

Appendix C-11: Desktop Threatened and Endangered Species Habitat Assessment (June 5, 2013)



June 5, 2013

Ms. Melissa Peterson
Project Manager
EDF Renewable Energy
10 Second Street NE, Suite 400
Minneapolis, MN 55413

Re: *Desktop Threatened and Endangered Species Habitat Assessment and Proposed Field Survey*
Stoneray Wind Project
Burns & McDonnell Project No. 62823

Dear Ms. Peterson:

Per our conference call on March 15, 2012, regarding the Stoneray Wind Project (Project), you recommended that EDF Renewable Energy (EDF), formerly enXco Development Corporation, complete a desktop review and field survey to identify potential suitable habitats for the western prairie fringed orchid (*Platanthera praeclara*), Dakota skipper (*Hesperia dacotae*), and poweshiek skipperling (*Oarisma poweshiek*) in the Project area. The western prairie fringed orchid is federally listed as threatened and protected under the Endangered Species Act (7 U.S.C. § 136, 16 U.S.C. § 1531) (ESA). The Dakota skipper and poweshiek skipperling are candidate species, proposed for listing under the ESA. At this time, no Project facilities have been sited; thus, these efforts would support development of a Project site layout. As a result of your recommendation, Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell), on behalf of EDF, completed this desktop habitat review and is providing it to the U.S. Fish and Wildlife (USFWS) for review, prior to conducting a general field habitat survey.

The Project is proposed to be a 105-megawatt (MW) wind energy facility located in Pipestone and Murray counties in southwestern Minnesota (Figure 1). The 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 area. The Project area is generally located east of Pipestone, southeast of Holland, and west of Lake Wilson, with the town of Woodstock, Minnesota within the Project area. The majority of the Project area is located between Holland and Woodstock as well extending south of Woodstock and east of Hatfield, Minnesota. The Project area consists of all or portions of the following Sections (Table 1), which are also depicted in Figure 2.

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Table 1. Project Location

Township	Range	Sections
107N	44W	8, 15-29, 32-36
107N	43W	30, 31
106N	44W	1-17, 19-21, 23-26
106N	43W	5-8, 17-20, 29, 30

The current Project area encompasses approximately 29,500 acres. The initial Project area was approximately 22,400 acres in size. Only a small fraction of the expanded Project area will be disturbed for construction, and an even smaller portion will host Project facilities. The expansion of the Project area will allow greater flexibility and provide for alternative WTG locations to be considered. Sensitive natural resources, such as expansive wetlands, prairie remnants, wet meadows, etc. would be avoided and all state setback requirements would be incorporated into infrastructure layout.

The Project area is located in rural southwestern Minnesota (Figure 2). The region is dominated by agricultural land uses, particularly row crop cultivation. The Project area has gently rolling topography that is intersected by numerous county roadways that extend both east to west and north to south within and near the Project area. State roads (State Highways 30 and 23) also occur within and near the site. Population centers of Holland and Woodstock are located near the northwest and central portions of the site, respectively.

Methods

Suitable habitat for western prairie fringed orchids in southwest Minnesota include wet or moist, uncultivated (at least recently) prairie or sedge meadows (*i.e.*, potential wetlands with hydric soils and without standing water) and rights-of-way (ROW), roadside ditches, or similar low lying areas with minimal maintenance. The USFWS provided information on land and soil types that western prairie fringed orchids are known to use, including Trosky Till Plain Area 5.

The Dakota skipper and poweshiek skipperling have similar habitat requirements in Minnesota that include remnant, native tallgrass prairies that receive little grazing pressure, prescribed burning, or woody encroachment, and have numerous prairie wildflowers present, such as coneflower species (*Echinacea* spp.), camas species (*Zygadenus* spp.), and blanketflower (*Gaillardia* spp.) among others, for adult foraging. Habitat for these butterfly species in southwest Minnesota are often located on relatively steep hillsides that limit the intensity of livestock grazing.

To identify these potential suitable habitat areas for these three species via a desktop review, a variety of available electronic data was collected and reviewed from various sources, which includes, but is not limited to the following:

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- National Wetland Inventory (NWI) data
- Minnesota Public Wetland Inventory (PWI) data
- Reinvest in Minnesota (RIM) data
- National Hydrology (NHD) data
- National Land Cover Data (NLCD)
- MDNR Natural Heritage Information System (NHIS) review
- MDNR Project-specific information regarding natural resources
- USFWS species-specific information available online
- MDNR Correspondence
- USFWS Correspondence
- National Aerial Imagery Program (NAIP) aerial photography
- USGS 7.5-minute topographic maps

For purposes of this study, potential sensitive habitats and other data layers for the three species include the following:

- Wetlands
- Streams
- Floodplains
- NLCD information (*i.e.*, open space, grasslands/herbaceous)
- MDNR-NHIS Rare Species information (*i.e.*, invertebrate animal, vascular plant, communities)
- MDNR-NHIS Native Plant Communities (*i.e.*, wet meadow, upland prairie, calcareous fen)
- USFWS data (*i.e.*, Trosky Till Plain Area 5)
- Publicly owned lands (*i.e.*, federal, state, local government owned)

Information regarding the target species or suitable habitat from the USFWS and Minnesota Department of Natural Resources (MDNR) was incorporated into the analysis. Figures identifying the location of potential sensitive habitats within the Project boundary were generated using ArcGIS © software.

In addition to desktop data, general site land use information partially collected as part of a windshield survey of the initial Project area (fall 2011) and other on-going Project studies (2012) was considered in this review where data was available. Qualitative windshield surveys from public roadways have been conducted during other Project efforts in October 2011 and April, May, and June 2012. All state highways and county roads within the initial Project boundary (Figure 2) have been used for previous efforts. These observations provide a preliminary level of “ground-truthing” to ascertain if the desktop data appeared to be relatively accurate. This assessment did not include any pedestrian surveys or field efforts dedicated to the analyses. The expansion of the Project area (to the southwest) has not been previously observed in the field; therefore desktop data were the only set of data considered for that portion of the analysis.

