

June 25, 2018

Daniel P. Wolf, Executive Secretary  
Minnesota Public Utilities Commission  
127 7th Place East, Suite 350  
St. Paul, MN 55101-2147

**Re: Application for Site Permit Repowering**  
Lake Benton Wind II Repowering Project  
Docket No. IP-6903/WS-18-179

Dear Mr. Wolf:

Attached are the comments of the Minnesota Department of Commerce Energy Environmental Review and Analysis (EERA) staff on application for site permit repowering completeness and the review process in the following matter:

**The Repowering Application of Lake Benton Power Partners II, LLC for a Large Wind Energy Conversation System Site Permit Amendment for the up to 100.2 MW Lake Benton II Wind Farm in Pipestone County, Minnesota.**

Lake Benton Power Partners II, LLC has submitted a Site Permit Amendment Application pursuant to Minnesota Rule 7854.1300 to repower its existing Lake Benton II Wind Farm as an up to 100.2 MW LWECS.

This filing was made on May 3, 2018, by:

Danell Herzig Project Manager, Development NextEra Energy Resources, LLC 700 Universe Blvd Juno Beach, FL 33408 <a href="mailto:Danell.Herzig@nexteraenergy.com">Danell.Herzig@nexteraenergy.com</a> Tel: 561-304-6548	Brian J. Murphy Senior Attorney NextEra Energy Resources, LLC 700 Universe Blvd Juno Beach, FL 33408 <a href="mailto:Brian.Murphy@nee.com">Brian.Murphy@nee.com</a> Tel: 561-694-3818
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EERA concludes the Site Permit Amendment Application contains all of the information necessary for Commission review, and recommends the Commission review the Application using the process described herein. EERA staff is available to answer any questions the Commission may have.

Sincerely,

*/s/ Larry B. Hartman*

Environmental Review Manager  
Energy Environmental Review and Analysis  
(651) 539-18398 | [larry.hartman@state.mn.us](mailto:larry.hartman@state.mn.us)

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COMMENTS AND RECOMMENDATIONS OF THE  
MINNESOTA DEPARTMENT OF COMMERCE  
ENERGY ENVIRONMENTAL REVIEW AND ANALYSIS

DOCKET NO. IP-6903/WS-18-179

Date..... June 25, 2018

EERA Staff..... Larry B. Hartman (651) 539-1839  
Andrew Levi (651) 539-1840

**In the Matter of the Application of Lake Benton Power Partners II, LLC for an LWECS Site Permit Amendment to Repower the 100.2 MW Lake Benton Wind II Wind Farm and Associated Facilities in Pipestone County**

**Issues Addressed:** *These comments and recommendations address:*

1. *Whether the site permit amendment application is complete; and*
2. *How the amendment review process might best proceed.*

**Additional documents and information can be found at**

<https://mn.gov/eera/web/project/13331> or on eDockets at  
<http://www.edockets.state.mn.us/EFiling/search.jsp> (Year 18, Number 179).

This document can be made available in alternative formats; e.g., large print or audio tape by calling (651) 539-1530.

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**Introduction and Background**

Lake Benton Power Partners II, LLC (Lake Benton II or Applicant), is an indirect, wholly-owned subsidiary of NextEra Energy Resources, LLC (NEER), and currently operates the Lake Benton II 100.2-megawatt (MW) Large Wind Energy Conversion System (LWECS) and associated facilities located in Pipestone County, Minnesota.<sup>1</sup>

**Repowering of Existing LWECS Project**

The Lake Benton Wind II LWECS will be a repowering of the existing Lake Benton II wind facility comprised of 137 wind turbines, overhead and underground electrical collection lines, access roads, four Points of Interconnect (POI) collector substations, ancillary equipment, and an

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<sup>1</sup> See eDockets, document ID [20185-142739-02](#), p. 1.

operations and maintenance facility. The existing 137 Zond (Z-750 model) wind turbine towers have a hub height of 174 feet. A majority of the existing turbines have a 157.5 foot rotor diameter for a rotor swept area of 6,440 feet (1,963 meters), while several have a rotor swept area of 5,935 feet (1,809) meters).<sup>2</sup>

The existing wind facility permitted on May 21, 1998 (Permit No. NSP & LBPP-LWECS-1-1998) will be decommissioned just prior to the start of construction on the proposed repowering Project. The Applicant will make a separate filing on the decommissioning activities closer to the actual decommissioning of the existing turbines in 2019. Attachment 1 describes decommissioning activities associated with the existing facilities that will be decommissioned.<sup>3</sup>

On May 3, 2018, Lake Benton II filed an Application to amend the Site Permit.<sup>4</sup> The Applicant intends to repower (tear down and remove the existing LWECS and associated facilities) and rebuild entirely new facilities on the existing site. Lake Benton II has a power purchase agreement (PPA) with Xcel Energy for the facilities' current production. The new project will be built and sold to Xcel Energy.

### **Certificate of Need**

On September 1, 2017, in Docket No. E002/M-16-777, the Commission issued an Order approving the Petition of Xcel Energy for Approval of the Acquisition of Wind Generation from the Company's 2016-2030 Integrated Resource Plan, which included the build and transfer of the repowered Project to NSP. This Order also exempted this project and three others from the certificate of need process under Minn. Stat. 216B.2422, subd. 5, because they were selected in a bidding process approved by the Commission.<sup>5</sup>

### **Project Location and Size of Project Area in Acres**

The proposed Project will be located at the site of the existing Lake Benton II facility immediately southwest of the City of Ruthton and north of the City of Holland in Pipestone County (See Map 1 and Table 1). The proposed Project boundaries are the same as those authorized in the 1998 Site Permit. The Project is located in an area that has seen extensive development of LWECS over the last 20-plus years since Lake Benton II commenced operations.<sup>6</sup>

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<sup>2</sup> *Ibid.* at p. 1-2.

<sup>3</sup> *Ibid.* at p. 2 and 6.

