature]	5949 118 Ave SW New England
[illegible signature]	11875 59th St SW New England
Lynette Klein	11875 59th St SW New England
[illegible signature]	11625 56th St SW New England 4

(13)

45/60 - 75%

15 [illegible]

6

Wind Farm Zoning Ordinance Setback Petition

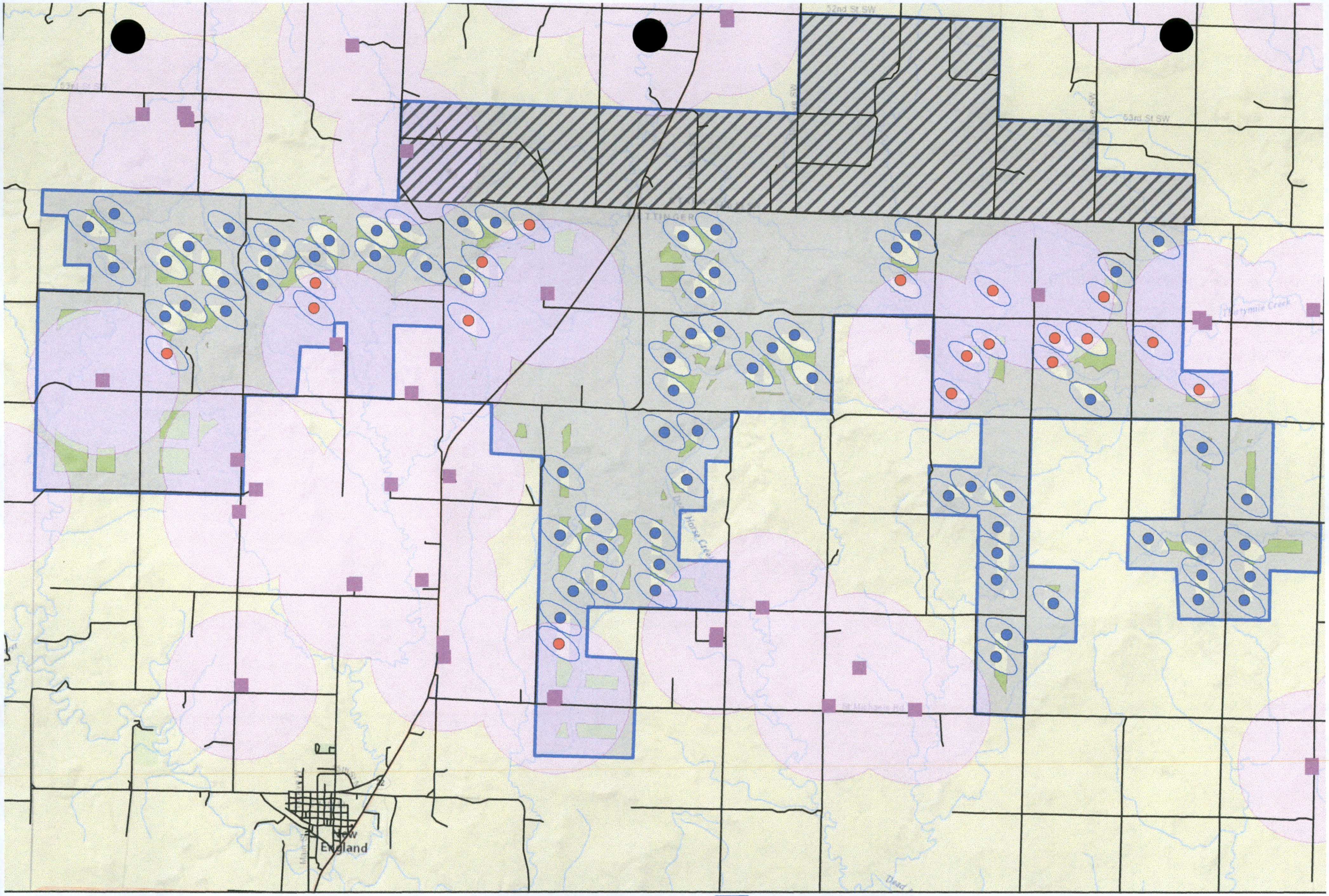
We the residents of Kunze and Clark townships in Hettinger county which represent the location of the Brady2 wind farm project request a change in the setback ordinance to respect the rights of the nonparticipating residents.

We request the zoning setback from non-participating residents of any wind turbine shall not be less than 3900 feet. This is the setback used in the Tioga wind farm project.

Jon West	11191 59th ST SW New England
Sheri West	11191 59th St SW New England
Robert Stagl	5470 110th Ave SW New England
Alvin Urlacher	10825 55th St SW New England
Ann R. West	5658 HWY 22 S. New England
Marvin C West	5658 Hwy 22 S. New England
Diane Urlacher	11687 58th St. SW New England
Karen Madler	5795 Hwy 22 So. New Eng
Michael A. Madler	5848 Hwy 22-S New England
[illegible] Madler	5858 Hwy 22 S New England
David C Madler	11649 57th St SW New England
Emily R. Madler	11649 57 St. SW N. England
Josie Stein	11649 55 St SW N England
Kristi Madler	5858 Hwy 22 S N England
Martina Stagl	11475 59th St SW New England
Kenneth M Stagl	11475 59th St SW New England
Mike Dukart	5498 115th Ave SW New England

[illegible]	5549 116th Ave SW New Englan
Theresa Jacobs	5549 116th Av SW New England
Bryan Juga	5665 118th Ave SW New England N
Ala Juga	5696 118th Ave SW New England
[illegible]	5725 118 Av [illegible] New Eng
[illegible]	11905 60th St New England, ND
Tara Ehlis	11905 60th St SW New England, ND
[illegible]	11687 58 St SW New ENGLAND
Janice Duncan	5525 111th Ave SW New England ND
Leah Madler	5848 Hwy 22 S New England, ND
Julie C. Dinius	11115 59th St SW New England ND
[illegible] Dinius	11115 59th St SW New England N
Eugene Ulrich	10824 55th St SW New England, ND
Richard Stang	11265 A 58th St. SW New England ND
Eugenia Stang by Richard Stang	11265 58 St SW New England ND
Loretta C Bohrman	5942 Hwy 22 S New England ND
[illegible] Marchwicker	11685 12th ST E New England
[illegible]	11091 58th St SW New England ND 58647
Randy Fitterer	11625 56th St. SW New England 58
Cely Stage	5470 110th Ave S.W. New England N
Vicki Ulrich	10825 55th St SW New England
David [illegible]	11477 59th St SW New Eng
Angeline Marchwicker	11685 12th St S.E New England
Lea Dorner	5525 111 Ave SW New Englan

Doug Fitten	5949 118th Ave SW New England
Janelle Fitten	5949 118 Ave SW New England
Reuben Klein	11825 59th St SW New England
Lynette Klein	11825 59th St SW New England
Laura [illegible]	11625 56th St SW New England



NEXTera ENERGY RESOURCES

Hettinger and Stark Counties, ND
Friday, February 26, 2016

Proposed Brady Wind II Project

- Preliminary Turbine Location
- Turbine Impacted by 0.75 Mile Setback
- Occupied structure on property that is not signed for wind farm
- Road
- No Turbines Allowed in Stark County
- Preliminary Project Boundary
- 0.75 Mile Non-Participating Residence Setback
- NextEra Setback
- Possible Land for Turbines
- Wake Zone

18 Turbines

0 0.5 1 Miles