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Results

Based on data collected from NLCD, NWI, PWI, MDNR, and the USFWS, the Project area is comprised of many land cover types and habitats. It is estimated that approximately 76 percent of the Project area is comprised of cultivated lands. Cultivated lands are not likely to support western prairie fringed orchids, Dakota skippers, or poweshiek skipperlings. Watercourses were not considered within the land cover estimates in Table 2; however, these features are important ecological resources and could host or support wildlife. The Project area contains approximately 96 linear miles of intermittent streams and 13 linear miles of perennial streams. Additionally, approximately 3 linear miles of other types of streams (categorized as connectors to lakes and wetlands) are also within the Project area.

The most notable watercourses are Rock River, East Branch Rock River, and North Branch Chanarambie Creek. Additionally, approximately four linear miles of other types of streams (categorized as connectors to lakes and wetlands) are also within the Project area. Federal Emergency Management Agency (FEMA)-designated floodplains (FEMA 2011) within the Project area are also associated with many of these streams (Figure 3).

Western Prairie Fringed Orchid

Land cover types and usage that may include suitable habitat for western prairie fringed orchid are shown in Figure 4 as well as Table 2. These include an itemized analysis of USFWS species-specific habitat information identifying Trosky Till Plain Area 5, NWI wetlands, PWI wetlands, estimates of additional wetlands from windshield surveys (where available), MDNR data for wet meadows and calcareous fens, as well as NLCD information for grassland/herbaceous vegetation and developed open spaces (*i.e.*, western prairie fringed orchids may be found in ROWs that are not frequently maintained) (Figure 4, Table 2).

The USFWS species-specific information for the Trosky Till Plain Area 5 (Figure 4) included 5,589 acres in the current Project area. NWI data for emergent wetlands, PWI wetlands, NLCD wetlands yielded 827 acres in the current Project area. The NLCD layer for developed, open space (*i.e.*, ROWs among other land usages) included 1,409 acres. The NLCD layer for grassland/herbaceous within the Project boundary totaled 3,838 acres. MDNR data for wet meadows, calcareous fens, and marshes within the Project area totaled 44 acres (Table 2). Overlap between classifications is unavoidable due to the independent systems used for delineating habitats from a desktop level. However, NWI, PWI, and NLCD data that are within the Trosky Till Plain Area 5 are the areas most likely to have habitat capable of supporting western prairie fringed orchids. Additionally, identified wetlands (NWI or qualitative windshield surveys within the initial Project area) and low-lying grassland areas outside, but very near to the Trosky Till Plain Area 5, may also have habitat capable of supporting this species (Figure 4).

Table 2. Land Cover Estimates Within the Project Area

Land Cover Type	Acreages
NLCD	
Developed, Open Space	1,409
Developed, Low Intensity	51
Developed, Medium Intensity	17
Developed, High Intensity	1
Barren Land	17
Deciduous Forest	48
Shrub/Scrub	1
Grassland/Herbaceous	3,838
Pasture/Hay	1,620
Cultivated Crops	22,379
NLCD Total	29,381
Wetlands	
Palustrine Emergent Wetland (PEM)*	657
Palustrine Forested/Shrub Wetland (PSS)*	7
Palustrine Pond (PUB)*	23
Riverine Wetland (R)*	1
PWI Wetland*	63
RIM Wetland Areas*	14
NLCD Wetland	62
Wetlands Total	827
USFWS Data	
Trosky Till Plain Area 5*	5,589
USFWS Data Total	5,589
MDNR Natural Communities	
Marsh*	5
Wet Meadow*	37
Calcareous Fen*	3
Upland Prairie*	435
MDNR Natural Communities Total	480

*These land cover types overlap with the NLCD. NLCD for the Project area encompasses the entire Project area.

Uncultivated wet areas can provide suitable habitat for western prairie fringed orchids. The expanded Project area likely contains additional wetlands that have not been evaluated; however, a windshield survey has not been completed for the expanded area and cannot be accounted for at the time of reporting. There appear to be more acres of herbaceous emergent wetlands, as estimated by a previous windshield survey of the initial Project area (fall 2011), than are indicated in both the NLCD and NWI datasets. Based on the survey and observation of vegetation type and hydraulic features within the Project area, there could be approximately 50 to 200 acres of additional wetland areas. Thus, it is possible that the initial Project area could

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contain 850 to 1050 acres of wetland areas and 22,425 to 22,525 acres of cropland. Undocumented wetland areas could also exist as there are areas within the NHD as well as hydric soils within the Project area that could potentially contain wetlands. NWI, PWI, and NLCD do not indicate the presence of wetlands in all of these locations. Hydric soils are one of the three characteristics of wetlands as defined by the Clean Water Act (33 U.S.C. § 1251) (CWA). The other two characteristics are vegetation and hydrology.

Dakota Skipper and Poweshiek Skipperling

Land cover types that may provide suitable habitat for Dakota skippers or poweshiek skipperlings are shown in Figure 5 as well as Table 2. Classifications within the analysis for these species included MDNR data on rare species for invertebrate animals, community types (*i.e.*, prairies), and upland prairies, in addition to NLCD data for grassland/herbaceous areas. Table 2 provides a breakdown of the various land cover types specific to each analysis and their approximate quantity within the Project area; however, classifications such as “invertebrate animal” are not included due to the uniform size (*i.e.*, circular size) of the buffer around an observation. Inclusion of the acreage for this characteristic is unwarranted.

Grassland/herbaceous areas may include habitat capable of supporting (relative to other habitat classifications) Dakota skippers and poweshiek skipperlings (*i.e.*, remnant warm season grasslands of various sizes). From MDNR species information, the Dakota skipper prefers native dry-mesic to dry prairie with mid-height clump grasses in Minnesota. The root areas of the mid-height grasses are used by the larval stages of the species and include primarily little bluestem (*Schizachyrium scoparium*), prairie dropseed (*Sporobolus heterolepis*), and side-oats grama (*Bouteloua curtipendula*). Adult life stages of the species require coneflower species (*Echinacea* spp.) for foraging, among others. Based on the windshield survey of the initial Project area (Fall 2011), the NLCD data for the Project area overestimates grassland/herbaceous (3,838 acres) and pasture/hay areas (1,620 acres), while underestimating cultivated croplands (22,379 acres). The variations are likely partially the result of areas used for hay production of alfalfa. These areas are included in the “Pasture/Hay” classification. General agricultural practices rotate areas producing alfalfa to row-crops on 5 to 7 year intervals to minimize insect and weed issues. Therefore, these areas may alternate classifications depending on the timing of the analysis. MDNR data for upland prairies included 435 acres. These areas indicated as upland prairies may include habitat capable of supporting Dakota skippers or poweshiek skipperlings.

