

# Appendix C-4: Avian Stick Nest Survey (July 26, 2012)

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July 26, 2012

Ms. Melissa Peterson  
 Project Manager  
 enXco Development Corporation  
 10 Second Street NE, Suite 107  
 Minneapolis, Minnesota 55413

*Re: Avian Stick Nest Survey  
 Stoneray Wind Project  
 Burns & McDonnell Project No. 62823*

Dear Ms. Peterson:

Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) is providing environmental support services for the enXco Development Corporation (enXco) proposed 105-megawatt (MW) wind energy facility (Project) to be located in Pipestone and Murray counties in southwestern Minnesota (Figure 1). The Project, known as the Stoneray Wind Project, will consist of up to 62 wind turbine generators (WTGs), access roads, an underground electrical collector system, and a small electrical switchyard situated within the Project site. The Project site is generally located north, east, and southeast of Woodstock, Minnesota, and consists of all or portions of the following Sections (Table 1), which are also depicted in Figure 2.

**Table 1. Project Location**

Township (North)	Range (West)	Sections
107	44	7-10, 14-29, 32-36
107	43	30, 31
106	44	3, 4, 9, 10, 12, 13, 24, 25
106	43	6, 7, 17-20, 29, 30

Per recommendations of the U.S. Fish and Wildlife Service (USFWS) and Minnesota Department of Natural Resources (MDNR), Burns & McDonnell conducted an avian stick nest survey for the proposed Project area (approximately 22,400 acres), including a two-mile buffer (approximately 54,300 acres) around the Project boundary (study area). The purpose of the avian stick nest survey was to identify and inventory stick nests in the vicinity of the Project that are constructed by raptors, corvids, or large waterbirds (i.e., rookeries constructed and used by great blue herons) that are protected under the Migratory Bird Treaty Act (MBTA) or the Bald and Golden Eagle Protection Act (BGEPA). Some species of birds are also afforded protection under Minnesota’s Endangered Species Statute (Section 84.0895), which imposes a variety of restrictions for species designated as endangered or threatened. Other species, such as the American crow (*Corvus brachyrhynchos*), is managed by MDNR through hunting season regulations. Methodology and results of the survey are discussed below.

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## Methods

In an effort to identify and inventory avian stick nests in the vicinity of the Project, a survey from public roadways was conducted on April 5, 6, 11, and 12, 2012, for an approximate 76,700-acre survey area. The survey area included the 22,400-acre Project area, plus a two-mile 54,300-acre buffer area around the Project boundary (study area). The survey was conducted from public roadways because of property access limitations. The survey focused on available woody vegetation habitat (e.g. trees) within the survey area. This timeframe allowed the survey to be conducted prior to significant leaf-out of the vegetation; thus, the survey was conducive for observing avian stick nests. The enclosed photographs (Photographs 1 and 2) illustrate the status of typical leaf-out during the survey.

Two Burns & McDonnell staff, equipped with a global positioning system (GPS) unit, laptop computer, spotting scope, binoculars, digital camera, maps, etc., recorded observed avian stick nests during the windshield survey. Recorded nest locations were manually recorded on maps and then locations were transferred to digital maps using ArcGIS software. A data layer showing nest locations was created and is provided as Figure 3.

To determine if an individual stick nest is active, eggs or young need to be seen in the nest. Due to property access limitations, it was not possible to determine if any nests were active. To assign species usage to an observed nest, avian species observed on a nest or in the adjacent limbs were identified to species level when possible. Raptor and great blue heron nests were identified by the larger size (height and width) of the nest relative to the numerous other stick nests, or by a raptor being present on the nest or in adjacent limbs. Raptor nests were noted to be in locations with very large or mature trees (i.e., cottonwoods) and near water (i.e. stream, pond, wetland). Positive correlation of the remaining nests to a species was not possible due to the absence of individuals on the nest or in adjacent limbs.

