

Project:

Prairie_Wind

Description:

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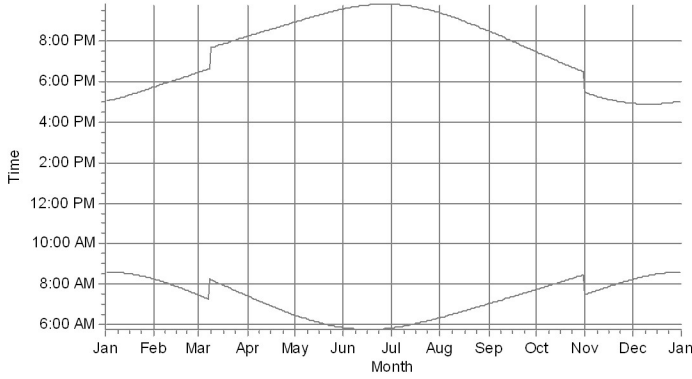
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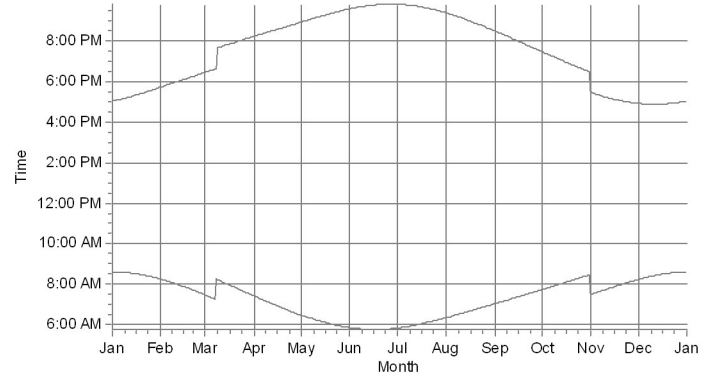
SHADOW - Calendar, graphical