General Land Use

Land use surrounding the Project area appears to be similar to the areas within the Project boundaries as well as similar to the proposed usage by the Project. There are numerous wind energy facilities in the surrounding area. Smaller scale wind energy facilities (*i.e.*, one to three wind turbines, typically) in the general area include:

- Boeve Windfarm
- Fey Windfarm

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- JJN Wind Farm
- K-Brink Windfarm
- Kas Brothers Windfarm
- Moulton, Chandler Hills Wind Farm Phase II
- Windcurrent Farms LLC Windfarm
- Woodstock Municipal Wind

Larger wind energy facilities, which consist of eight or more wind turbines, also exist near the Project area, including:

- Breezy Bucks (I, II) Salty Dog (I, II) Roadrunner, Wind Dog, Wally's Wind Farm
- Chanarambie Wind Project
- Fenton Wind Power Project
- Lake Benton II Wind Farm
- Minnesota Windshare Wind Project
- Moraine Wind Power Project
- Ridgewind Wind Farm
- Valley View Wind Farm
- Viking Wind Project
- Westridge Wind Farm

Some of the state-managed lands in the region may host sensitive species and habitats. Based on MDNR data, two state-managed properties occur within the Project area (Figure 6) (MDNR 2013a, 2013b). This property is a Conservation Reserve Enhancement Program (CREP) area located in the central part of the Project area (T107N, R44W, Section 35). The Casey Jones State Trail is also an area managed by the State of Minnesota that bisects the west and central portions of the Project area, east to west (T106, R43W, Sections 5, 6, 7, 8 and T106, R44W, Sections 1, 2, 3, 4, 5, 7, and 8). The Terrace Wildlife Management Area (WMA) is located along the western boundary of the Project area (T106N, R44W, Section 6 and T107N, R44W, Section 31). The Van Beek WMA is located along the eastern boundary of the Project area (T107N, R44W, Section 24). The Salt & Pepper WMA is located along the southern boundary of the Project area (T106N, R43W, Section 29). Additionally, MDNR data indicates there are two "terrestrial communities" within the Project area (MDNR 2013a, 2013b).

Four state-managed WMAs, four RIM conservation easements, and five CREP conservation easements are also located along the boundary or within one mile of the Project area (Figure 8). Some of these state-managed lands are known to or could potentially host sensitive species and habitats. These areas include:

- Holland WMA (T107N, R44W, Section 5)
- Terrace WMA (T106N, R44W, Section 6 and T107N, R44W, Section 31)
- Van Beek WMA (T107N, R44W, Section 24)
- Salt & Pepper WMA (T106N, R43W, Section 29)

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- Wetland Preserve (RIM) (T107N, R43W, Section 18)
- Marginal Cropland (RIM) (T107N, R44W, Section 7)
- Marginal Cropland (RIM) (T107N, R44W, Section 13)
- Unspecified RIM (T106N, R43W, Section 2)
- Native Prairie Bank (CREP) (T106N, R43W, Section 32)
- Native Prairie Bank (CREP) (T106N, R43W, Section 32)
- Native Prairie Bank (CREP) (T106N, R43W, Section 33)
- Native Prairie Bank (CREP) (T106N, R43W, Section 33)
- Native Prairie Bank (CREP) (T106N, R43W, Sections 32 and 33)

From data collected and reviewed, there do not appear to be USFWS-owned lands, Waterfowl Production Areas (WPAs), MDNR Designated Wildlife Lakes, MDNR Migratory Waterfowl Feeding and Resting Areas (MWFRA), State Game Refuges, or State Wild, Scenic, and Recreational Rivers (WSRs) within one mile of the Project area. However, there are areas within and adjacent to the Project area that are considered Minnesota Working Lands Initiative (WLI) areas and Minnesota County Biological Survey (MCBS) Sites of Biological Significance (Figure 6). The WLI is a public/private partnership with MDNR for wildlife development on working farms that aims at promoting general wildlife habitat. The MCBS is a survey conducted by the MDNR to obtain biological data, including areas that could be of biological significance or importance.

The Audubon Society has designated Important Bird Areas (IBA) throughout the United States. The IBA program is focused “To identify and conserve areas that are vital to birds and other biodiversity.” Two IBAs are included in the northwest and southeast portions of the Project area (Figure 7).

Conclusions

Although the majority of the general Project area is comprised of cultivated lands, there are some locations that can be considered potentially sensitive habitats for western prairie fringed orchids, Dakota skippers, or poweshiek skipperlings. These sensitive habitats would be considered during the field portion of the habitat assessment and when developing the Project layout. These sensitive habitats include:

- Wetlands, thus far indicated by NWI, PWI, and qualitative windshield efforts
- NLCD-indicated land uses: grasslands/herbaceous areas, developed and open spaces
- MDNR-indicated habitats: upland prairie, wet meadow, calcareous fen
- MDNR-NHIS Rare Feature locations
- USFWS-Designated Species Priority Areas by habitat type, soil type, or land use (*i.e.*, Trosky Till Plain Area 5)
- Audubon IBAs in two portions of the Project area

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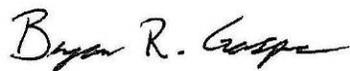
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Other potential suitable habitat areas could also exist within the Project area that were not identified as a part of this study, such as rock outcroppings, fallow fields, Conservation Reserve Program (CRP) lands, unknown wetlands, etc. These areas could contain suitable habitat for these species as well.

Based on this desktop review and your review, a field sensitive species habitat assessment was conducted in July 2012. The intent was to conduct general field reconnaissance on lands EDF currently has access permission. For areas where suitable habitat may occur where EDF does not have access permission, the best attempt practicable was made to observe areas from public roadways or adjacent lands where access is permissible. Potential suitable habitats observed during the field survey that were not identified as part of this desktop review were also surveyed. Information regarding the field efforts for assessing habitat are found in the *Threatened and Endangered Species Field Habitat Assessment* completed by Burns & McDonnell in 2012.

