



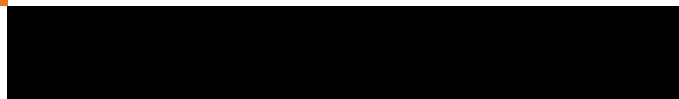
**2014 Dakota skipper (*Hesperia dakotae*) and  
Poweshiek skipperling (*Oarisma poweshiek*)  
Survey Report – A Supplement to the 2013  
Report**

Montana-Dakota Utilities Co.  
and Otter Tail Power  
Company

Big Stone South to Ellendale Project

*North Dakota and South Dakota*

**October 27, 2014**



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## Summary

Montana-Dakota Utilities Co., a division of MDU Resources Group Inc. (Montana-Dakota) and Otter Tail Power Company (Otter Tail) propose to construct the Big Stone South to Ellendale Project (Project). The Project consists of a 345 kilovolt (kV) transmission line approximately 160-170 miles long in North Dakota and South Dakota and the Ellendale 345-kV Substation near Ellendale, North Dakota.

HDR Engineering, Inc., (HDR) was retained to evaluate native prairie habitats along the Project for the presence of the Dakota skipper (*Hesperia dakotae*) and the Poweshiek skipperling (*Oarisma poweshiek*). In October 2014, the Dakota skipper was designated as threatened and the Poweshiek skipperling was designated as endangered and both are protected under the Endangered Species Act.

The 2014 survey area included a 250-foot-wide corridor, centered on the centerline of the transmission line route on selected parcels that harbored grassland habitat and where survey permission was granted by private landowners or on publicly owned parcels. The parcels selected for survey harbored native grassland habitat observed during the 2013 Dakota skipper and Poweshiek skipperling surveys and where HDR's native prairie habitat model indicate conditions that are suitable for the presence of these target species.

The survey objective was to determine the presence or absence of these butterflies during the peak flight period on tracts that exhibited characteristics consistent with their habitat requirements during the peak flight period.

Biologists conducted ground surveys between July 11 and July 16, 2014. The survey dates fell between the earliest reports of adult Dakota skipper emergence on July 3, 2014 (Skadsen pers. comm.) and the last reported observation of July 17, 2014.

No Dakota skippers or Poweshiek skipperlings were observed on lands crossed by the Project during the 2014 surveys. Butterfly numbers were generally low for all butterfly species. HDR evaluated 14 parcels for habitat characteristics that could harbor Dakota skippers or Poweshiek skipperlings (Figures 1-14). Three parcels contained habitat characteristics consistent with the presence of these species. Figures 10, 11, and 12 show the areas surveyed by HDR.

Dakota skipper and Poweshiek skipperling surveys were conducted in areas that harbor grassland tracts containing an abundance of native plant species within the survey area. Suitable habitat capable of supporting the presence of the Dakota skipper and Poweshiek skipperling include native prairie areas adjacent to wetlands and native prairie remnants on slopes where agricultural conversion was minimized due to topography constraints.

The Project in North Dakota is entirely in Dickey County and avoids the Dakota skipper strongholds in McHenry and Ransom counties, North Dakota. The Project route also avoids South Dakota strongholds on tribal lands in Day and Roberts counties. The Project route does however, cross suitable habitat on private lands and publicly owned lands in Day and Grant counties, South Dakota.

# Introduction

Montana-Dakota Utilities Co. (Montana-Dakota) and Otter Tail Power Company (Otter Tail) propose to construct, operate, and maintain a 345-kilovolt (kV) transmission line and a new substation. The new transmission line will extend from the new Ellendale 345 kV Substation in Dickey County, North Dakota to the Big Stone South Substation in Grant County, South Dakota. The project is called the Big Stone South to Ellendale Project (Project).

To address regulatory agency concerns about potential impacts to Dakota skippers (*Hesperia dakotae*) and Poweshiek skipperlings (*Oarisma poweshiek*), HDR Engineering, Inc. (HDR) was retained to conduct presence/absence and habitat surveys for these species. Survey methods were developed with United State Fish and Wildlife Service (USFWS) oversight to identify the extent of risk posed to these candidate species from the Project. The USFWS listed the Dakota skipper as a threatened species and Poweshiek skipperlings as endangered with regulatory protection afforded under the Endangered Species Act. Please reference the 2013 report for an overview of the regulatory framework.

Presence/absence surveys were conducted within the survey area, which is a 250-foot-wide buffer of the route centerline extending from the new Ellendale 345 kV Substation in North Dakota to the Big Stone South Substation in South Dakota. Study sites containing potentially suitable habitat within the survey area were designated as Environmentally Sensitive Areas (ESA) and were used to identify specific locations evaluated for targeted surveys.

HDR biologists are experienced in the survey methodology and identification of the Dakota skipper, Poweshiek skipperling and other prairie obligate butterflies. They have conducted surveys in western Minnesota, eastern South Dakota, and North Dakota and have recorded previously undocumented locations for Dakota skippers in 2006 and 2012.

The butterfly surveys focused on grassland habitats that exhibit native plant assemblages used by prairie obligate butterflies such as the Dakota skipper, Poweshiek skipperling, Ottoe skipper (*Hesperia ottoe*), Arogos skipper (*Atrytone arogos iowa*), and regal fritillary (*Speyeria idalia*). Surveys collected information on butterfly communities and habitats within the survey area. The 2014 surveys focused on sites that were inaccessible in 2013.

Surveyors conducted pedestrian transect surveys where the Project crosses suitable grassland habitat. Surveys were designed to document the occurrence of the Dakota skipper or Poweshiek skipperling and other prairie obligate butterfly occurrences and to evaluate habitat crossed by the Project that may be important to the continued presence of these species. Detailed descriptions of 2014 observations are summarized in this report.

## 2013 Survey Results Summary

In 2013, surveyors evaluated 11 ESAs on federal easements for the presence or absence of Dakota skippers and the Poweshiek skipperlings. Surveys were conducted by HDR and its subcontractor Dr. Gerald Selby between July 9 and July 12, 2013. No Dakota skippers or Poweshiek skipperlings were observed during the 2013 surveys on parcels crossed by the proposed alignment of the Project. Low butterfly numbers across the survey area were noted.

The low numbers were likely due to the limited amount of suitable habitat required by these butterfly species. Of the suitable habitat that was present in the survey area, important nectar sources and forb species were lacking most likely due to broadleaf herbicide application, other selective forb reduction or land management practices. Four other suitable habitat areas that could harbor Dakota skippers and Poweshiek skipperlings were viewed from public rights-of-way in Brown and Day counties because they were inaccessible due to landowner permission.