Calculation: Shadow Calculation

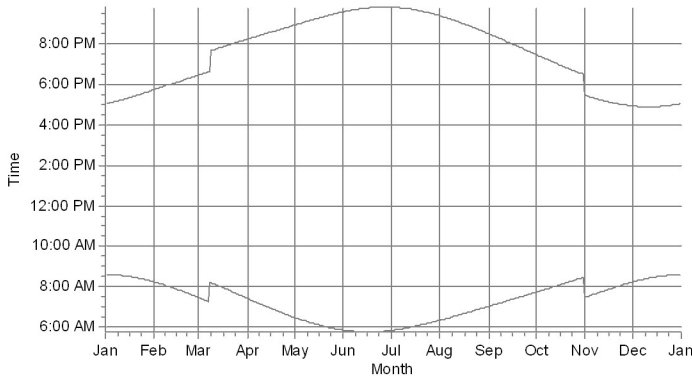
Rec117: Rec117



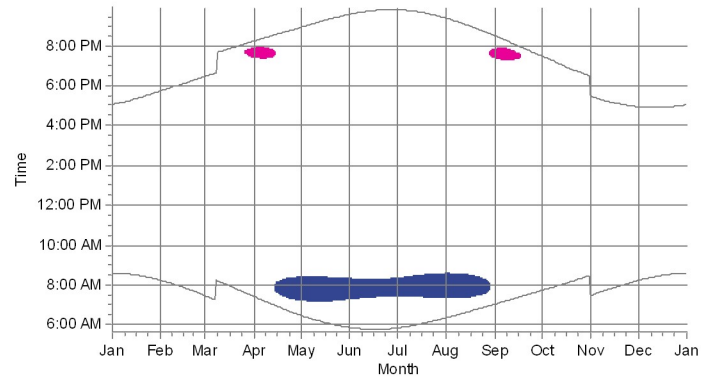
Rec118: Rec118



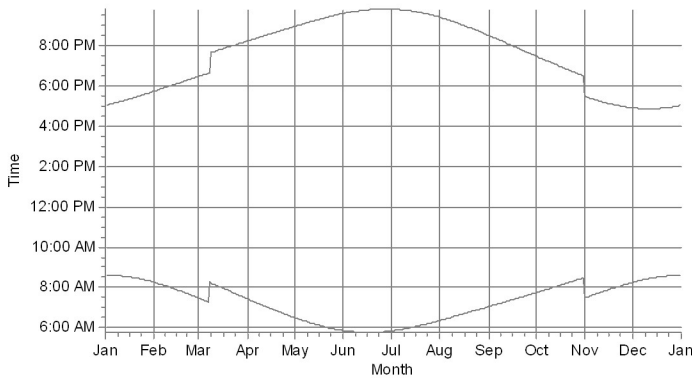
Rec119: Rec119



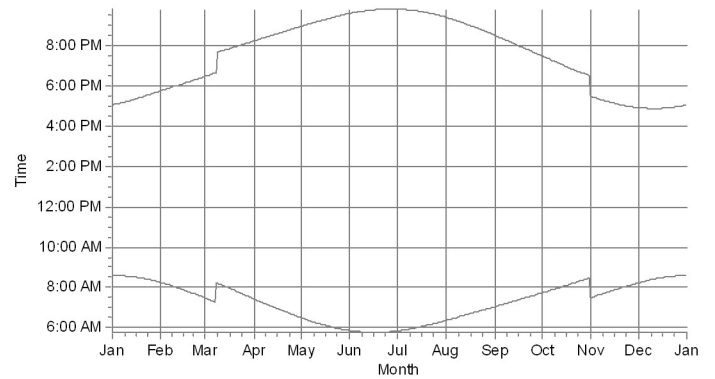
Rec120: Rec120



Rec121: Rec121



Rec122: Rec122



WTGs

D50: D50
 D49: D49

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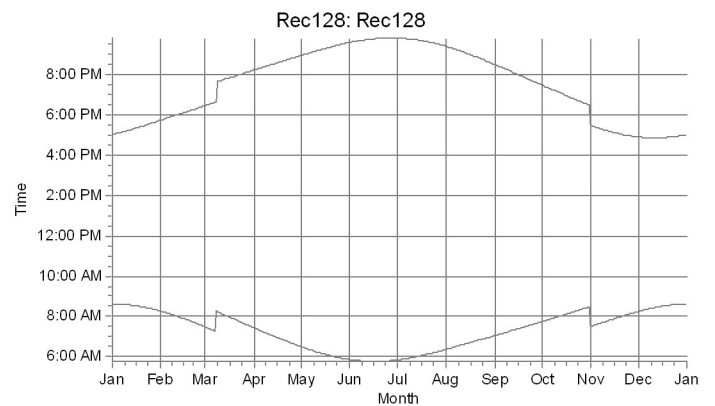
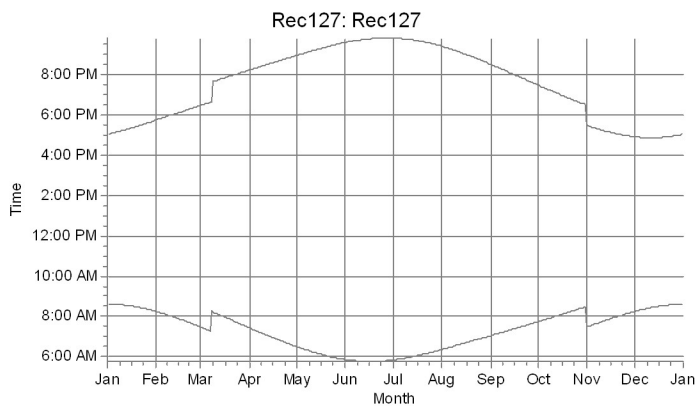
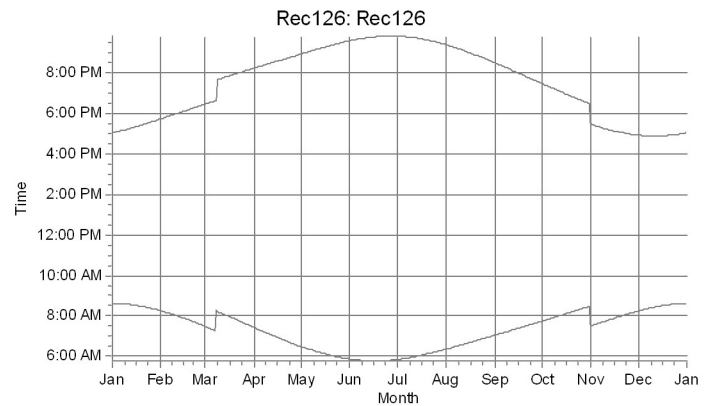
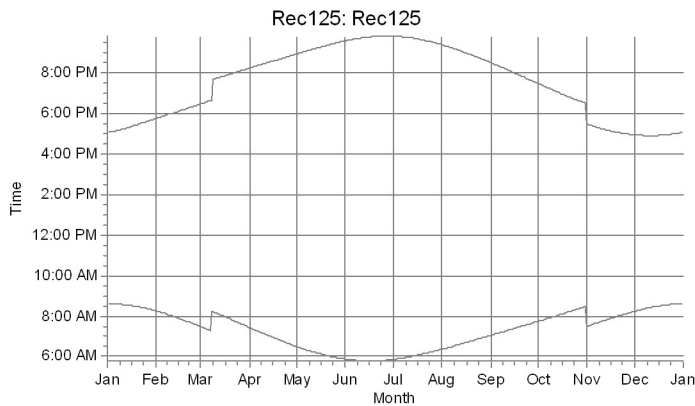
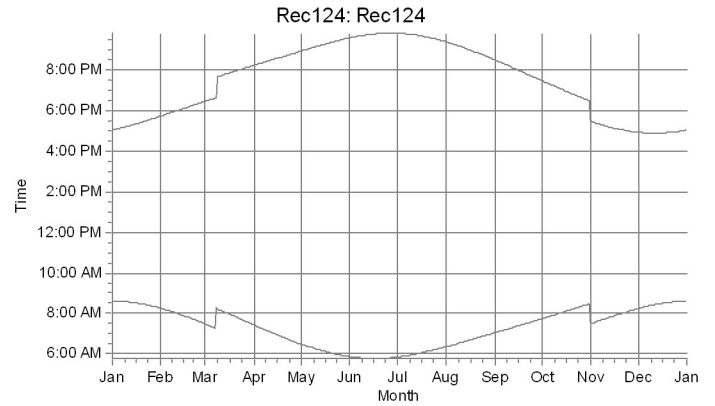
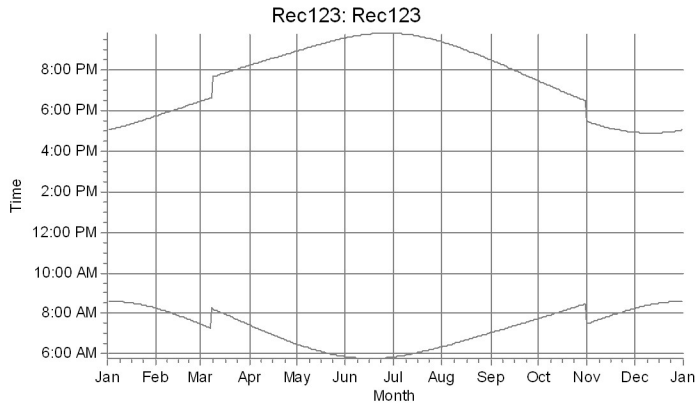
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SHADOW - Calendar, graphical