If you have questions or need additional information, please contact Bryan Gasper at (816) 349-6770 or bgasper@burnsmcd.com or Robert Everard at (816) 363-7251 or reverard@burnsmcd.com.

Sincerely,

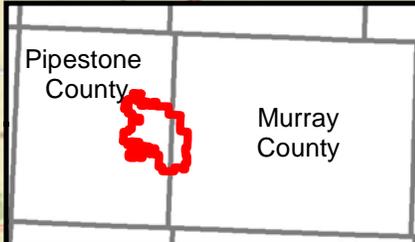
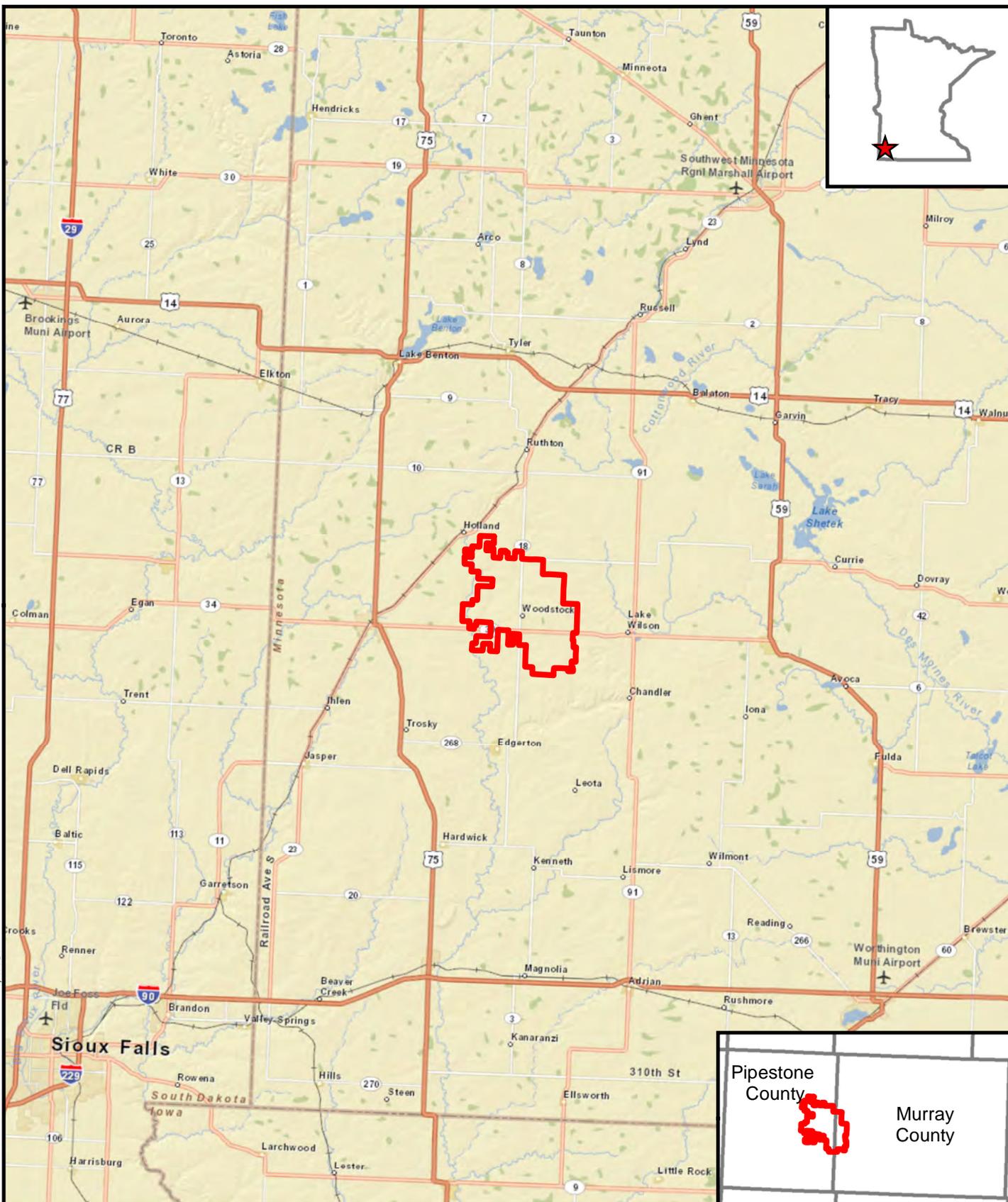


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Enclosures

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Melissa Peterson, EDF
Andy Kim, EVS
Robert Everard, Burns & McDonnell
Justin Bailey, Burns & McDonnell