## 2014 Dakota Skipper and Poweshiek Skipperling Status

Due to the rule changes that now list the Poweshiek skipperling as endangered and the Dakota skipper as threatened under the Endangered Species Act, status surveys were conducted by the USFWS, several state regulating agencies and their Canadian counterparts in 2014. Surveys by these agencies and their sub-contractors evaluated federal and state owned lands with recent (2000-2008) records of Poweshiek skipperling occurrence. The results of these surveys indicate that the Poweshiek skipperling populations remain extant in Wisconsin and Michigan despite lower numbers than those noted in 2013. No Poweshiek skipperlings were observed by the USFWS, state regulators, or their sub-contractors in Iowa, North Dakota, Minnesota, and South Dakota. The results of these recent monitoring efforts indicate that there are fewer than 500 of these butterflies remaining at sites in Wisconsin, Michigan, and Manitoba and they may be extirpated from sites with recent records in Iowa, North Dakota, Minnesota, and South Dakota.

The results of surveys for the Dakota skipper by these same agencies found that the species remains extant at sites in North Dakota and South Dakota and one location in Minnesota. Sites where the Dakota skipper remains in South Dakota are predominantly on lands managed by the Sisseton Wahpeton Oyate. These tribal lands are managed as hay lands that are cut after a dominant grass (*Stipa sativa*) seed is set, usually during the fall. The parcels managed as tribal hay lands have been managed in this manner for many years. This land practice (fall haying) has distinctive characteristics that include a dominance of mid-height native grasses such as *Stipa sativa*, *Bouteloua curtipendula*, or *Schizachyrium scoparium*, with non-native co-dominants such as *Poa pratensis*, *Phleum pratense* or *Bromus inermis*. Native forbs dominate the understory of these grasslands and include healthy blooming populations of *Echinacea angustifolia*, *Amorpha canescens*, *Rudbeckia hirta*, *Pediomelum argophyllum*, *Achillea millefolium*, and *Lilium philadelphicum* on higher elevations (Photo 1) and *Heliopsis helianthoides*, *Lobelia spicata*, *Zigadenus elegans*, and *Rudbeckia hirta* in areas transitional to wetlands. Many of the areas managed as tribal hay lands are designated as Critical Habitat for the Dakota skipper under the Endangered Species Act. Dakota skipper populations at these sites maintain reproducing populations during 2012, 2013, and 2014.



Photo 1. Photograph showing vegetative structure and composition on tribal hay lands.

## Methods

The methods discussed in this section were developed by HDR and approved by the USFWS.

### Survey Timing and Location

Royer and Marrone, 1992, and Dana, 1991 indicate that the flight period for adult Dakota skippers occurs between mid-June and early July. HDR coordinated survey timing with USFWS personnel, communicated with other biologists conducting surveys for these species, and used plant phenology to predict when Dakota skippers and Poweshiek skipperlings would emerge from pupae and begin the adult flights. Royer and Marrone (1992) noted that the following plants are almost always present and blooming during the Dakota skipper flight period: wood lily, harebell (*Campanula rotundifolia*), camas (*Zigadenus elegans*), purple coneflower, and blanket flower (*Gaillardia aristata*).

HDR selected Dakota skipper and Poweshiek skipperling ESAs by identifying lands affected by the Project with GIS shapefiles and reviewing reflectance using infrared photographs for signatures consistent with native prairie vegetation then evaluating these parcels from public roads during the 2013 butterfly survey. Sites exhibiting heavy anthropogenic disturbance such as grazing, wetland drainage, haying, fire suppression, moderate herbicide exposure, siltation,

invasive species dominance, a lack of native forbs, or tree planting were eliminated from further review.

Grassland sites exhibiting minimum characteristic including the following three field conditions were flagged for further review during 2014 Dakota skipper and Poweshiek skipperling surveys:

1. Sites dominated by native graminoids or co-dominant with shrubs, throughout unshaded portions of the site, but overall plant species diversity is low because of the loss of sensitive species.
2. Sites where invasive species were moderately abundant, including *Bromus inermis*, *Poa pratensis*, *P. compressa*, *Phleum pretense*, *Medicago lupulina*, *Trifolium repens*, or *Agrostis stolonifera*, but the site was still recognizable as harboring native graminoids and forbs as dominant species.
3. On sites grazed by cattle, the ground surface may have undergone moderate compaction and have terraced slopes, but native graminoids and forbs are present as dominant species.

Sites exhibiting this minimum level of site alteration or that exhibited a plant community characteristics indicative of native prairie were walked using Transect Survey methods described in the following section.

Figures 1 through 14 provide an overview of the ESAs surveyed in 2014.

## Transect Surveys

Surveyors used a straight-line-transect method (Boyce/Brown Method, Brown and Boyce 1998) on ESAs with characteristics described in the Survey Timing and Location section of this report. Transects were oriented along the centerline of lands affected by the Project and 125 feet to each side of and parallel to the feature centerline. Transects were walked at a steady pace in areas identified for survey. Biologists focused on suitable habitat where native grasses and an abundance of nectar sources including purple coneflower occurred and on sites where other butterflies were observed; more time was allotted to higher quality habitats than on areas degraded by plowing, overgrazing or where non-native grasses, trees or shrubs dominated the landscape. Species were identified using the following three methods of verification:

- (1) Visual identification through close-focus binoculars or photography
- (2) Capture, identification, and release

Searches encompassed observation windows that are an area up to 5 meters ahead, 5 meters to each side of the observer and 5 meters above the ground within the larger survey corridor. Transect counts were continuous, even when crossing ravines or other areas of poor quality habitat.

# Results

## Transect Surveys

Surveys for Dakota skipper and Poweshiek skipperling were conducted between July 11, 2014 and July 17, 2014. Weather during surveys for the Dakota skipper was generally seasonal to cool with some surveys being conducted overcast or cool periods. Generally, the temperatures did not appear to affect butterfly activity in the afternoon, but morning activity was slow. Surveys conducted by expert lepidopterists in Minnesota, South Dakota, and North Dakota also noted the same conditions and the same butterfly responses during 2014. Dakota skippers were observed beginning July 3, 2014, until July 17, 2014, at sites in Grant County, South Dakota, by Dennis Skadson and in Roberts County, South Dakota by HDR staff. The presence of Dakota skippers at sites evaluated by others conducting surveys for the same species indicate that surveys conducted by HDR fell within suitable detection limits for the Dakota skipper in 2014.

HDR evaluated 14 parcels for habitat and conducted surveys at 4 ESAs (Figures 1-14) in 2014. No Dakota skippers or Poweshiek skipperlings were documented during the 2014 surveys. Prairie obligate butterfly observations included 33 records of regal fritillary (*Speyeria idalia*) at ESA 14-9 (Figure 10), 1 at ESA 14-10 (Figure 11), and 27 at ESA 14-11 (Figure 12). All of these ESAs exhibit an abundance of native grasses and abundant forbs that could be used by larvae and adult Dakota skippers and Poweshiek skipperling. Nectar species observed on these parcels included purple coneflower, *Pedimelum argophyllum*, wood lily, *Heliopsis helianthoides*, and blanket flower. Other blooming forbs noted during the survey period on each of the sites included wood lily and camas. HDR biologists observed native forbs in some road ditches and on adjacent pastures where Project features are proposed. Observations of tawny-edged skippers (*Polites themistocles*), long-dash (*P. mystic*), and Delaware skippers (*Anatrytone logan*) were all associated with ESA's 14-9, 14-10, and 14-11 or with roadside prairies where forbs were available as a nectar source.