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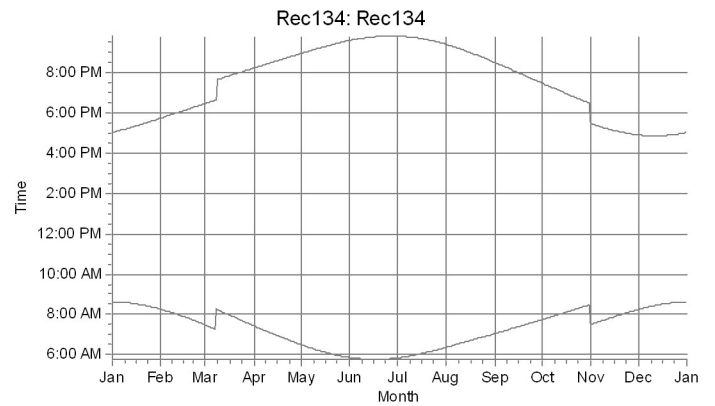
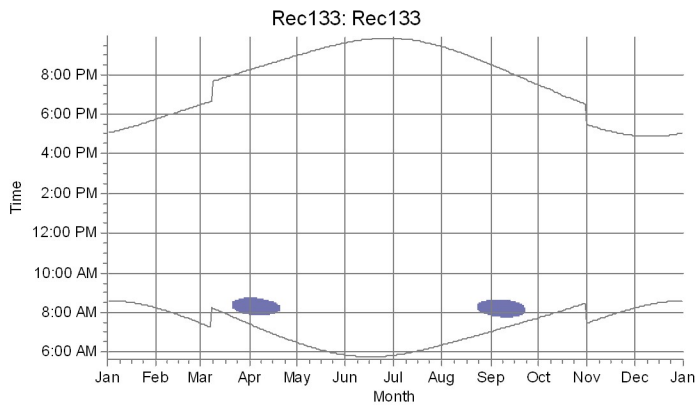
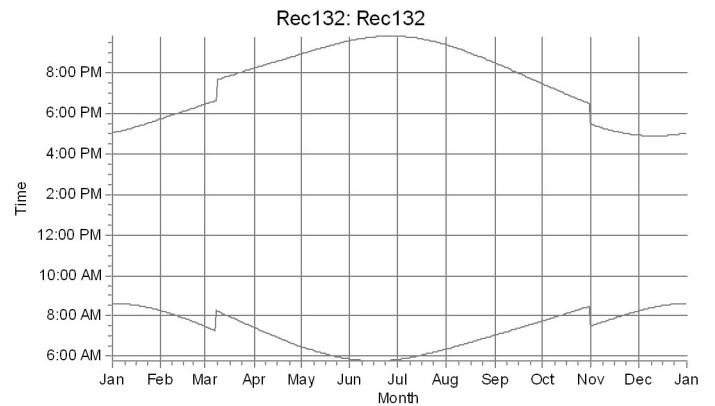
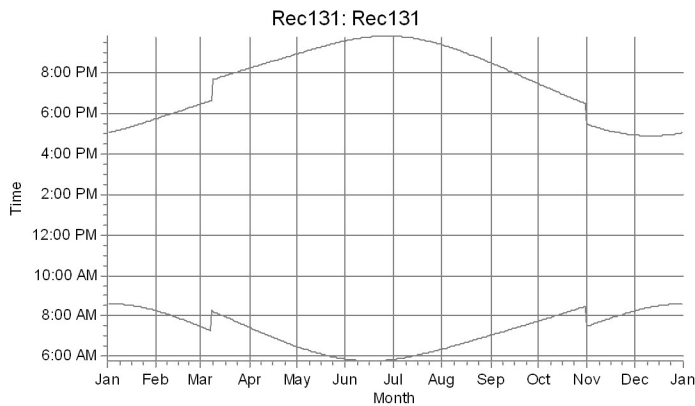
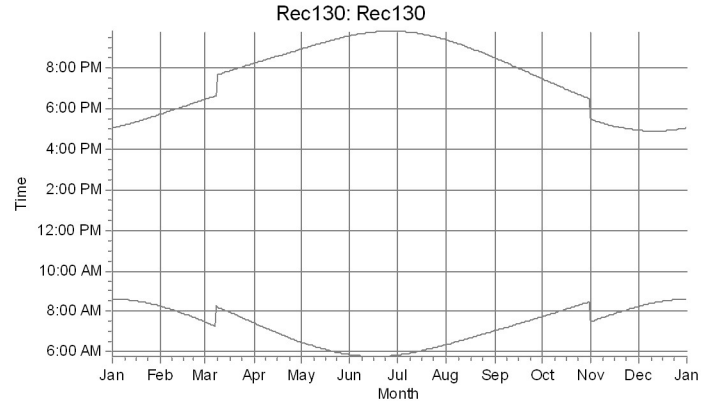
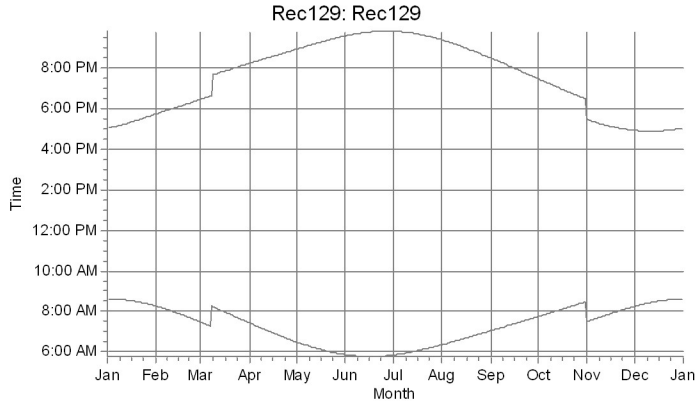
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WTGs