<sup>4</sup> "Site Permit Amendment Application," Lake Benton II, May 3, 2018, See eDockets (18-179) Document ID [20185-142739-01](#), [20185-142739-02](#), [20185-142739-03](#), [20185-142739-04](#), [20185-142739-05](#), [20185-142739-06](#), [20185-142739-07](#), [20185-142739-08](#), [20185-142739-09](#), [20185-142739-10](#), [20185-142740-01](#), [20185-142740-02](#), [20185-142740-03](#), [20185-142740-04](#), [20185-142740-05](#), [20185-142740-06](#), [20185-142740-07](#), [20185-142740-08](#), [20185-142740-09](#), [20185-142740-10](#) or <https://mn.gov/eera/web/project/13331>.

<sup>5</sup> See eDockets, Document ID [20185-142739-02](#), at p.4

<sup>6</sup> *Ibid.* at p. 6.

**Table 1: Project Location**

County Name	Township Name	Township	Range	Sections
Pipestone	Fountain Prairie	108	45	1,2,11-14, 24
Pipestone	Aetna	108	44	5-9, 16-22, 26-36
Pipestone	Rock	107	44	1-4, 10-15

Lake Benton II proposes to site the Project equipment and associated facilities within the Project Area as shown on Maps 2 and 2a. These maps show the proposed locations of wind turbines, underground collection lines, crane walk paths, access roads, MNET Towers, the O&M facility, and other associated facilities. Map 3 illustrates the preliminary site layout. The Project layout adheres to the wind energy conversion facility siting criteria outlined in the Commission's *Order Establishing General Wind Permit Standards*, Docket No. G999/M-07-1102 (MPUC 2008).

The estimated size of the Project Area is 25,597 acres (approximately 40.0 square miles) primarily on agricultural land. The proposed size of the Project Area allows some siting flexibility in the event turbine locations currently proposed prove to be unsuitable and provides sufficient room for the required setbacks and buffering of sensitive features. The turbines, collector substations, electrical collector lines, meteorological towers, and O&M facility will be within the Project Area. Also, there are turbines associated with several other wind energy projects located in close proximity to the Project Area.<sup>7</sup>

### **Project Description**

The proposed Project's total capacity of 100.2 megawatts (MW) will be generated using 39 General Electric (GE) 2.3 MW wind turbines and 5 GE 2.1 MW wind turbines. See Table 2 GE Wind Turbine Characteristics. The proposed turbine layout includes 44 primary turbines with four alternative turbine locations identified. Alternative turbine locations are proposed for construction in the event development or constructability issues are encountered. The proposed turbine array is illustrated on Map 2 (Four POI Project Area and Facilities) and Map 2A (Three POI Project Area and Facilities).<sup>8</sup>

The proposed retrofit will not increase individual turbine generator capacity or nameplate capacity, and energy production is expected to be similar to the original designs, but with better efficiency than current operations. Therefore, the Facility's current Interconnection Agreement (IA) with Midcontinent Independent System Operator, Inc. (MISO) and Xcel Energy (Excel) will not require an amendment.

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<sup>7</sup> *Ibid.* at p. 6.

<sup>8</sup> *Ibid.*, at p. 6-7

## Meteorological Towers

The Project will include installation of up to two permanent MET towers. The MET towers will be at least 250 feet for the edge of road right-of-way. The MET towers will be permanent and remain on site for the duration of the Project’s operation. Permanent MET towers will be free standing, made of galvanized steel with medium intensity dual LED day and night lights as required by the FAA, and will have the capability to have acoustic recording equipment installed on them.<sup>9</sup>

## O&M Facility

An O&M facility will be constructed within the Project Area to serve as a center for the Project’s O&M efforts, provide Project access and storage, and house the SCADA system. The O&M facility will be used by the operations staff for facility maintenance and operation. It provides office space for the workers, as well as a shop/storage area for spare parts and vehicles. It will also house the central monitoring equipment for the generating facility where the turbines are monitored and controlled. The facility foot print will be up to 5 acres and will include a parking lot and O&M building. The O&M building will be approximately 7,500 square feet and will house Project equipment. A building permit will be obtained from Pipestone County for the O&M facility.<sup>10</sup>

**Table 1: GE Wind Turbine Characteristics\***

<b>Design Features</b>	<b>GE 2.3 Wind Turbine</b>	<b>GE 2.1 Wind Turbine</b>
Nameplate Capacity	2.3 MW	2.1 MW
Hub Height	90 (m) (295 ft.)	80 (m) (263 ft.)
Rotor Swept Area	10,660 (sq. m) (114,743 sq. ft.)	10,660 (sq. m) (114,743 sq. ft.)
Total Height	148.3 (m) (486.6 ft.)	138.3 (m) (453.7 ft.)
Rotor Diameter	116.5 (m) (382.2 ft.)	116.5 (m) (382.2 ft.)
Cut in Wind Speed	3 m/s 10 ft./s	3 m/s 10 ft./s
IEC Wind Class	IIS	IIS
Cut Out Wind Speed	32 m/s (105 ft./s)	25 m/s (82 ft./s)
Rotor Speed	8-15.7 RPM	8-15.7 RPM
Tip Speed	191 MPH (307 km/hr)	191 MPH (307 km/hr)
Sound at Turbine	107.5 dBA	107.5 dBA
Power Regulation	Blade pitch controls power.	Blade pitch controls power.

<sup>9</sup> Ibid. at p. 7-8.

<sup>10</sup> Ibid. at p. 17.