### ESA 14-9 (Figure 10)

#### Grant County, South Dakota

Date July 16, 2014  
 Surveyor Scott Krych  
 Time 8:30 a.m. – 11:32 a.m. 3 hr 2 min

#### Weather

8:30 a. m.	Temp. 72°F	Wind = 2 W	%Clear = 50
11:32 a.m.	Temp. 72°F	Wind = 3 W	%Clear = 40

**Primary Target Species Observed:** None, No Dakota skippers or Poweshiek skipperlings

#### Survey Comments:

Surveys evaluated lands to the east of the proposed transmission line where slopes are pastured. This area is contiguous dissected slopes with abundant native grasses and forbs. These areas encompass parcels covering the NE and SE quarters of Section 12, but are owned by two different landowners, so they were evaluated as two subparts to the ESA during one survey period. Many of the slopes on this ESA were actively grazed in 2013, but were rested in

2014. The structure and composition of these slopes were very similar to tribal hay lands where Dakota skippers were observed in 2014 (Photo 2). Hill tops and ravine bottoms were dominated by non-native grasses or wetland species tolerant of grazing. Butterfly activity was high and most observations occurred on slopes with abundant forbs and lowland areas where isolated patches of nectar sources occur. Regal fritillaries (*Speyeria idalia*) were the dominant butterfly at the site.

<b>Species Observed</b>	<b>Numbers observed</b>	<b>Comments</b>
<i>Danause plexippus</i>	6	
<i>Polites mystic</i>	11	
<i>Colias sp.</i>	7	
<i>Vanesa sp.</i>	4	
<i>Phycoides sp.</i>	24	
<i>Anatrytone logan</i>	2	
<i>Speyeria sp.</i>	3	
<i>Speyeria idalia</i>	33	
<i>Cercyonis pegala</i>	29	
<b>Total Count:</b>	119	
<b>Total Species</b>	9	
<b>Total Hours</b>	3.03	
<b>Observations/Hour</b>	39.3	



Photo 2 -Photograph of habitat on ESA 14-9, showing abundant native forbs and grasses.

**ESA 14-10** (Figure 11)**Grant County, South Dakota**

Date July 15, 2014  
 Surveyor Scott Krych  
 Time 9:35 a.m. – 10:49 a.m. 1 hr 19 min

**Weather**

9:35 a. m. Temp. 70°F Wind = 2 W %Clear = 90  
 10:49 a.m. Temp. 70°F Wind = 3 W %Clear = 80

**Primary Target Species Observed:** None, No Dakota skippers or Poweshiek skipperlings

**Survey Comments:**

A survey of pastures on both sides of the proposed transmission line included slopes populated with abundant *Echinacea angustifolia*, *Rudbeckia hirta*, and abundant native grasses such as little bluestem, porcupine grass, and big bluestem. This area is grazed, but much of this parcel has good vegetative structure and native community composition. Butterfly activity was low and most observations occurred on the slopes with abundant nectar sources. Wood nymphs (*Cercyonis pegala*) was the dominant butterfly at the site

Species Observed	Numbers observed	Comments
<i>Danause plexippus</i>	1	
<i>Polites mystic</i>	1	
<i>Phycoides sp.</i>	1	
<i>Speyeria idalia</i>	1	
<i>Cercyonis pegala</i>	14	
<b>Total Count:</b>	18	
<b>Total Species</b>	5	
<b>Total Hours</b>	1.3	
<b>Observations/Hour</b>	13.6	

**ESA 14-11** (Figure 12)**Grant County, South Dakota**

Date July 15, 2014  
 Surveyor Scott Krych  
 Time 10:49 a.m. – 11:32 a.m. 52 min

**Weather**

10:49 a. m. Temp. 70°F Wind = 2 W %Clear = 90  
 11:32 a.m. Temp. 70°F Wind = 3 W %Clear = 80

**Primary Target Species Observed:** None, No Dakota skippers or Poweshiek skipperlings

**Survey Comments:**

A survey of hay slopes adjacent to the proposed transmission line found the slopes were very similar in structure and composition to tribal hay lands where Dakota skippers persisted in 2014 (Photo 3). This parcel is managed in the same manner as tribal hay lands with fall mowing. Grass species composition was made up of porcupine grass, little bluestem, and small amounts of Kentucky bluestem, or smooth brome. Forb composition was also similar to tribal hay lands

and harbored an abundance of *Echinacea angustifolia*. Regal fritillaries were abundant during the relatively short survey of these parcels and several non-target skippers (*Polites themistocles*, *P. mystic* and *Anatrytone logan*) were observed during the review. Butterfly activity was high and most observations occurred on slopes with abundant forbs and lowland areas where isolated patches of nectar sources occur. Regal fritillaries (*Speyeria idalia*) were the dominant butterfly at the site.

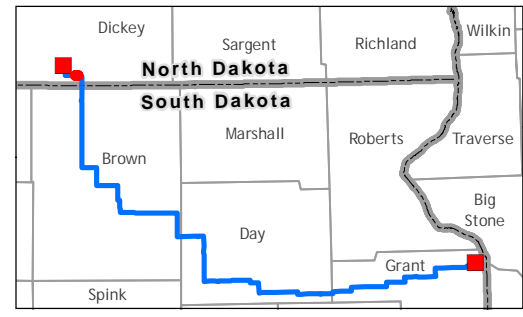
Species Observed	Numbers observed	Comments
<i>Satyroides eurydice</i>	2	
<i>Polites mystic</i>	8	
<i>Phycoides sp.</i>	14	
<i>Polites themistocles</i>	1	
<i>Anatrytone logan</i>	1	
<i>Speyeria idalia</i>	27	
<i>Cercyonis pegala</i>	12	
<b>Total Count:</b>	65	
<b>Total Species</b>	7	
<b>Total Hours</b>	0.9	
<b>Observations/Hour</b>	75.6	



Photo 3 -Photograph of ESA 14-11 showing abundant native forbs and similar structure to tribal hay lands in Day and Grant counties, South Dakota.

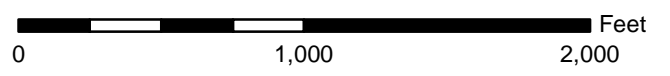
## Literature Cited

- Brown, J. A., & Boyce, M. S. (1998). Line transect sampling of Karner blue butterflies (*Lycaeides melissa samuelis*). *Environmental and Ecological Statistics*, 81-91.
- Dana, R.P. 1991. Conservation Management of the Prairie Skippers *Hesperia dacotae* and *Hesperia ottoe*: basic biology and threat of mortality during prescribed burning in spring. Minnesota Agricultural Experiment Station Bulletin 594-1991 (AD-SB-5511-S). University of Minnesota, St. Paul. 63pp.
- Marone, Gary M. 2002. Field Guide to Butterflies of South Dakota. South Dakota Department of Game, Fish and Parks. pp 396-398.
- Royer, R. A., Marrone, G.M. 1992. Conservation Status of the Dakota Skipper (*Hesperia dacotae*) in North and South Dakota. A Report to the United States Department of the Interior Fish and Wildlife Service. Denver, Colorado. 44pp.