D61: D61

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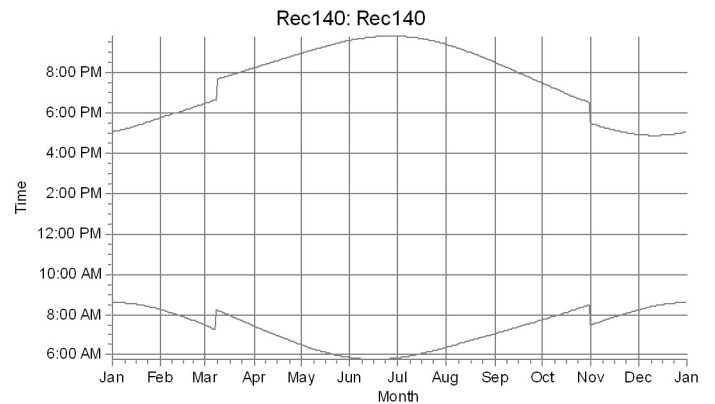
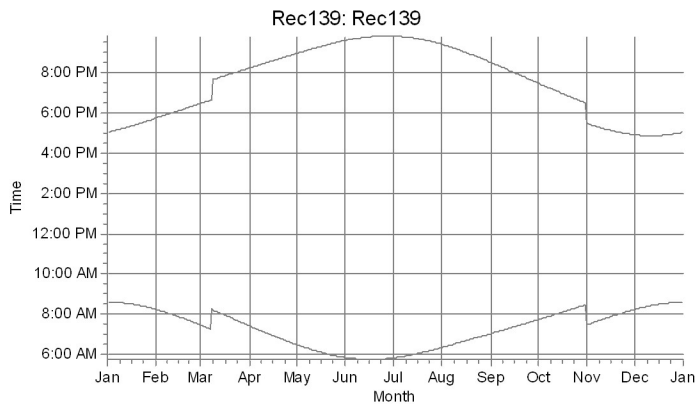
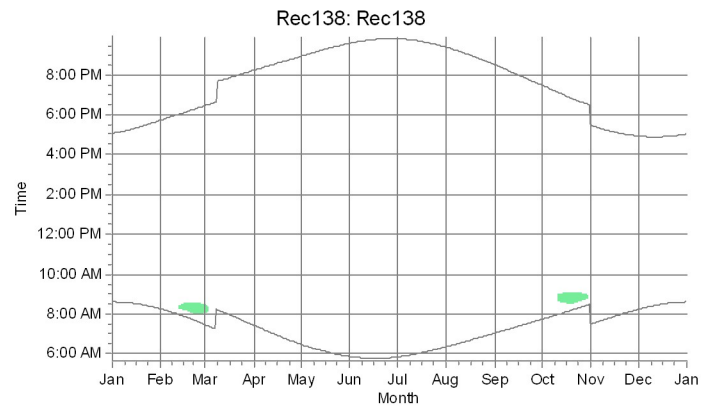
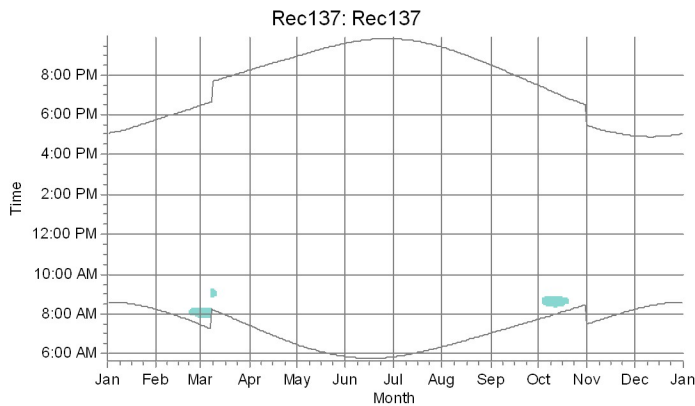
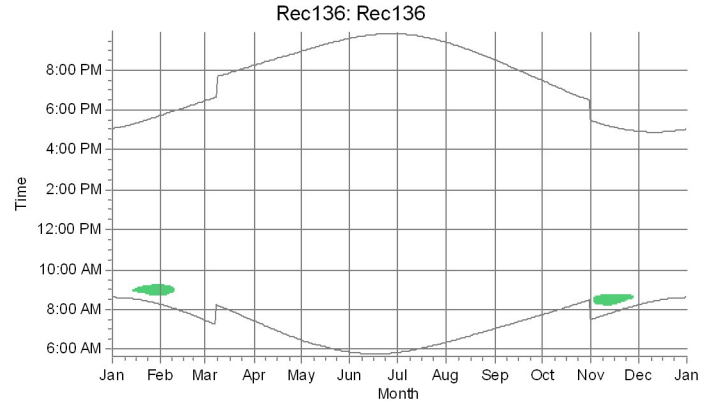
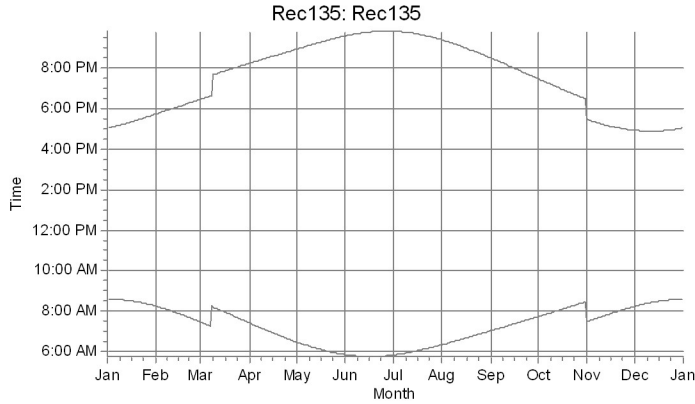
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SHADOW - Calendar, graphical