	Controls included for ZVRT and enhanced reactive power (0.9 power factor)	Controls included for ZVRT and enhanced reactive power (0.9 power factor)
Generation	2.3 MW per turbine	2.1 MW per turbine
Tower	Multi-coated, conical tubular steel with safety ladder to the nacelle. Rest platforms each section.	Multi-coated, conical tubular steel with safety ladder to the nacelle. Rest platforms each section.
Supervisory Control and Data Acquisition	Each turbine equipped with SCADA controller hardware, software and database storage capability	Each turbine equipped with SCADA controller hardware, software and database storage capability
FAA Lighting	Yes, per FAA permitting	Yes, per FAA permitting
Foundation	Per Manufacturer specifications- Spread Foot or pier foundation- TBD	Per Manufacturer specifications- Spread Foot or pier foundation- TBD

\*Source: GE manufacturer specifications (GE Renewable Energy 2017)

### Wind Rights Secured

As of the filing date Lake Benton II has land control agreements with landowners for approximately 9,600 acres and approximately 38 percent of the land within the Project boundary and will continue to engage with landowners to acquire land control for the project (See Map 4).<sup>11</sup>

### Regulatory Process and Procedures

A site permit from the Commission is required to construct a LWECS, which is any combination of wind turbines and associated facilities with the capacity to generate five megawatts or more of electricity. This requirement became law in 1995. The Minnesota Wind Siting Act is found at Minnesota Statutes Chapter 216F. The rules to implement permitting requirements for LWECS are in Minnesota Rule 7854. The Statute and Rule are designed to guarantee LWECS are sited “in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources.”<sup>12</sup>

Over the past year, the Commission and the Minnesota Department of Commerce Energy Environmental Review and Analysis (EERA) staff have been meeting together, and with

<sup>11</sup> Ibid. p. 19.

<sup>12</sup> Minnesota Statute [216F.03](#); Minnesota Rule [7854.0200](#)

interested utilities, to discuss repowering existing windfarms. Repowering is a means to fulfill all three tenets of the law’s purpose by rebuilding on a previously impacted site, preserving the existing compatible land uses of agriculture and energy production, and utilizing and improving upon facilities that have already been determined by the Commission as making efficient use of resources.

Repowering may take the form of a “partial repowering,” as did Lake Benton Power Partners, LLC (ALLETE Clean Energy) [Docket No. WS-13-294] and Trimont Wind 1, [Docket No. WS-13-258], where existing turbines are retrofitted to improve efficiency and extend their life cycle, or “full repowering,” where turbines are decommissioned, as is the case for this Project, and replaced with fewer, but larger turbines within the site boundary. The process of review in either case would be for the Permittee to file an Application for a Permit Amendment to approve the repowering.

The Commission has authority to amend a Site Permit at any time if it has good cause.<sup>13</sup> The process for an amendment generally includes a comment period and a hearing before the Commission. Commission and EERA staffs agree that the additional step of a public meeting in the Project area should also be required in the case of repowering. As discussed by staffs, and presented at a Commission Planning Meeting in 2017, the following Process has been outlined to review either full or partial repowering:

Review Process for Repowering	
Day	Process Step
-	Amendment Application Filed
10	EERA Recommendations on Application Completeness and Process
15	Commission Notice for Public Information Meeting and Comment Period
40	Public Information Meeting
50	Public and Agencies Comments Due
64	EERA Recommendations on the Permit Amendment
85-100	Commission Agenda Meeting for Decision

### EERA Staff Analysis and Comments

Commission and EERA staffs have agreed that an Amendment Application for repowering should provide the same information that would be required for current Site Permit applications.<sup>14</sup> This guarantees the Applicant will have updated any environmental information

<sup>13</sup> Minnesota Rule [7854.1300 Subp. 2](#)

<sup>14</sup> Minnesota Rule [7854.0500](#)



from its original application and conducted all required surveys and modeling expected by applicants for new sites.

### **Application Completeness**

Lake Benton II developed its Amendment Application with the assistance of the EERA guidance document<sup>15</sup> for LWECS permits. This guidance for site permitting provides applicants and preparers of LWECS applications with information on how to prepare a complete site permit application, including information on the permitting process, pre-application consultation, current policies, guidelines and expectations as to necessary study standards and how to submit an application.

Lake Benton II submitted a draft Application for EERA review and to discuss the need for any additional information. The Applicant edited and supplemented the Application following EERA's reviews before making their official filing on May 3, 2018. EERA finds the efiled Application addresses the comments and recommendations provided to the Applicant and filed a complete application.

### **Recommendation**

EERA concludes that filing requirements discussed among Commission and EERA staff have been met. EERA recommends that the Application be reviewed as per the "Review Process for Repowering" mentioned above, beginning with noticing and holding a public information meeting as soon as arrangements can be made.

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<sup>15</sup> Application Guidance for Site Permitting of Large Wind Energy Conversion Systems in Minnesota, Department of Commerce EERA, August 5, 2010.