## Results

The results yielded the observation of 65 stick nests within the survey area (Figure 3), 23 of which were observed within the Project area. Most of the stick nests observed in the survey area were located in windbreaks and small wooded areas near residences or outbuildings. Due to site access limitations, it could not be determined which species constructed or used the majority of nests or if they were active; however, it is highly likely that 21 nests in the Project site and 37 nests in the two-mile buffer area were not constructed or used by raptors or other soaring species that build stick nests.

Fifty-eight species of birds were identified during the stick nest survey, during the spring avian-point count surveys (ten total rounds of surveys) that were partly being conducted at during the same field visits as the stick nest survey, and during qualitative raptor and soaring species observations during spring/summer 2012 field survey efforts. Table 2 lists the avian species

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observed during these field visits. Soaring species (e.g., raptors, great blue herons, turkey vultures) were recorded qualitatively when not observed in conjunction with the avian point count surveys.

**Table 2. Avian Species Observations**

Species			
Common Name	Scientific Name	Common Name	Scientific Name
American bittern	<i>Botaurus lentiginosus</i>	horned lark	<i>Eremophila alpestris</i>
American coot	<i>Fulica americana</i>	house sparrow	<i>Passer domesticus</i>
American crow	<i>Corvus brachyrhynchos</i>	killdeer	<i>Charadrius vociferus</i>
American goldfinch	<i>Carduelis tristis</i>	longspur species	<i>Calcarius spp.</i>
American kestrel	<i>Falco sparverius</i>	mallard	<i>Anas platyrhynchos</i>
American robin	<i>Turdus migratorius</i>	mourning dove	<i>Zenaida macroura</i>
barn swallow	<i>Hirundo rustica</i>	northern cardinal	<i>Cardinalis cardinalis</i>
black-capped chickadee	<i>Poecile atricapillus</i>	northern flicker	<i>Colaptes auratus</i>
blue jay	<i>Cyanocitta stelleri</i>	northern harrier	<i>Circus cyaneus</i>
blue-winged teal	<i>Anas discors</i>	northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>
bobolink	<i>Dolichonyx oryzivorus</i>	osprey	<i>Pandion haliaetus</i>
brown-headed cowbird	<i>Molothrus ater</i>	redhead (duck)	<i>Aythya americana</i>
Canada goose	<i>Branta canadensis</i>	red-headed woodpecker	<i>Melanerpes erythrocephalus</i>
chipping sparrow	<i>Spizella passerina</i>	red-tailed hawk	<i>Buteo jamaicensis</i>
clay-colored sparrow	<i>Spizella pallida</i>	red-winged blackbird	<i>Agelaius phoeniceus</i>
cliff swallow	<i>Petrochelidon pyrrhonota</i>	ring-necked pheasant	<i>Phasianus colchicus</i>
common grackle	<i>Quiscalus quiscula</i>	rock dove	<i>Columba livia</i>
common snipe	<i>Gallinago gallinago</i>	savannah sparrow	<i>Passerculus sandwichensis</i>
common yellowthroat	<i>Geothlypis trichas</i>	sedge wren	<i>Cistothorus platensis</i>
dickcissel	<i>Spiza americana</i>	semipalmated plover	<i>Charadrius semipalmatus</i>
double-crested cormorant	<i>Phalacrocorax auritus</i>	short-billed dowitcher	<i>Limnodromus griseus</i>
downy woodpecker	<i>Picoides pubescens</i>	song sparrow	<i>Melospiza melodia</i>
eastern kingbird	<i>Tyrannus tyrannus</i>	spotted sandpiper	<i>Actitis macularia</i>
European starling	<i>Sturnus vulgaris</i>	Swainson's hawk	<i>Buteo swainsoni</i>
gadwall	<i>Anas strepera</i>	turkey vulture	<i>Cathartes aura</i>
grasshopper sparrow	<i>Ammodramus savannarum</i>	upland sandpiper	<i>Bartramia longicauda</i>
great blue heron	<i>Ardea herodias</i>	western meadowlark	<i>Sturnella neglecta</i>
greater prairie-chicken*	<i>Tympanuchus cupido</i>	wood duck	<i>Aix sponsa</i>
hooded merganser	<i>Lophodytes cucullatus</i>	yellow-bellied sapsucker	<i>Sphyrapicus varius</i>

\* MDNR state-listed species of special concern.