Calculation: Shadow Calculation



WTGs

MW102: MW102
 MW101: MW101
 C38: C38

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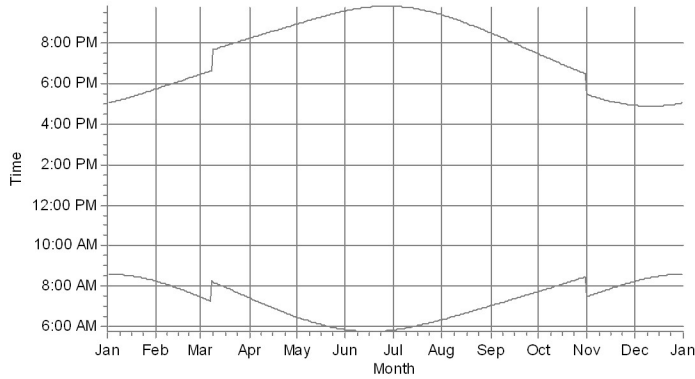
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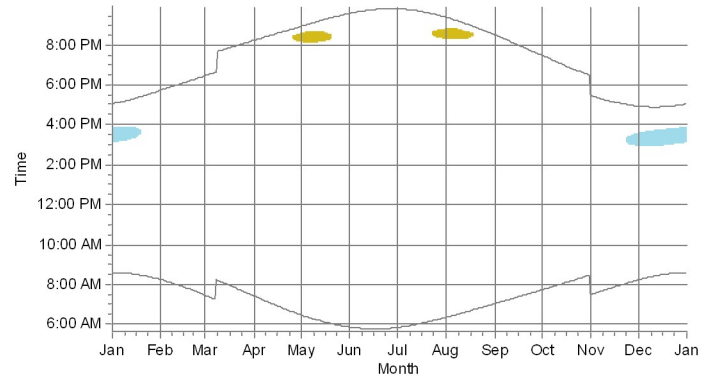
SHADOW - Calendar, graphical