FIGURES



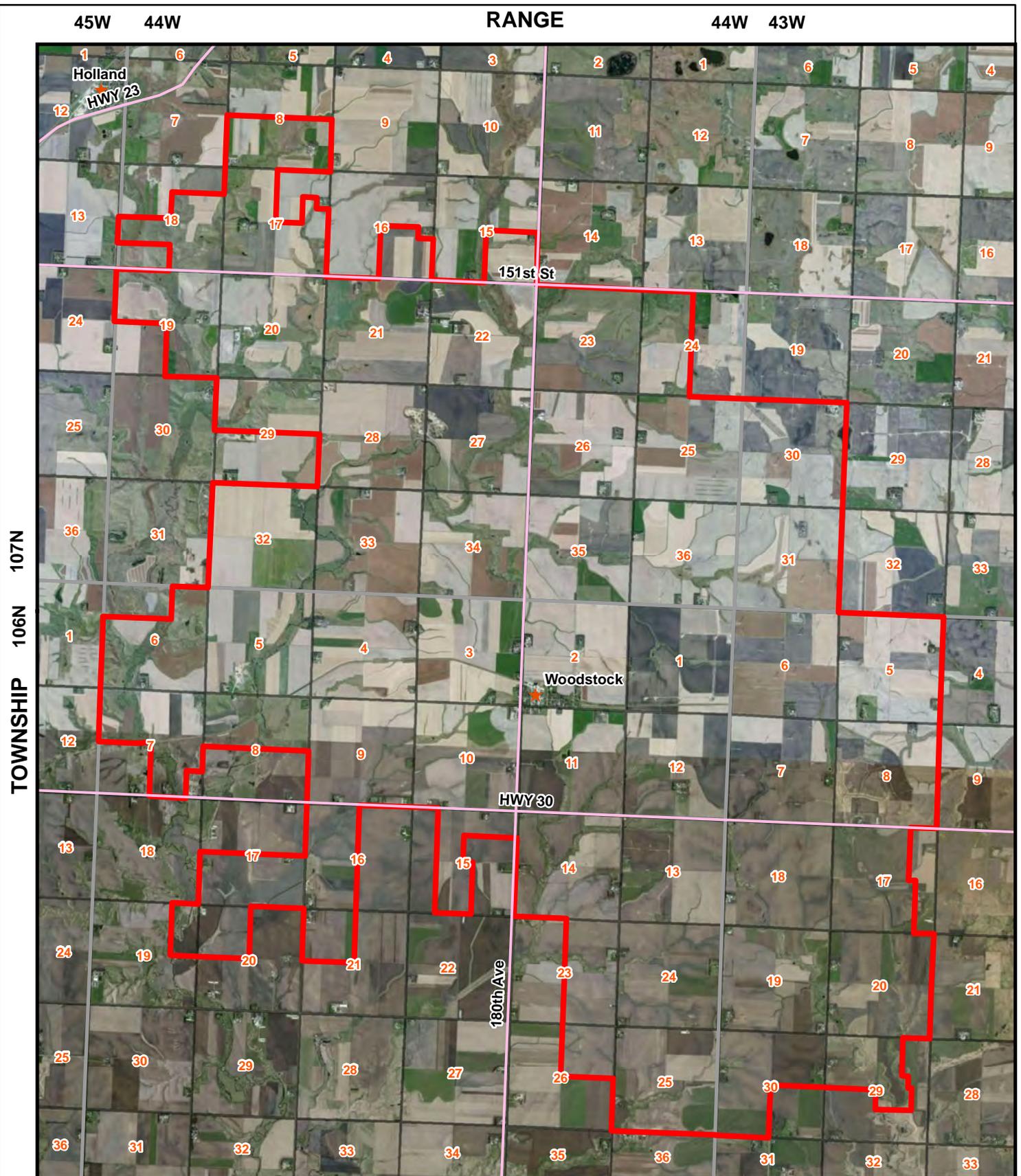
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Miles

Legend

 Proposed Project Boundary



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



0 0.5 1 Miles

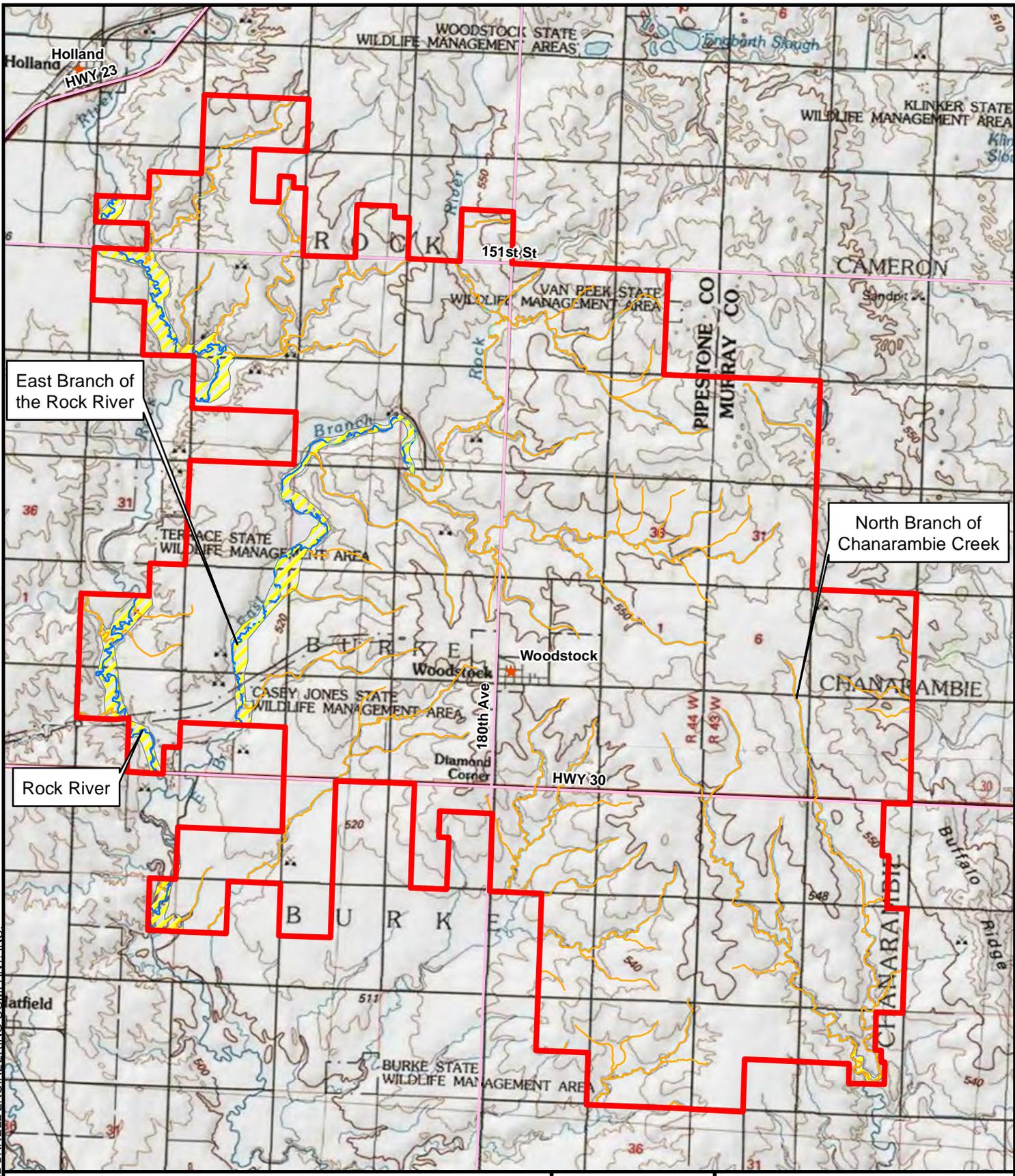
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-  Proposed Project Boundary
-  Township and Range Sections
-  Town
-  Major Roads