**Environmentally Sensitive Area Survey (potentially suitable habitat)**

- 2014 Windshield Survey
- 2014 Pedestrian Survey
- Project Centerline

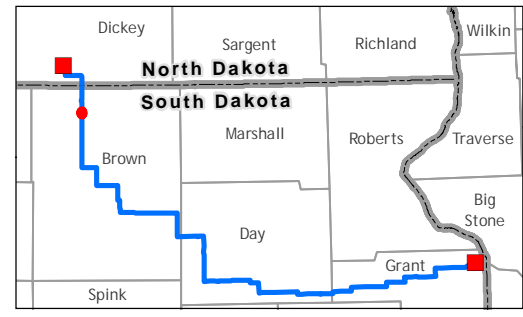


**BSS+E** Scale 1:8,059  
Big Stone South to Ellendale

**Figure 1**  
2014 Skipper Survey  
Big Stone South to Ellendale  
345 kV Transmission Line Project

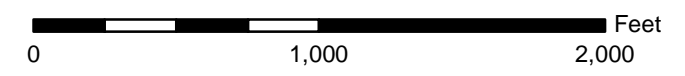


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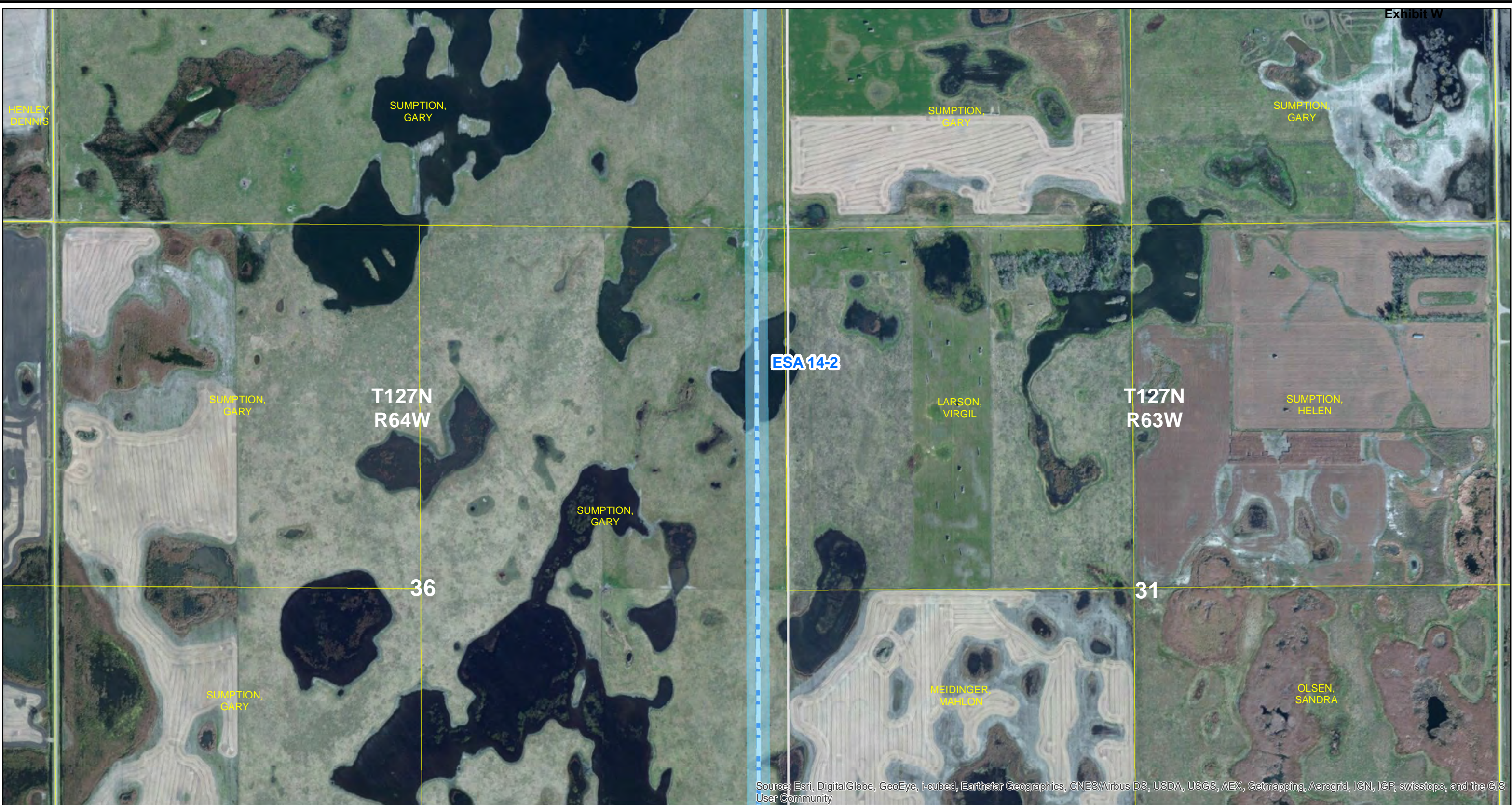
**Environmentally Sensitive Area Survey (potentially suitable habitat)**

- 2014 Windshield Survey
- 2014 Pedestrian Survey
- Project Centerline

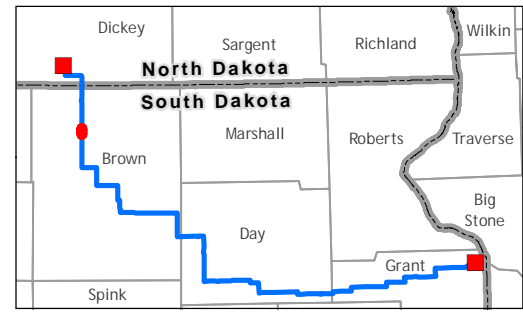


**BSS+E** Scale 1:8,059  
Big Stone South to Ellendale

**Figure 2**  
2014 Skipper Survey  
Big Stone South to Ellendale  
345 kV Transmission Line Project

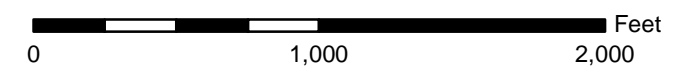


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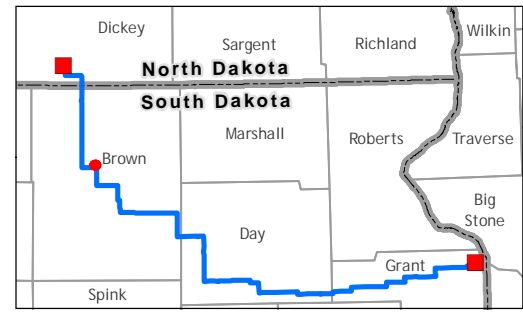
**Environmentally Sensitive Area Survey (potentially suitable habitat)**