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Raptor nests were noted to be correlated with very large or mature trees (i.e., cottonwoods) and closeness to a water source (i.e. stream, pond, wetland) (Figure 3). Positive correlation of the remaining nests to a species was not possible due to the absence of individuals on the nest or in adjacent limbs. Of the 23 total stick nests observed within the Project boundary; only two nests were identified as being associated with raptors (Figure 3). Species identification of raptors associated with the two nests was not possible due to the distance of observation or presence of the raptor positioned very low in the nest for long periods of time; however, it is most likely these nests were used by red-tailed hawks. The remaining 21 nests within the Project boundary could not be positively correlated with a species or be deemed active. There were 42 stick nests observed in the two-mile buffer area, in which only five of these nests were identified as being associated with raptors. Species identification of the raptors associated with these five nests was not possible, similar to the two nests identified in the Project boundary; however, it is likely these nests were used by red-tailed hawks. Additionally, one great blue heron rookery that included four nests was observed in the two-mile buffer area, approximately 1.75 miles south of the southern Project boundary (Figure 3). The 33 remaining nests could not be associated with raptors, to a specific species, or be deemed active. Because of the prevalence of American crows, smaller-sized nests, and absence of other avian species that construct robust stick nests, it is highly likely that these nests are constructed and used by American crows rather than raptors or great blue herons.

Qualitative raptor and other soaring species observations during all field efforts from April 5 to April 25, 2012, included nine American kestrels (a cavity nesting species), five northern harriers (a ground nesting species), one osprey, eight red-tail hawks, and one turkey vulture. No bald eagles were observed during the all field efforts from April 5 to April 25, 2012.

## Conclusions

Although the majority of the Project area is comprised of cultivated lands, there were some areas within and around the Project boundary that were suitable habitat for raptors and other large birds. As a result, a roadside survey was performed to inventory stick nests within the Project boundary and within a two-mile buffer around the Project boundary. The survey recorded 23 stick nests within the Project boundary and an additional 42 within the two-mile buffer area, totaling 65 stick nests in the study area. Most of the stick nests observed in the study area were located in windbreaks and small wooded areas near residences or outbuildings. Based on the number of American crows observed during the survey and the size of 58 of the observed 65 nests, it is anticipated that the majority of the stick nests belong to American crows, rather than raptors or other soaring species. Two potential raptor nests were identified in the Project site and five potential raptor nests were identified within the two-mile buffer survey area. A great blue heron rookery (four nests close together) was observed approximately 1.75 miles south of the southern Project boundary (Figure 3).

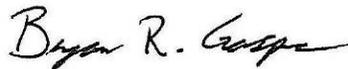
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As a result of nests identified within the study area, their locations will need to be compared to proposed turbine and facility locations. Depending upon timing of proposed construction, a follow-up survey may need to be performed to verify if the nests are active, if any new nests have been constructed, and if any of the nests are in close proximity to the proposed construction sites. Depending upon the distance of an active stick nest from proposed construction activity, a construction monitoring or mitigation plan may need to be developed.

If you have questions or are in need of further assistance regarding this Project, please contact Bryan Gasper at (816) 349-6770 or [bgasper@burnsmcd.com](mailto:bgasper@burnsmcd.com) or Robert Everard at (816) 363-7251 or [reverard@burnsmcd.com](mailto:reverard@burnsmcd.com).