## Attachment 1

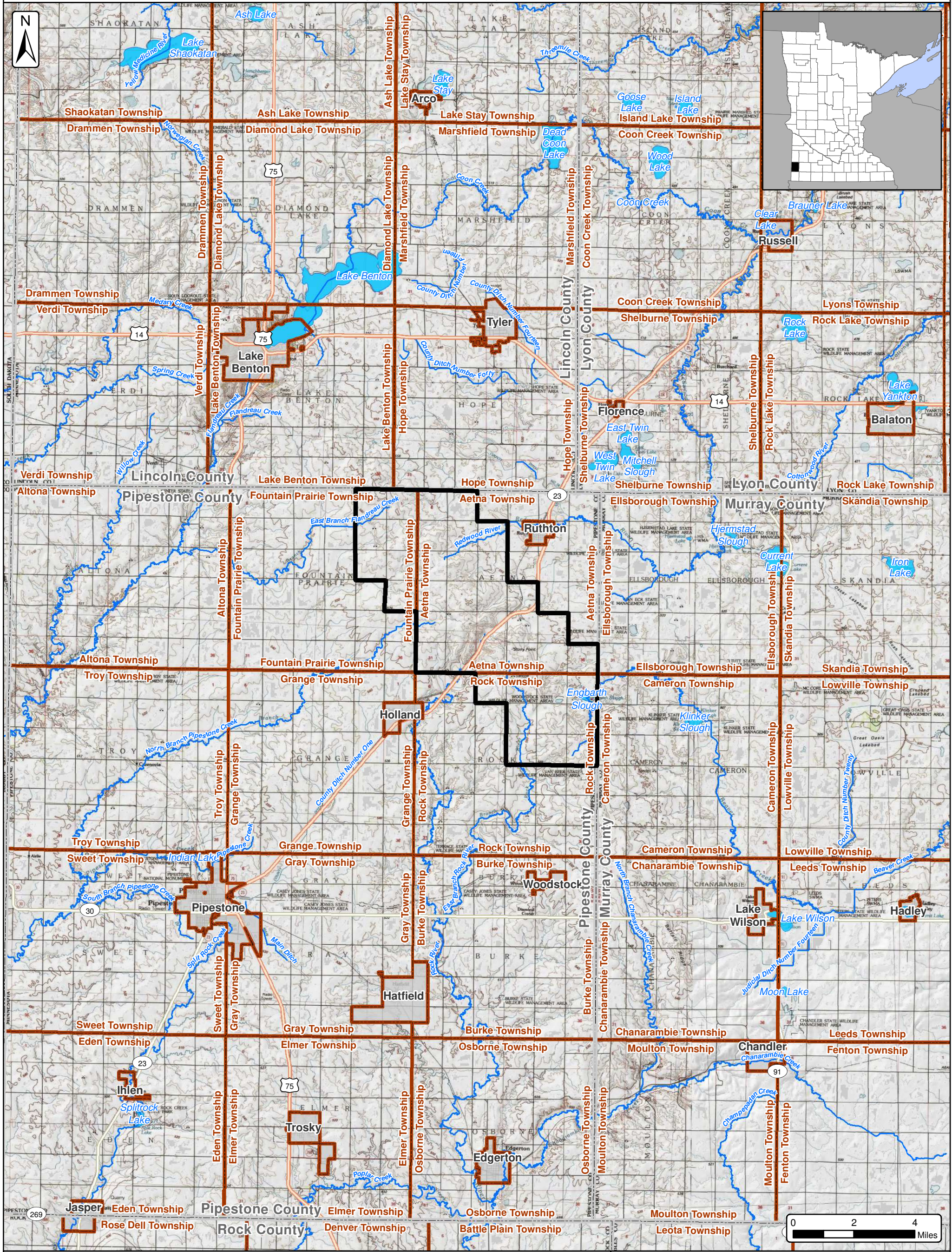
Decommissioning of the existing facilities will include the following activities:

- Lake Benton Power Partners II, LLC will identify components of the existing facility that will not be removed and will be used for development of the Project. It is anticipated that the use of several existing access roads and four POI substations will continue. It is generally anticipated that other components of the existing facility will not continue to be used and will be removed to a depth of four feet.
- For access roads that are not to be used for the proposed Project, Lake Benton Power Partners II, LLC will work with landowners regarding whether the landowner prefers to keep the access road in place. In the event landowners do not want the access road, or portions thereof, the access roads will be removed.
- Decommissioning will include the dismantling and removal of the existing wind towers, wind turbine generators, transformers, overhead cables, foundations, buildings, and ancillary equipment to a depth of four feet. Turbine tower sections will be dismantled utilizing cranes.
- Underground cables will be removed generally to a depth of four feet; however, in some cases, and in coordination with appropriate entities such as NSP, Minnesota Department of Natural Resources (MNDNR), Minnesota Board of Water and Soil Resources, the landowner, the Commission, and others, underground cables may remain in place to avoid surficial disturbance of sensitive features, such as prairies, habitat, or wetlands.
- After dismantling and excavating the facility, high value components will be removed for scrap value. The remaining materials will be reduced to transportable size and removed from the site for disposal. Materials will be disposed where disposal is permitted and where there is capacity for the disposal.
- Vacated areas, resulting from facility removal, will be filled with clean, compatible subgrade material that will be compacted to a density similar to surrounding areas. These areas will then be covered with topsoil.
- Unexcavated areas compacted by equipment used in the decommissioning may be tilled in a manner adequate to restore the topsoil and subgrade material to a density consistent with the surrounding areas.
- Following the removal of the existing facility, the areas disturbed by the decommissioning activities will be restored. Lake Benton Power Partners II, LLC will restore and reclaim the areas disturbed by the decommissioning.

# Lake Benton Wind II

## Map 1- Project Location Map

Pipestone County, Minnesota



- Main Watercourses (NHD)
- Main Waterbodies (NHD)
- Project Area  
07/12/2017 (±25,597 Ac.)
- Cities
- Townships
- Counties