- 2014 Windshield Survey
- 2014 Pedestrian Survey
- Project Centerline



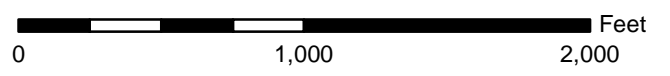
**BSS+E**  
Big Stone South to Ellendale  
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**Figure 3**  
2014 Skipper Survey  
Big Stone South to Ellendale  
345 kV Transmission Line Project



**Environmentally Sensitive Area Survey (potentially suitable habitat)**

- 2014 Windshield Survey
- 2014 Pedestrian Survey
- Project Centerline

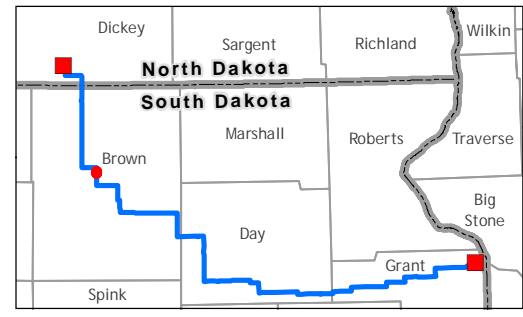


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Big Stone South to Ellendale  
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**Figure 4**  
2014 Skipper Survey  
Big Stone South to Ellendale  
345 kV Transmission Line Project

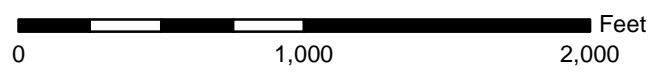


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**Environmentally Sensitive Area Survey (potentially suitable habitat)**

- 2014 Windshield Survey
- 2014 Pedestrian Survey
- Project Centerline

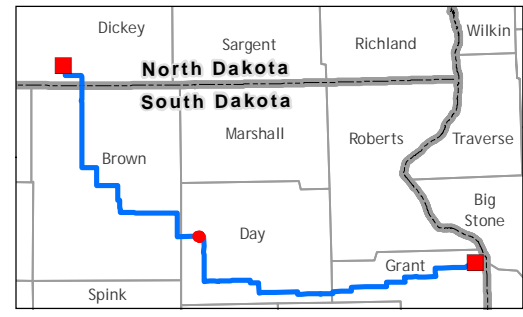


**BSS+E**  
Big Stone South to Ellendale  
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**Figure 5**  
2014 Skipper Survey  
Big Stone South to Ellendale  
345 kV Transmission Line Project

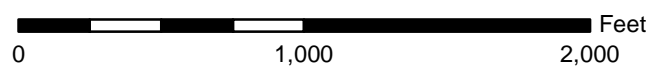


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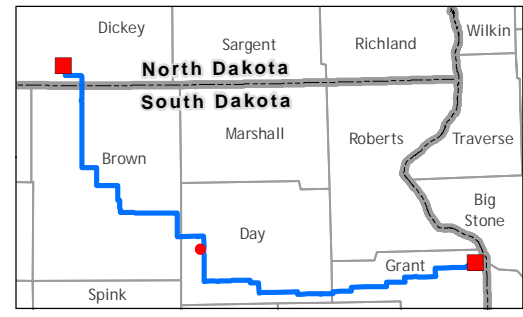
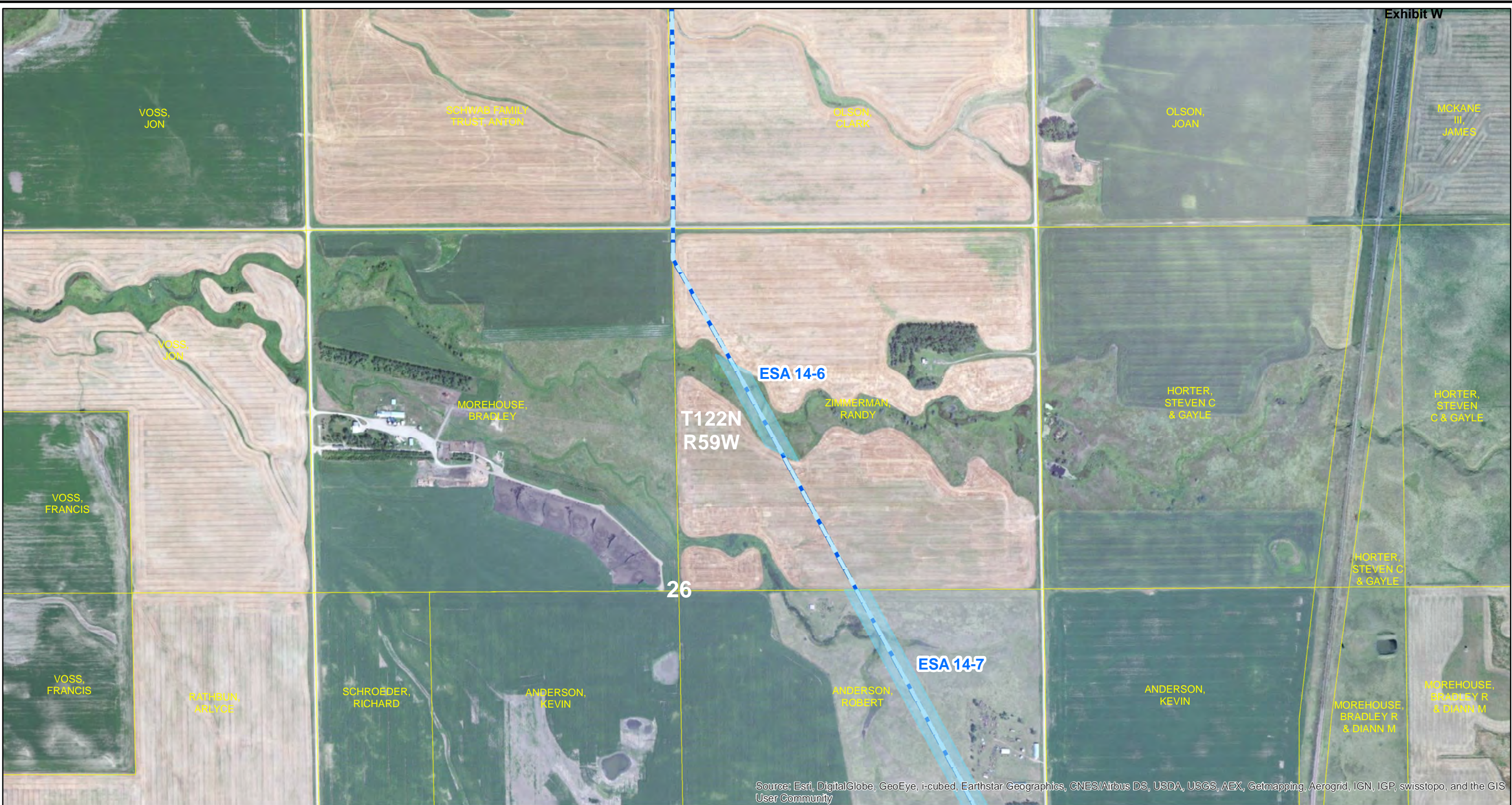
**Environmentally Sensitive Area Survey (potentially suitable habitat)**