Calculation: Shadow Calculation

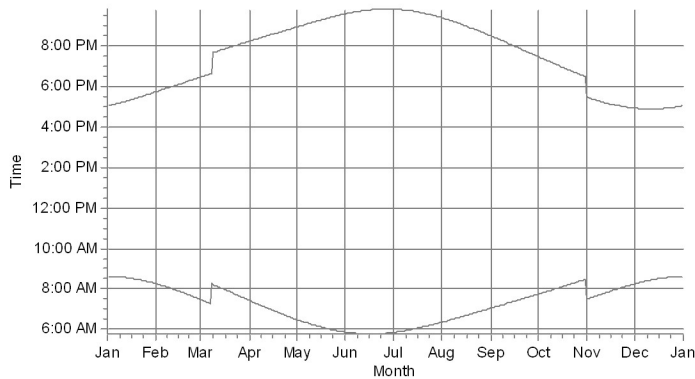
Rec141: Rec141



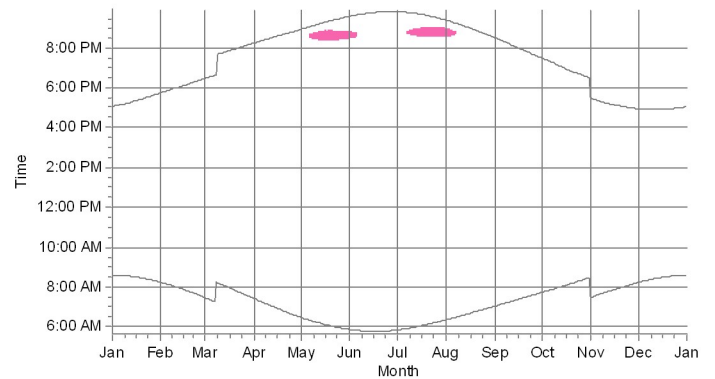
Rec142: Rec142



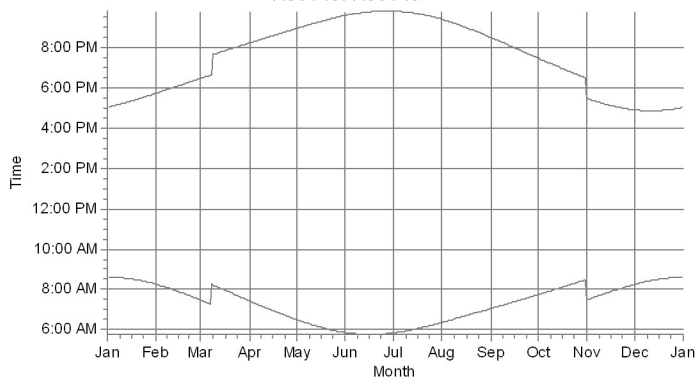
Rec143: Rec143



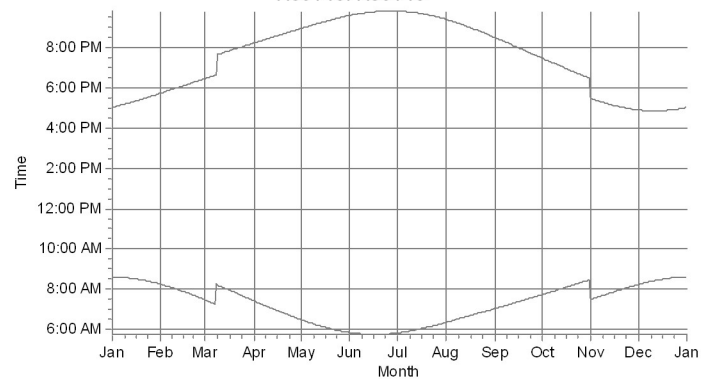
Rec144: Rec144



Rec145: Rec145



Rec146: Rec146



WTGs

B29: B29
 B30: B30
 D48: D48

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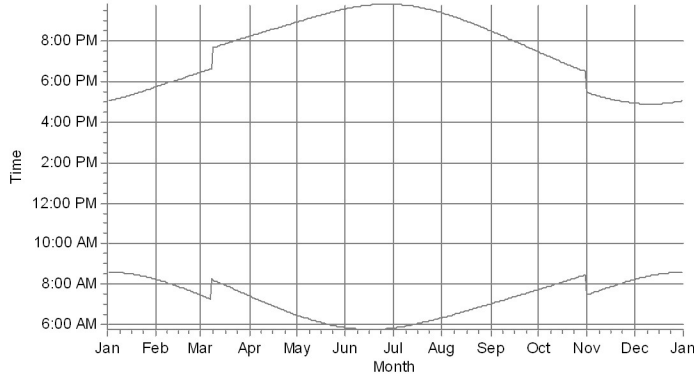
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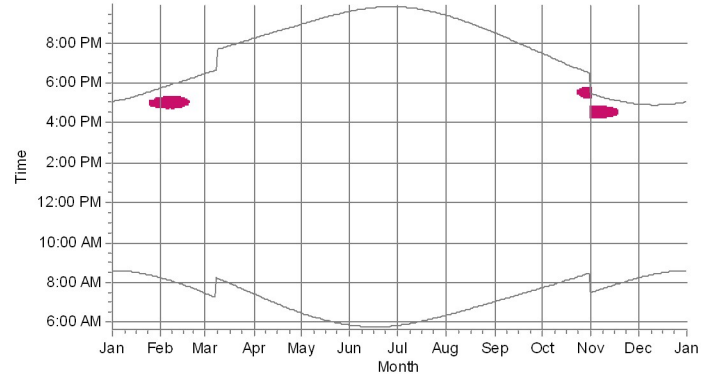
SHADOW - Calendar, graphical