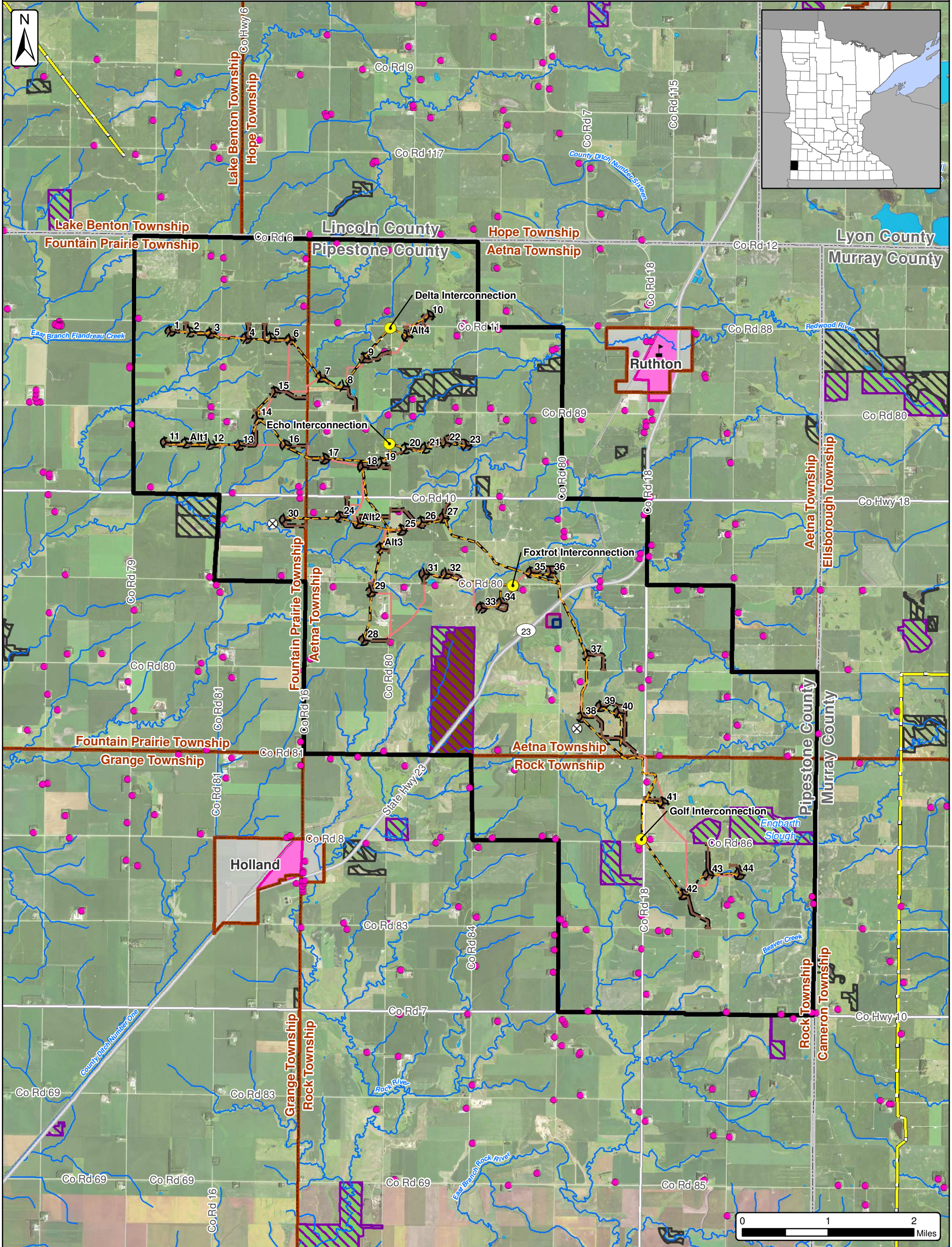


SOURCE: USGS TOPOGRAPHIC QUADRANGLES 1:24,000

# Lake Benton Wind II

## Map 2- Three POI Project Area and Facilities Map

Pipestone County, Minnesota



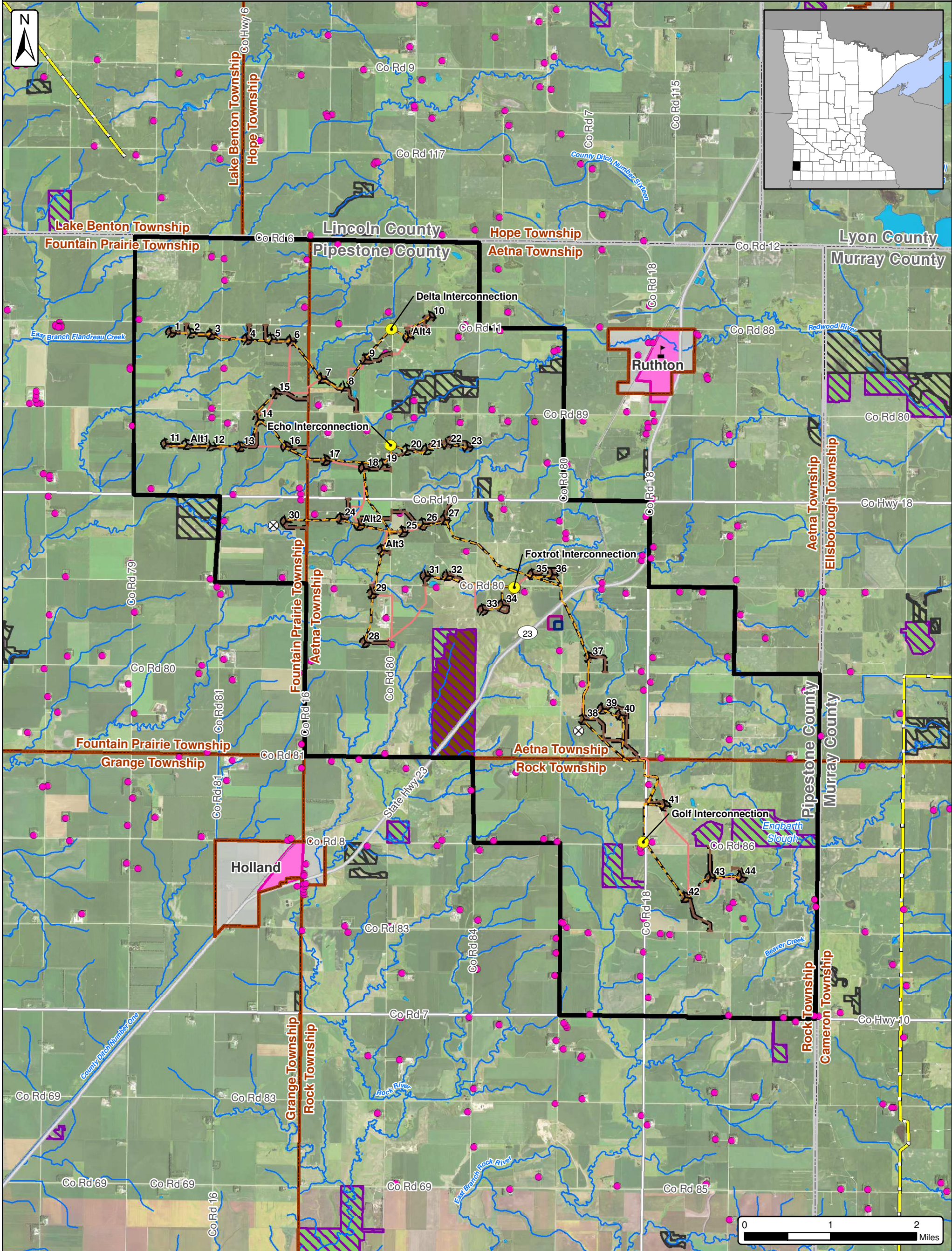
SOURCE: USDA NAIP 2017 IMAGERY



# Lake Benton Wind II

## Map 2- Four POI Project Area and Facilities Map

Pipestone County, Minnesota



Sensitive Receptors	Sensitive Receptors (Dense Areas)	Turbine Layout (02/09/2018)	O&M Area (04/18/2018)
Schools (USGS)	Protected Areas (USGS)	MET Towers	Laydown Yard (04/18/2018)
Transmission Lines (Velocity Suite)	State Funded Conservation Easements (RIM Reserve- BWSR)	Points of Interconnection (POI)	Project Area 07/12/2017 (±25,597 Ac.)