- 2014 Windshield Survey
- 2014 Pedestrian Survey
- Project Centerline



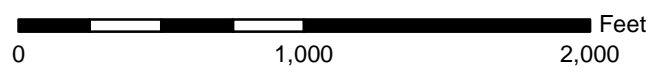
**BSS+E**  
Big Stone South to Ellendale  
Scale 1:8,059

**Figure 6**  
2014 Skipper Survey  
Big Stone South to Ellendale  
345 kV Transmission Line Project



**Environmentally Sensitive Area Survey (potentially suitable habitat)**

- 2014 Windshield Survey
- 2014 Pedestrian Survey
- Project Centerline

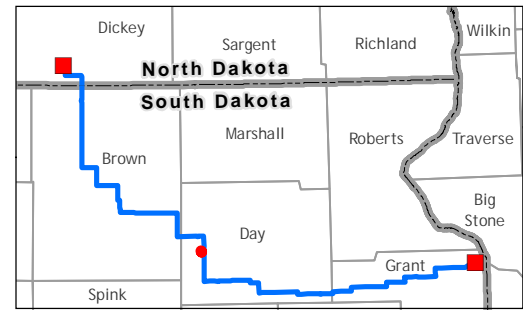


**BSS+E** Scale 1:8,059  
Big Stone South to Ellendale

Figure 7  
2014 Skipper Survey  
Big Stone South to Ellendale  
345 kV Transmission Line Project

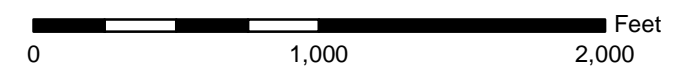


Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



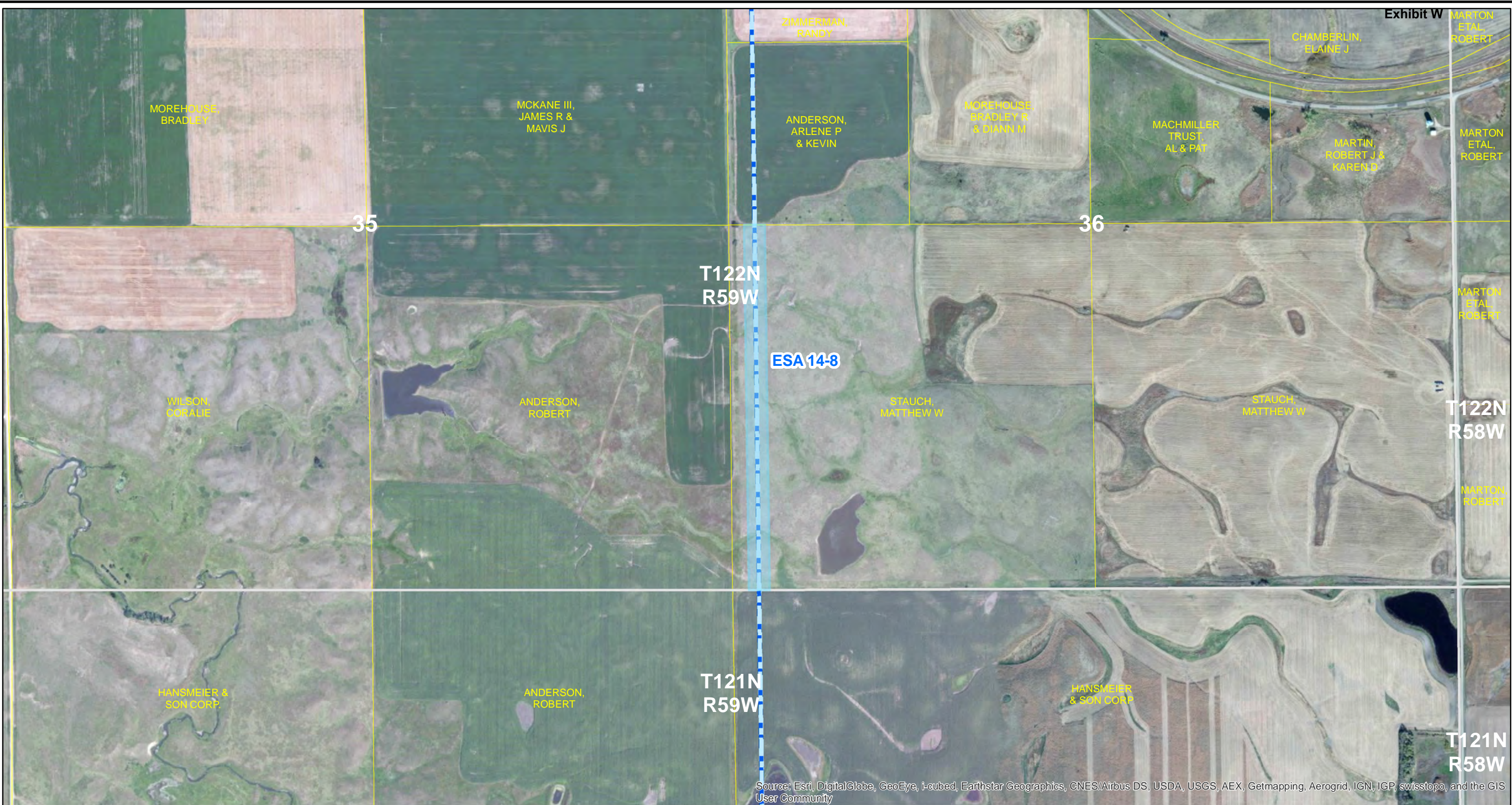
**Environmentally Sensitive Area Survey (potentially suitable habitat)**

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- 2014 Pedestrian Survey
- Project Centerline