Sincerely,



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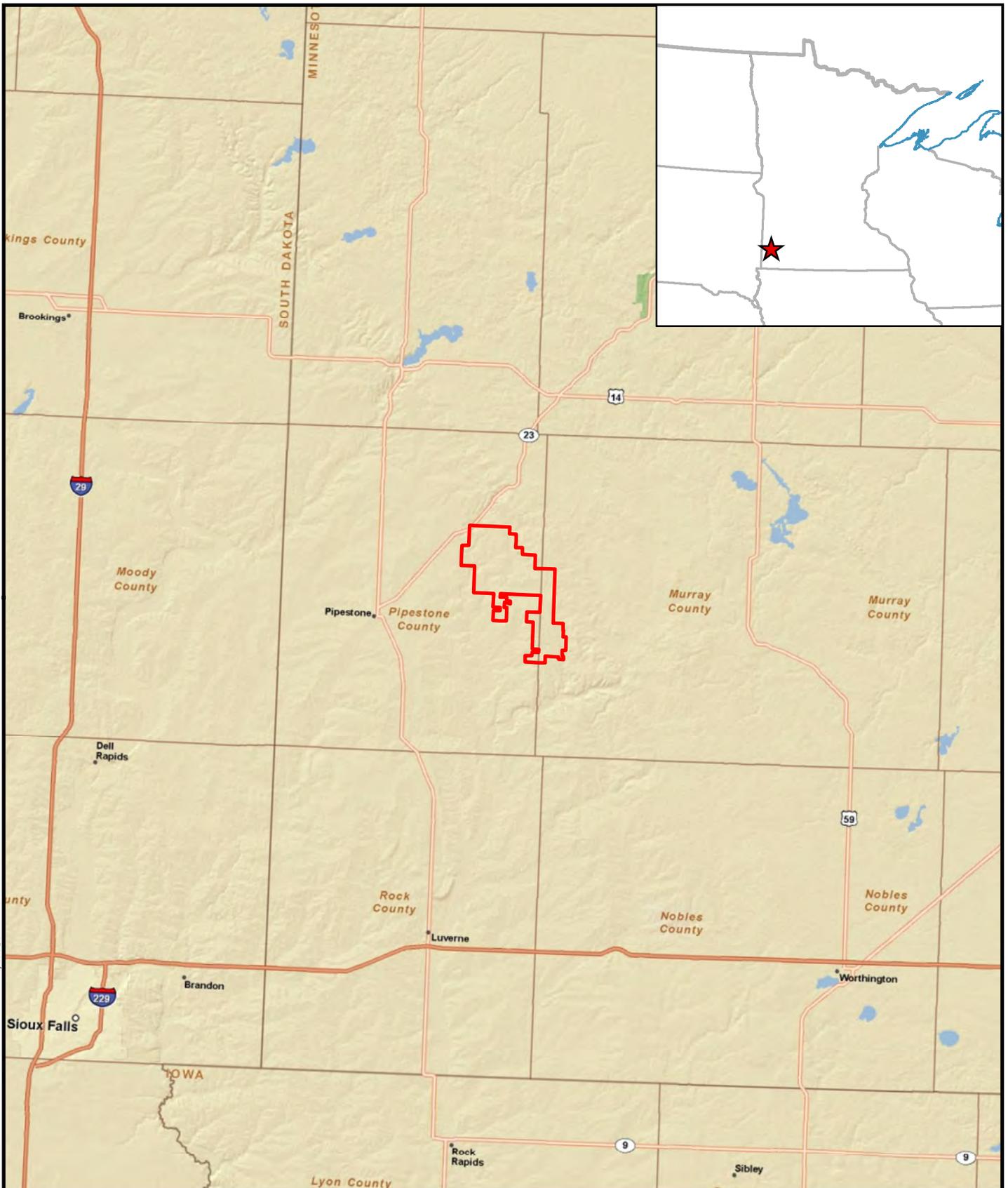
## **FIGURES**



Photograph 1: Representative leaf-out and raptor stick nest within two-mile buffer survey area during the avian stick nests survey performed from April 5 to 12, 2012.



Photograph 2: Representative leaf-out at the Project site during the avian stick nests survey performed from April 5 to 12, 2012.