Watercourses (NHD)	Wildlife Management Areas (MNDNR)	4 POI Collection Lines (02/09/2018)	Cities
Waterbodies (NHD)	Scientific and Natural Areas (MNDNR)	Preliminary Crane Paths	Townships
		Access Roads (04/18/2018)	Counties
		Construction Easements (04/18/2018)	

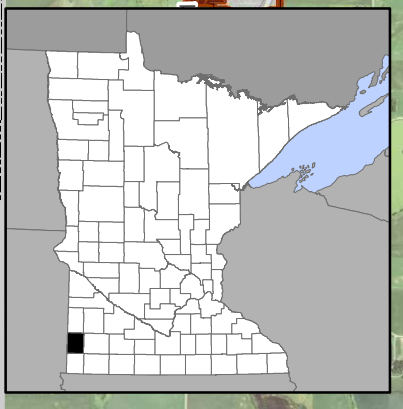
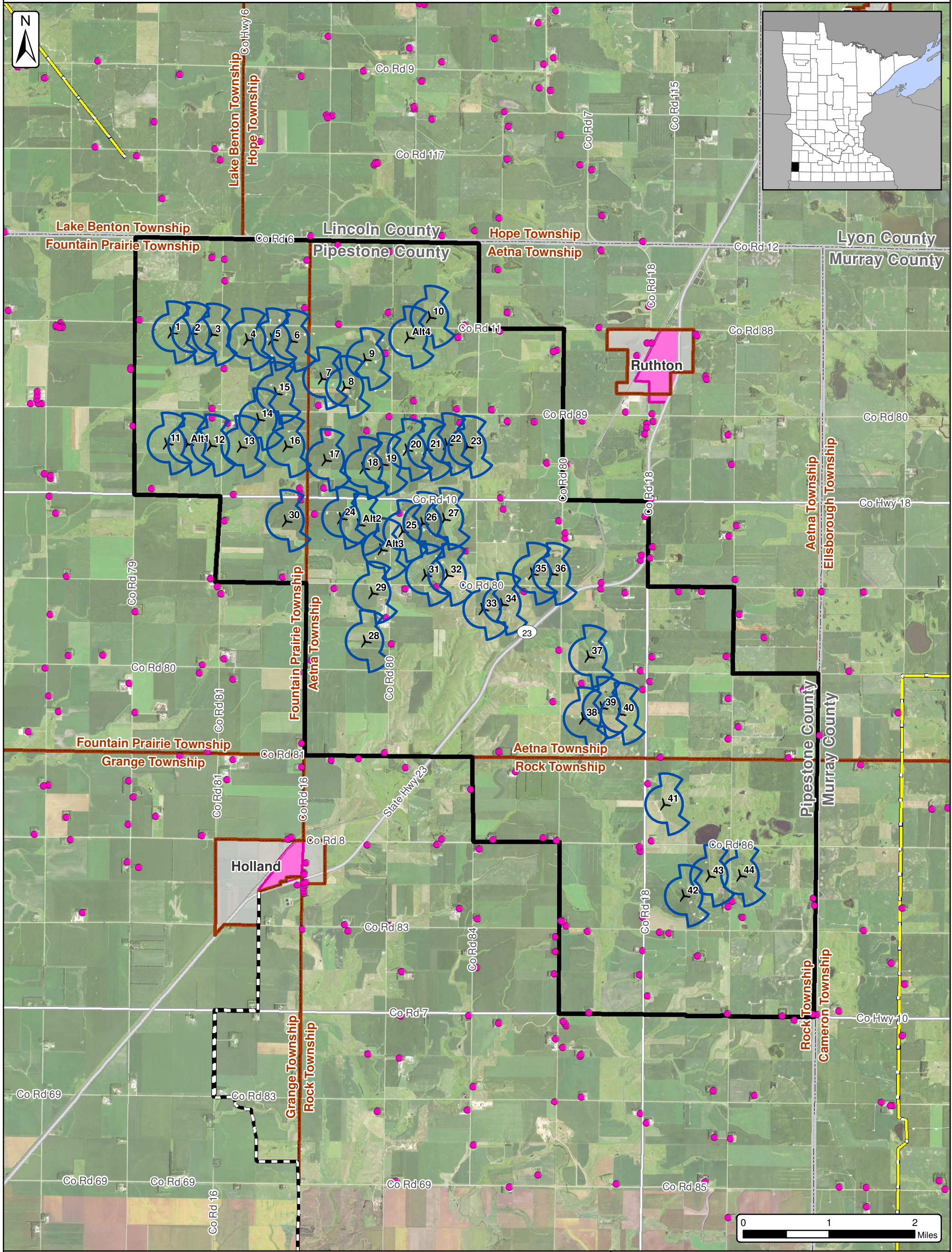
SOURCE: USDA NAIP 2017 IMAGERY



# Lake Benton Wind II

## Map 3- Turbine Layout and Constraints

Pipestone County, Minnesota



- Sensitive Receptors
- Snowmobile Trails (MNDNR)
- Transmission Lines (Velocity Suite)
- 3x5 Wind Buffer
- Sensitive Receptors (Dense Areas)
- Turbine Layout (02/09/2018)
- Project Area  
07/12/2017 (±25,597 Ac.)
- Cities
- Townships
- Counties