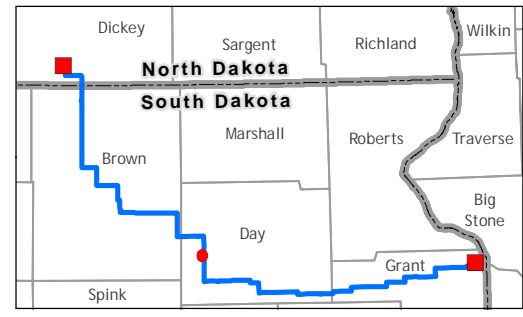


**BSS+E**  
Big Stone South to Ellendale  
Scale 1:8,059

**Figure 8**  
2014 Skipper Survey  
Big Stone South to Ellendale  
345 kV Transmission Line Project

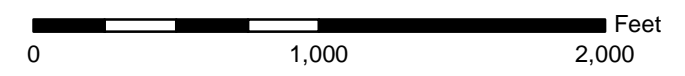


Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



**Environmentally Sensitive Area Survey (potentially suitable habitat)**

- 2014 Windshield Survey
- 2014 Pedestrian Survey
- Project Centerline

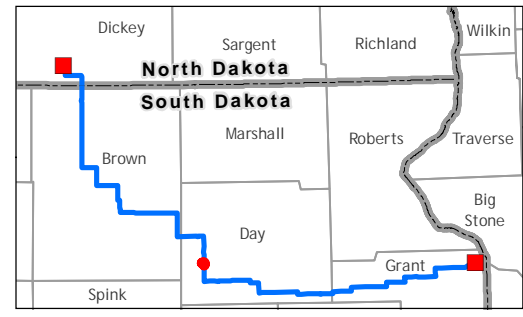


**BSS+E** Scale 1:8,059  
Big Stone South to Ellendale

Figure 9  
2014 Skipper Survey  
Big Stone South to Ellendale  
345 kV Transmission Line Project



Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



**Environmentally Sensitive Area Survey (potentially suitable habitat)**

- 2014 Windshield Survey
- 2014 Pedestrian Survey
- Project Centerline

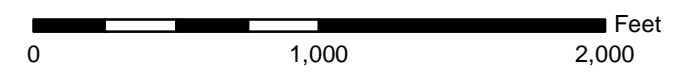


Figure 10  
2014 Skipper Survey  
Big Stone South to Ellendale  
345 kV Transmission Line Project

**BSS+E**  
Big Stone South to Ellendale  
Scale 1:8,059

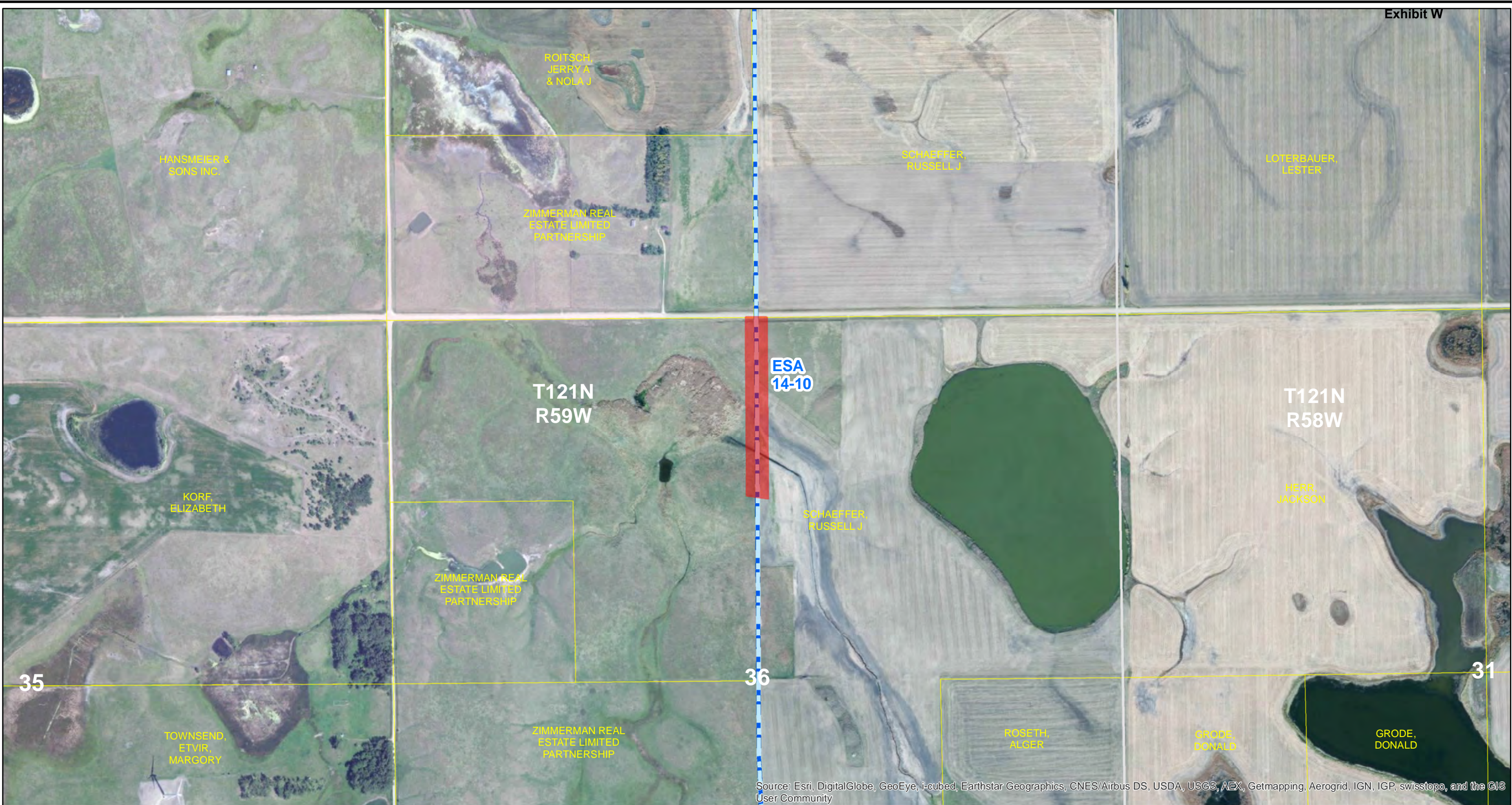
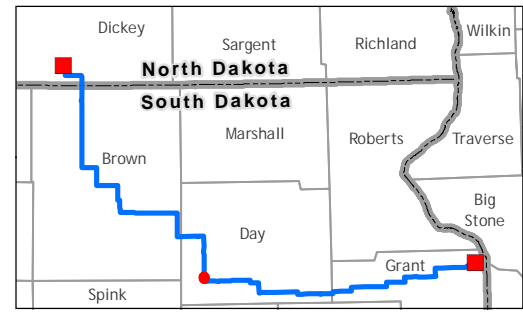