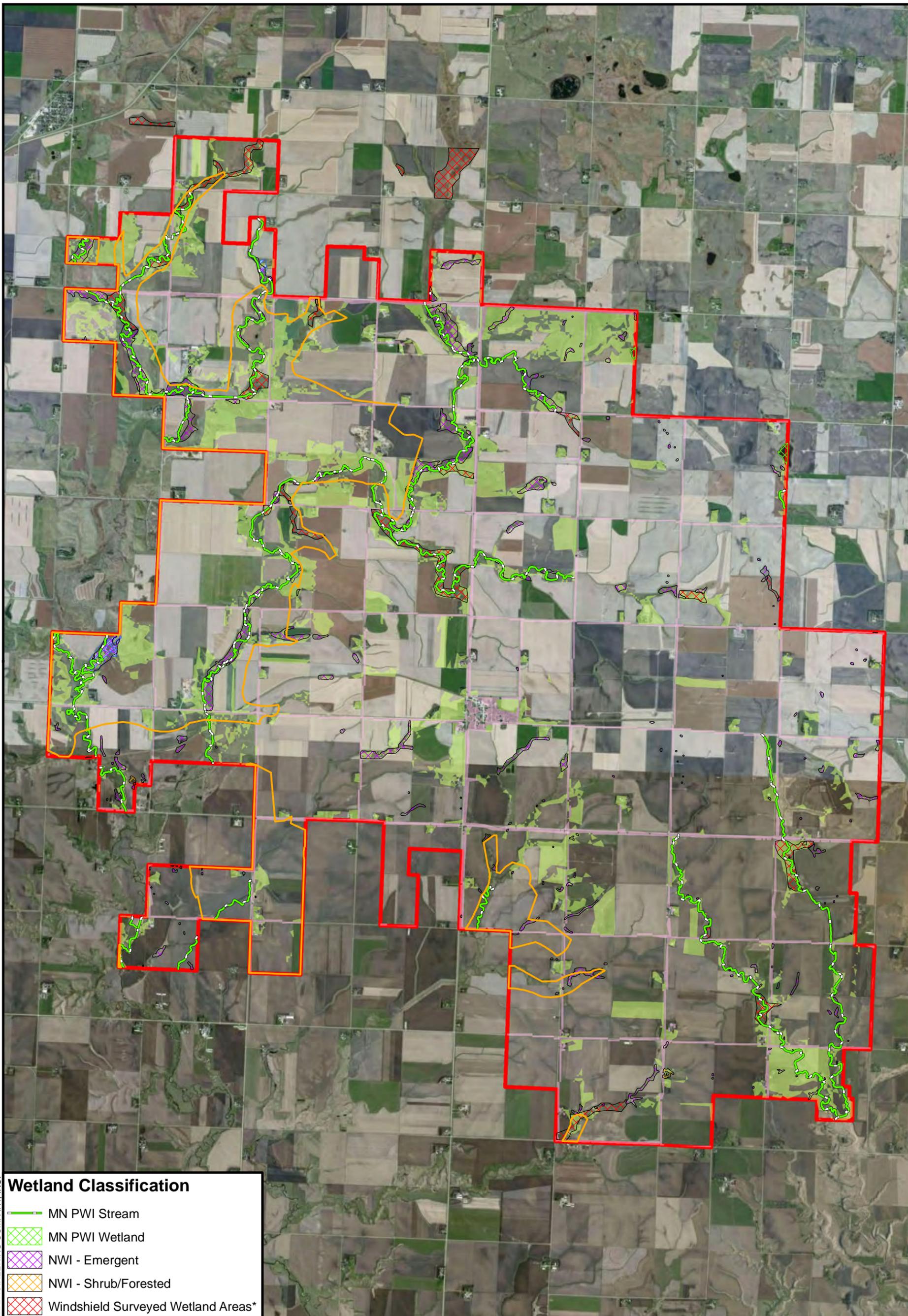


Figure 2
Project Boundary &
Township and
Range Sections
Stoneray Wind Project
Murray & Pipestone
Counties, Minnesota

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  <p>0 0.5 1 Miles</p>	<p>Legend</p> <ul style="list-style-type: none"> Proposed Project Boundary FEMA Floodplain Major Roads ★ Town <p>Stream Type</p> <ul style="list-style-type: none"> Perennial Intermittent Other 		<p style="text-align: center;">Figure 3 National Hydrology Dataset & FEMA Floodplain Stoneray Wind Project Murray & Pipestone Counties, Minnesota</p>
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Wetland Classification

-  MN PWI Stream
-  MN PWI Wetland
-  NWI - Emergent
-  NWI - Shrub/Forested
-  Windshield Surveyed Wetland Areas*