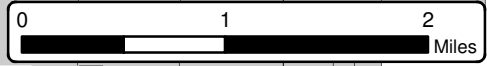
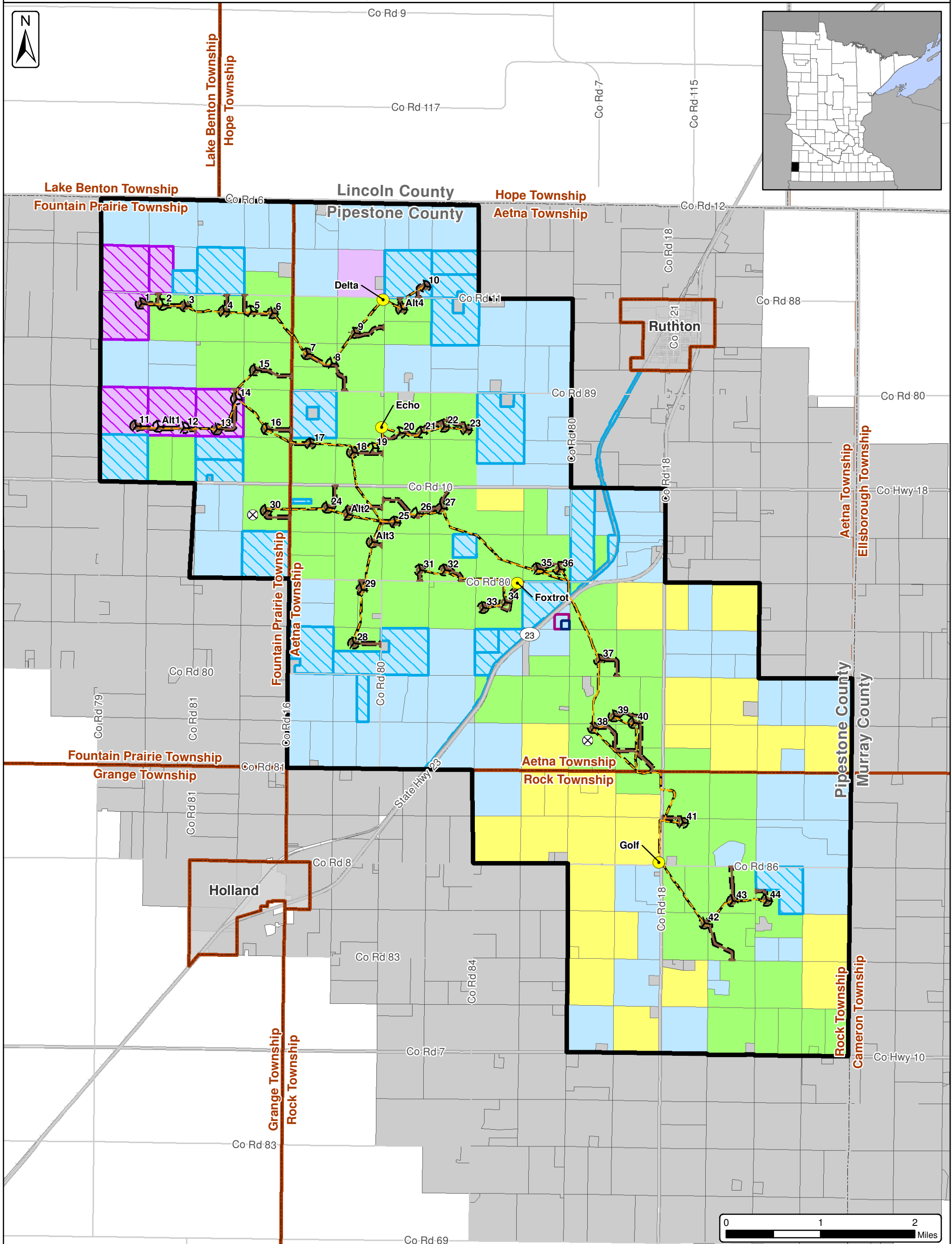
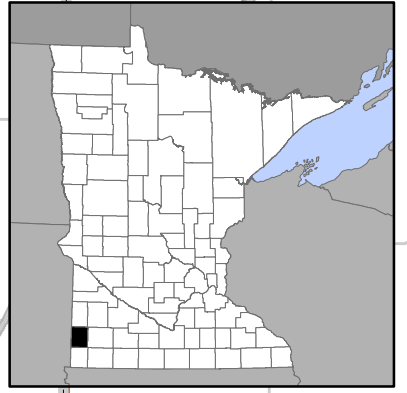