Exhibit W

Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



**Environmentally Sensitive Area Survey (potentially suitable habitat)**

- 2014 Windshield Survey
- 2014 Pedestrian Survey
- Project Centerline

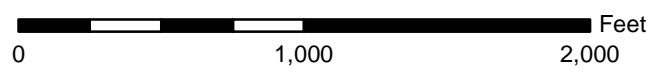
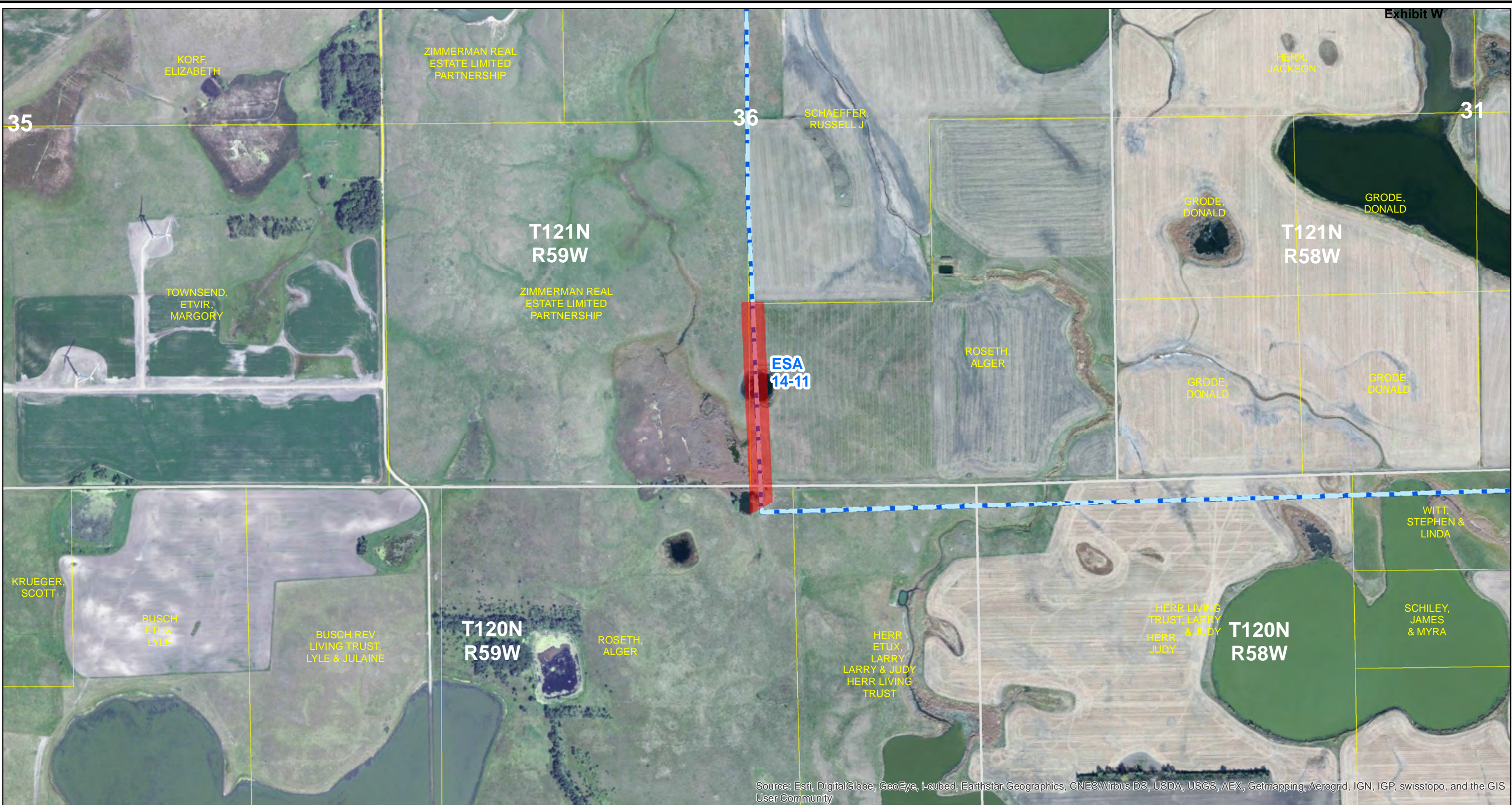
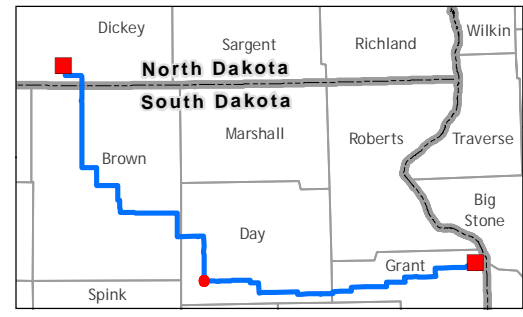


Figure 11  
 2014 Skipper Survey  
 Big Stone South to Ellendale  
 345 kV Transmission Line Project

**BSS+E**  
 Big Stone South to Ellendale  
 Scale 1:8,059

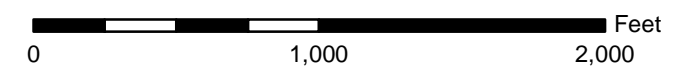


Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



**Environmentally Sensitive Area Survey (potentially suitable habitat)**

- 2014 Windshield Survey
- 2014 Pedestrian Survey
- Project Centerline

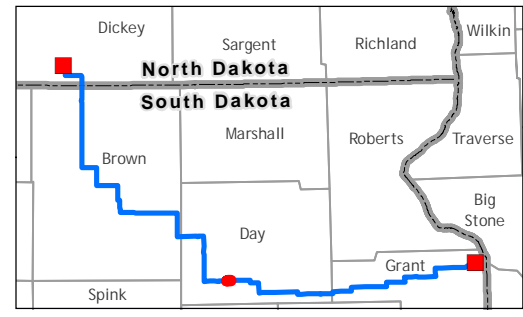


**BSS+E**  
Big Stone South to Ellendale  
Scale 1:8,059

**Figure 12**  
2014 Skipper Survey  
Big Stone South to Ellendale  
345 kV Transmission Line Project

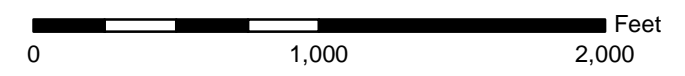


Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



**Environmentally Sensitive Area Survey (potentially suitable habitat)**

- 2014 Windshield Survey
- 2014 Pedestrian Survey
- Project Centerline

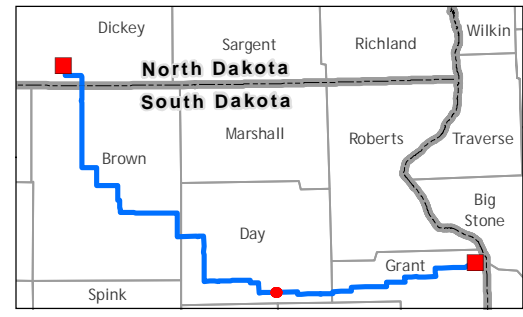


**BSS+E**  
Big Stone South to Ellendale  
Scale 1:8,059

**Figure 13**  
2014 Skipper Survey  
Big Stone South to Ellendale  
345 kV Transmission Line Project

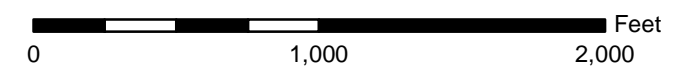


Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



**Environmentally Sensitive Area Survey (potentially suitable habitat)**

- 2014 Windshield Survey
- 2014 Pedestrian Survey
- Project Centerline



**BSS+E** Scale 1:8,059  
Big Stone South to Ellendale

Figure 14  
2014 Skipper Survey  
Big Stone South to Ellendale  
345 kV Transmission Line Project