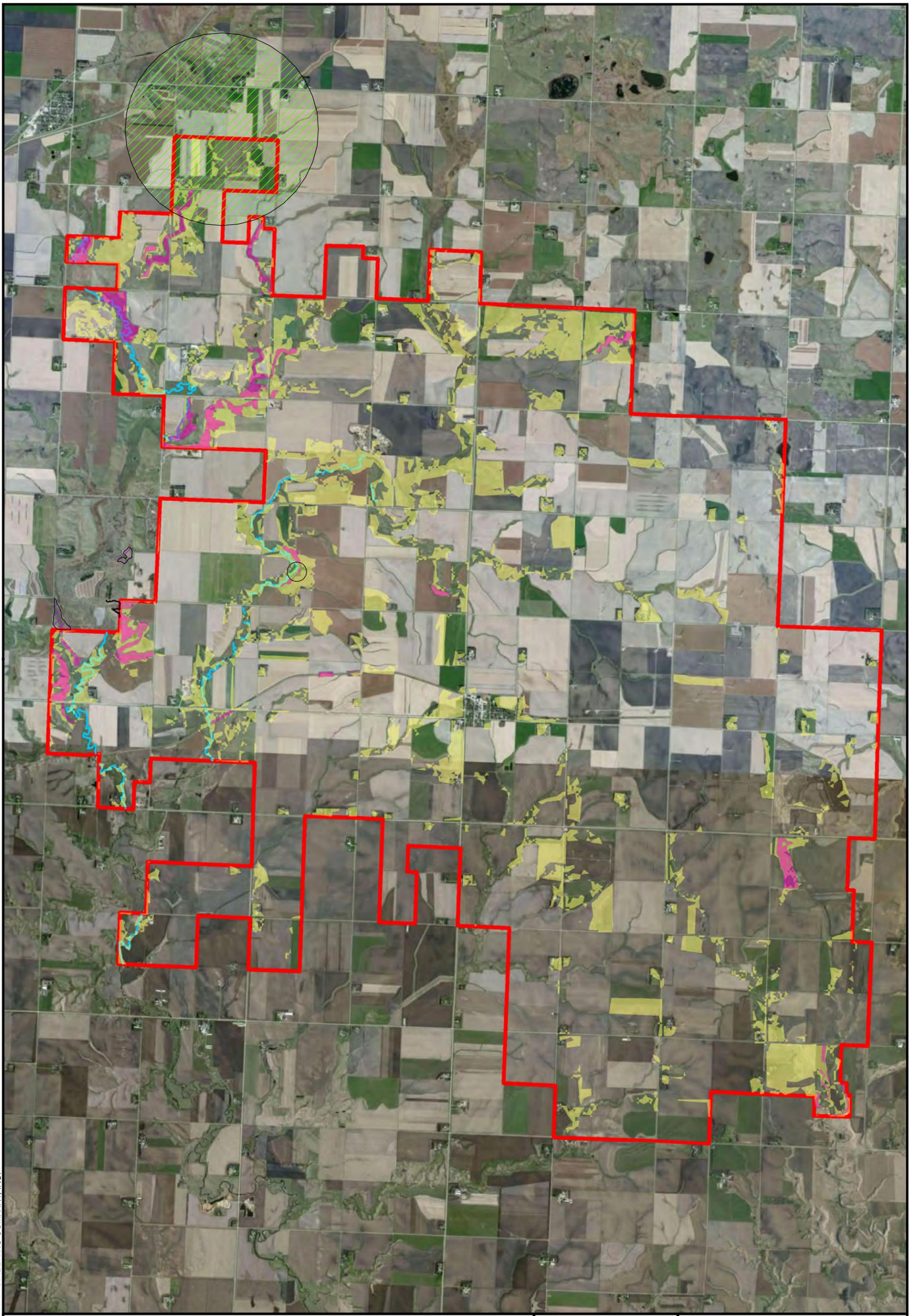
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- | | |
|---|--|
|  Proposed Project Boundary |  Marsh |
|  Trosky Till Plain Area 5 |  Calcareous Fen |
|  Developed, Open Space |  Wet Meadow |
|  Grassland/Herbaceous |  Vascular Plant |
|  Perennial Stream | |



Figure 4
 Western Prairie Fringed Orchid
 Desktop Analysis
 Stoneray Wind Project
 Murray & Pipestone
 Counties, Minnesota

* Data Provided Is Applicable Only For The Previous Project Boundary (2011)