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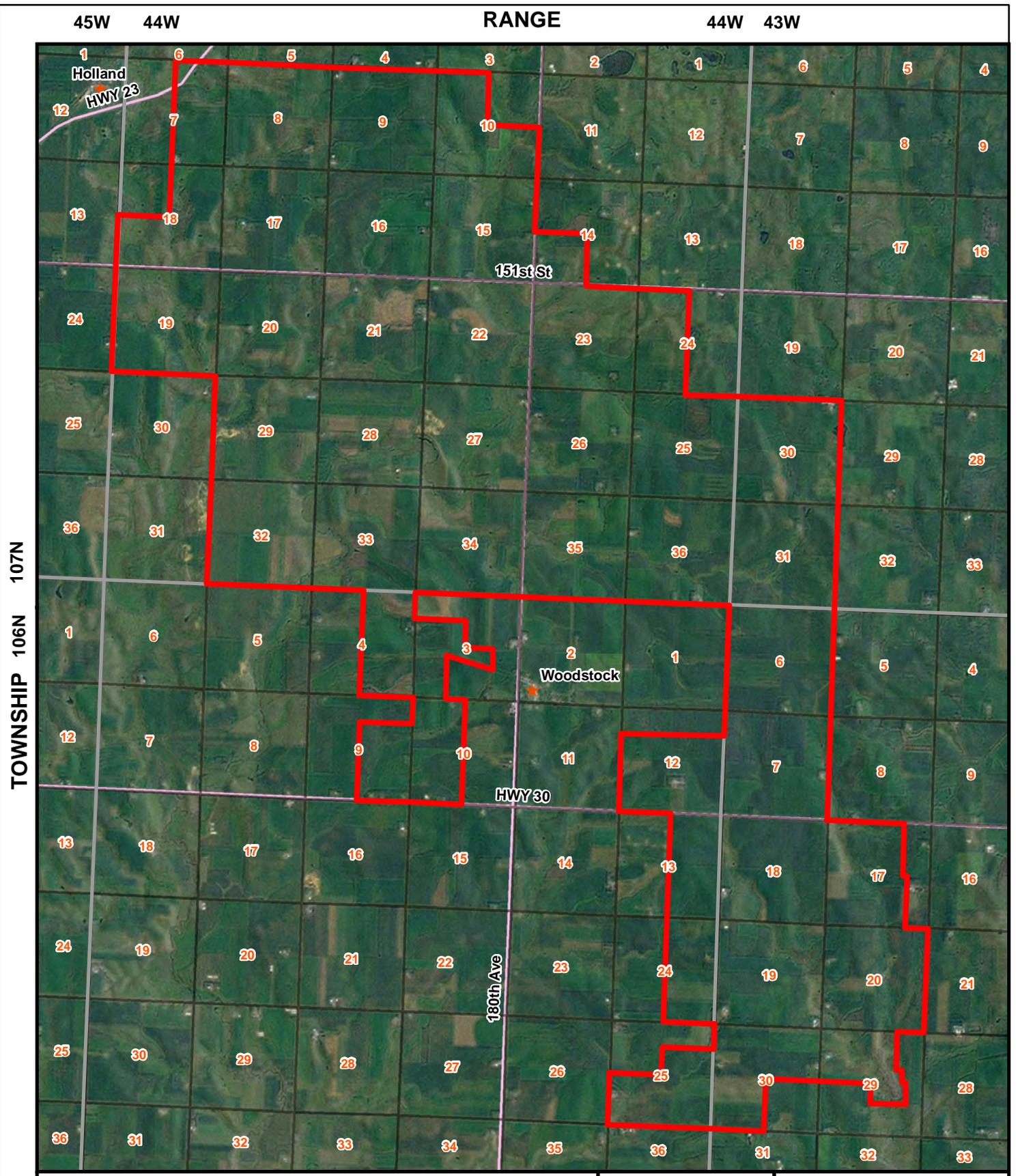
**Legend**

 Proposed Project Boundary



Figure 1  
General Location Map  
Stoneray Wind Project  
Murray & Pipestone  
Counties, Minnesota

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**Legend**

- Proposed Project Boundary
- Township and Range Sections
- Major Roads
- Town

NORTH

0 0.6 1.2 Miles



Figure 2  
Project Boundary &  
Township and  
Range Sections  
Stoneray Wind Project  
Murray & Pipestone  
Counties, Minnesota