SOURCE: USDA NAIP 2017 IMAGERY

# Lake Benton Wind II

## Map 4- Parcel Land Status Map

Pipestone County, Minnesota



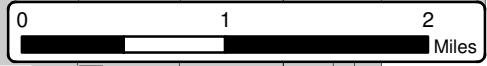
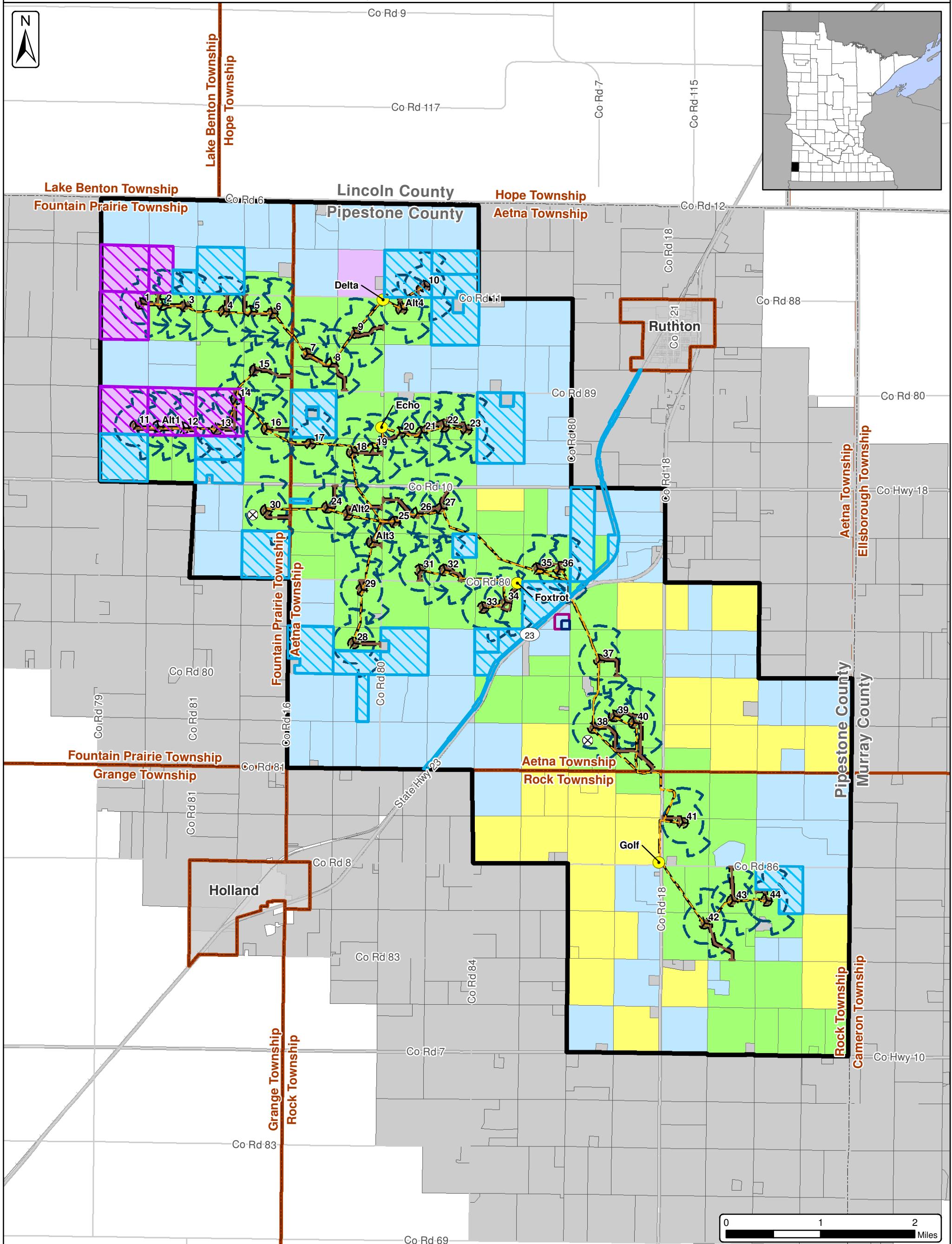
<p>Land Status (04/18/2018)</p> <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #90EE90; border: 1px solid black; margin-right: 5px;"></span> Leased</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #DDA0DD; border: 1px solid black; margin-right: 5px;"></span> Pending</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #ADD8E6; border: 1px solid black; margin-right: 5px;"></span> Targeted</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #FFFF00; border: 1px solid black; margin-right: 5px;"></span> Leased by Others</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #CCCCCC; border: 1px solid black; margin-right: 5px;"></span> No Status</li> </ul>	<ul style="list-style-type: none"> <li> Turbine Layout (02/09/2018)</li> <li> MET Towers</li> <li> Points of Interconnection (POI)</li> <li> 4 POI Collection Lines (02/09/2018)</li> <li> Access Roads (04/18/2018)</li> <li> Construction Easements (04/18/2018)</li> </ul>	<ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 10px; background: repeating-linear-gradient(45deg, transparent, transparent 2px, #FF00FF 2px, #FF00FF 4px); border: 1px solid black; margin-right: 5px;"></span> Pending Parcels within 3x5 Setback</li> <li><span style="display: inline-block; width: 15px; height: 10px; background: repeating-linear-gradient(-45deg, transparent, transparent 2px, #00BFFF 2px, #00BFFF 4px); border: 1px solid black; margin-right: 5px;"></span> Targeted Parcels within 3x5 Setback</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #ADD8E6; border: 1px solid black; margin-right: 5px;"></span> O&amp;M Area (04/18/2018)</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #FF00FF; border: 1px solid black; margin-right: 5px;"></span> Laydown Yard (04/18/2018)</li> <li><span style="display: inline-block; width: 15px; height: 10px; border: 2px solid black; margin-right: 5px;"></span> Project Area 07/12/2017 (±25,597 Ac.)</li> </ul>	<ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #CCCCCC; border: 1px solid black; margin-right: 5px;"></span> Cities</li> <li><span style="display: inline-block; width: 15px; height: 10px; border: 2px solid black; margin-right: 5px;"></span> Townships</li> <li><span style="display: inline-block; width: 15px; height: 10px; border: 1px dashed black; margin-right: 5px;"></span> Counties</li> </ul>
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# Lake Benton Wind II

## Map 4- Parcel Land Status Map

Pipestone County, Minnesota



- |  |   |  |  |
|--|---|--|--|
| <ul style="list-style-type: none"> <li>Land Status (04/18/2018)</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #90EE90; border: 1px solid black;"></span> Leased</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #DDA0DD; border: 1px solid black;"></span> Pending</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #ADD8E6; border: 1px solid black;"></span> Targeted</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #FFFF00; border: 1px solid black;"></span> Leased by Others</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #CCCCCC; border: 1px solid black;"></span> No Status</li> </ul> | <ul style="list-style-type: none"> <li> Turbine Layout (02/09/2018)</li> <li> MET Towers</li> <li> Points of Interconnection (POI)</li> <li> 4 POI Collection Lines (02/09/2018)</li> <li> Access Roads (04/18/2018)</li> <li> Construction Easements (04/18/2018)</li> </ul> | <ul style="list-style-type: none"> <li> Pending Parcels within 3x5 Setback</li> <li> Targeted Parcels within 3x5 Setback</li> <li> O&amp;M Area (04/18/2018)</li> <li> Laydown Yard (04/18/2018)</li> <li> 3x5 Setback Buffer</li> <li> Project Area 07/12/2017 (±25,597 Ac.)</li> </ul> | <ul style="list-style-type: none"> <li> Cities</li> <li> Townships</li> <li> Counties</li> </ul> |
|--|---|--|--|