Calculation: Shadow Calculation

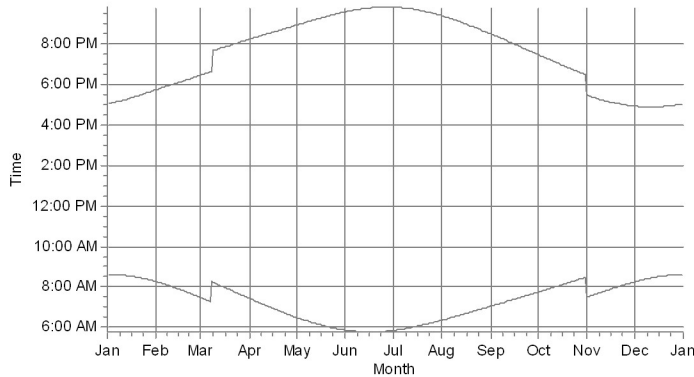
Rec147: Rec147



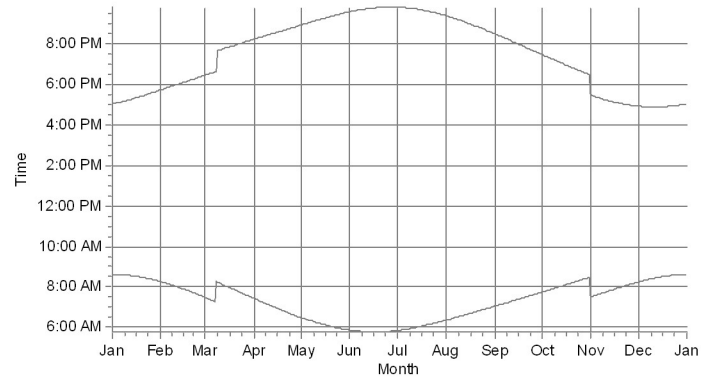
Rec148: Rec148



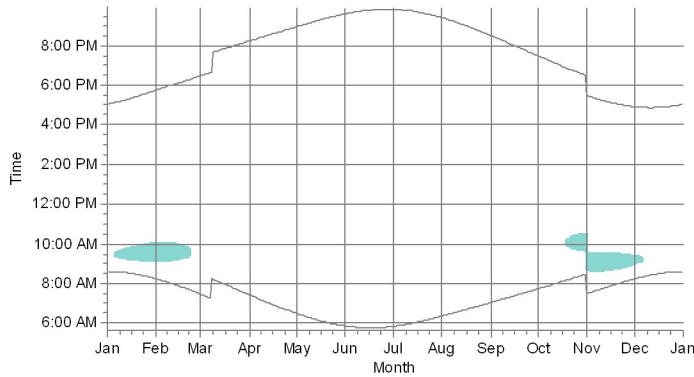
Rec149: Rec149



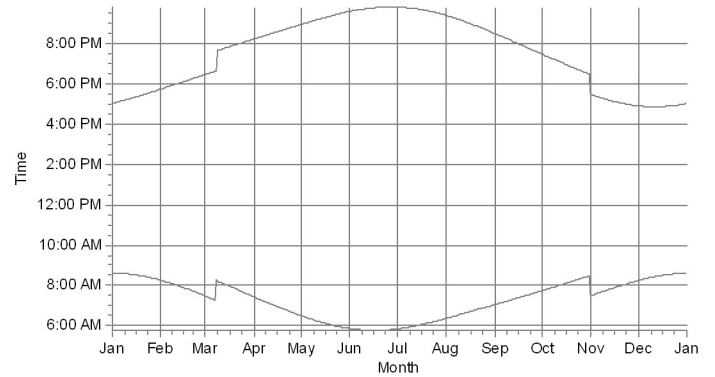
Rec150: Rec150



Rec151: Rec151



Rec152: Rec152



WTGs

C38: C38

C39: C39

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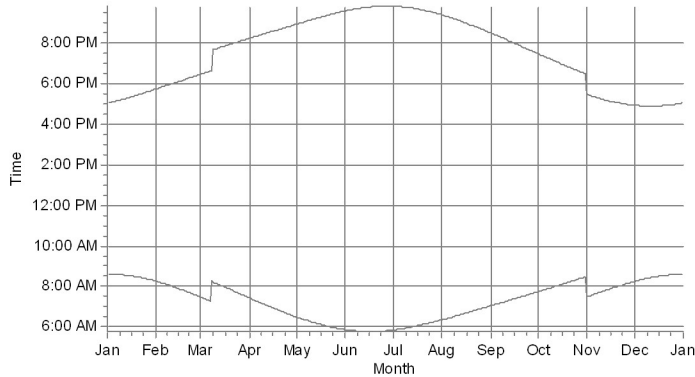
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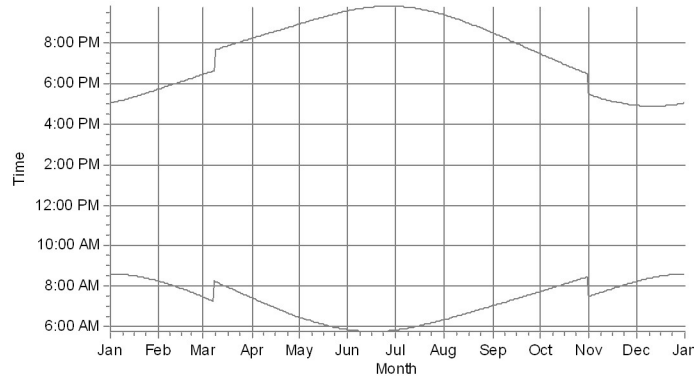
SHADOW - Calendar, graphical