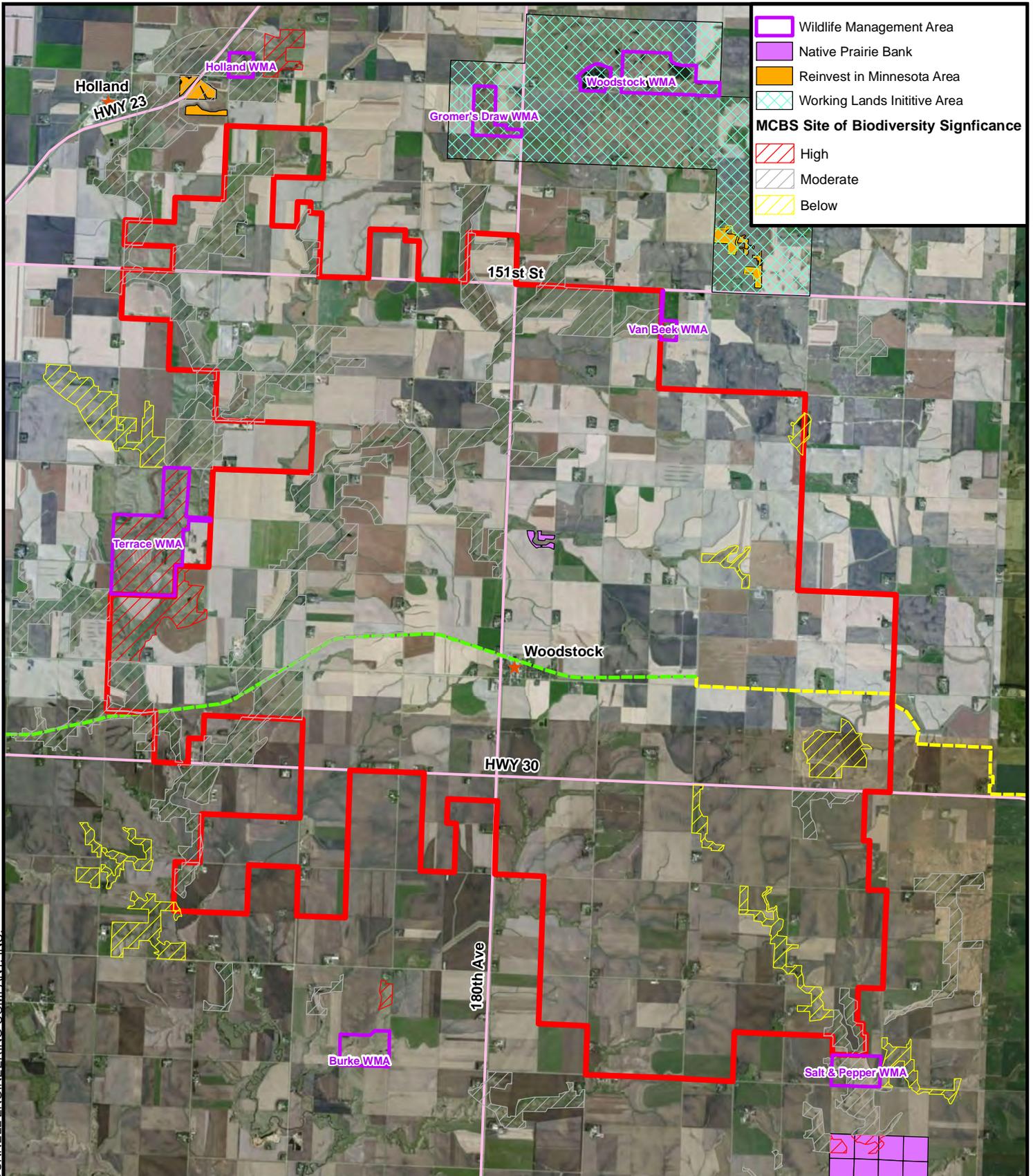


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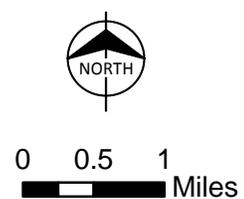
-  Proposed Project Boundary
-  MCBS Upland Prairie
-  NLCD Grassland/Herbaceous
-  Rare Species Community
-  Invertebrate Species
-  Perennial Stream



Figure 5
Dakota Skipper &
Poweshiek Skipperling
Desktop Analysis
Stoneray Wind Project
Murray & Pipestone
Counties, Minnesota



Wildlife Management Area
 Native Prairie Bank
 Reinvest in Minnesota Area
 Working Lands Initiative Area
MCBS Site of Biodiversity Significance
 High
 Moderate
 Below



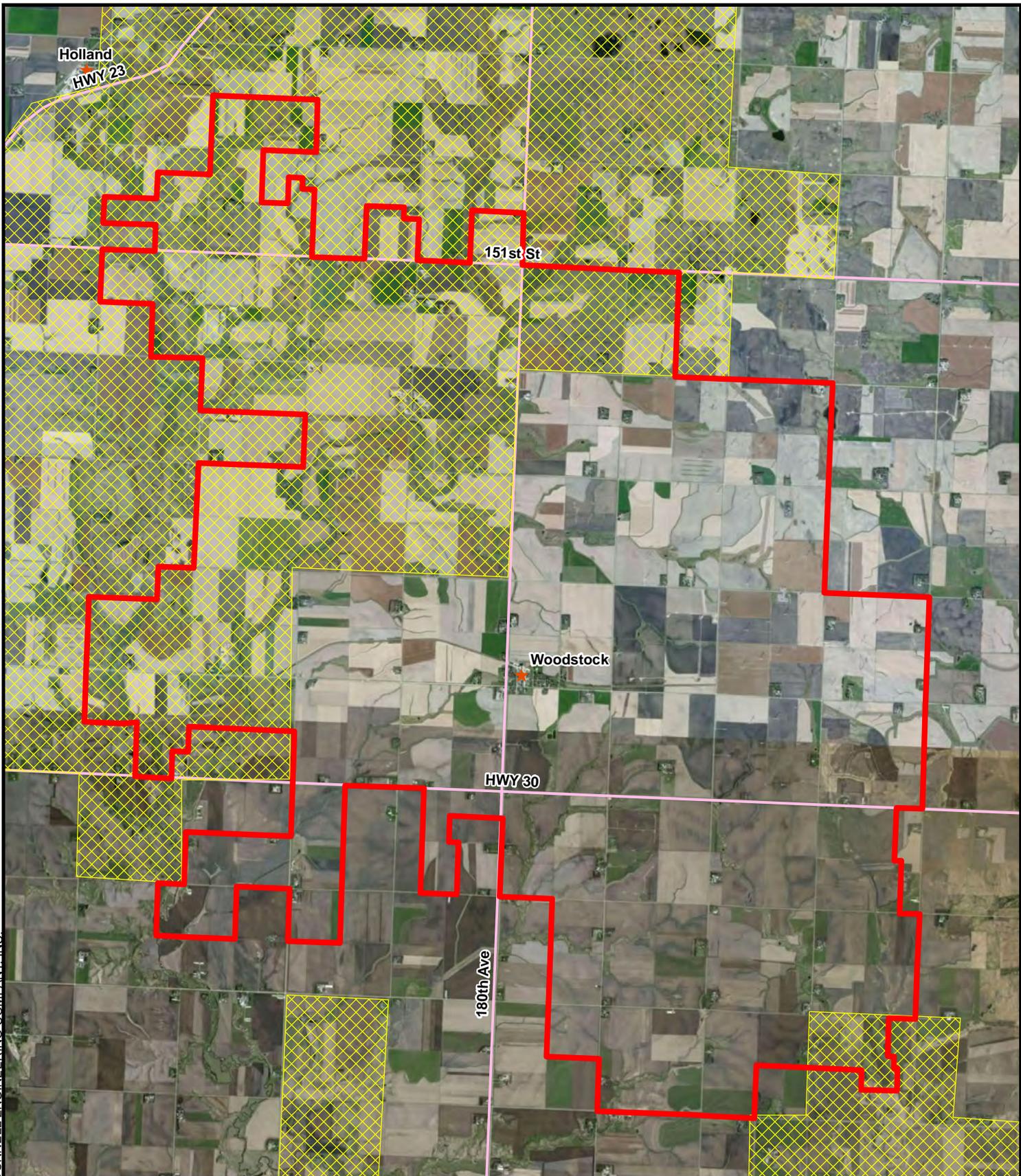
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- Proposed Project Boundary
- ★ Town
- Casey Jones State Trail
- Casey Jones State Trail Potential Expansion
- Major Roads



Figure 6
 Minnesota Public Lands/
 Easements, Working Lands
 Initiative, Sites of Biological
 Significance & State Trail Map
 Stoneray Wind Project
 Murray & Pipestone
 Counties, Minnesota

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0 0.5 1 Miles

Legend

-  Proposed Project Boundary
-  Audubon Society Important Bird Area
-  Town
-  Major Roads



Figure 7
Important Bird Areas
Stoneray Wind Project
Murray & Pipestone
Counties, Minnesota