Calculation: Shadow Calculation

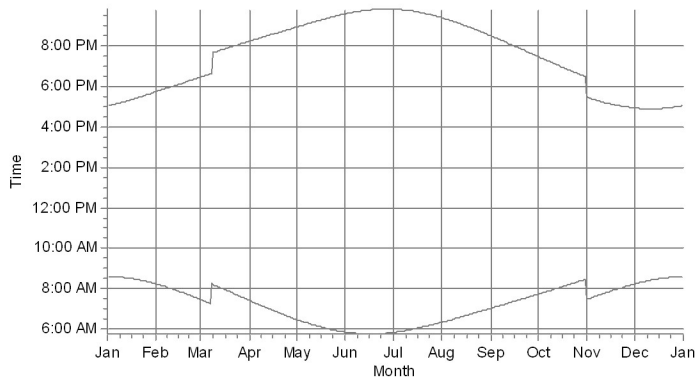
Rec153: Rec153



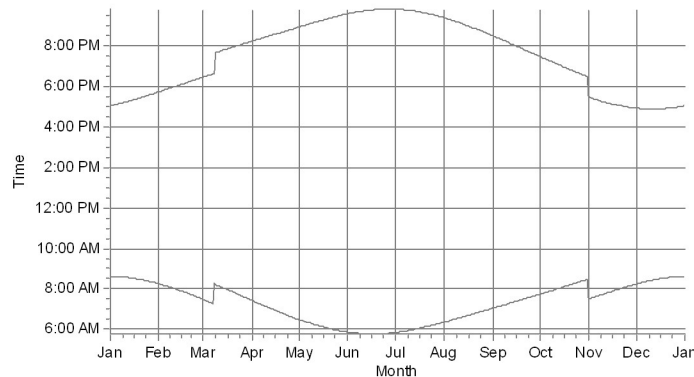
Rec154: Rec154



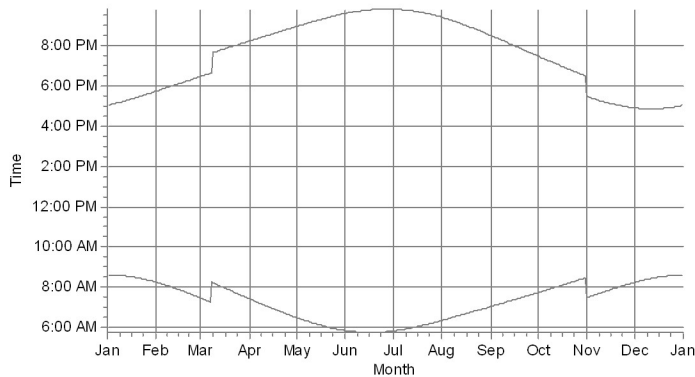
Rec155: Rec155



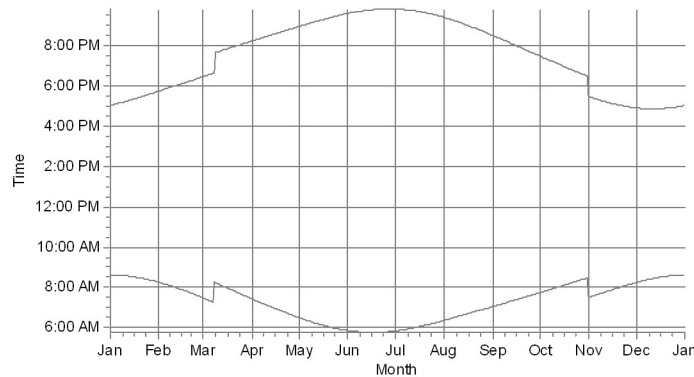
Rec156: Rec156



Rec157: Rec157



Rec158: Rec158



WTGs

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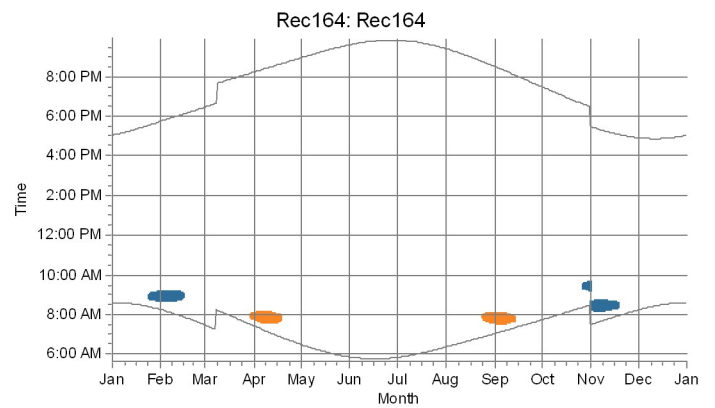
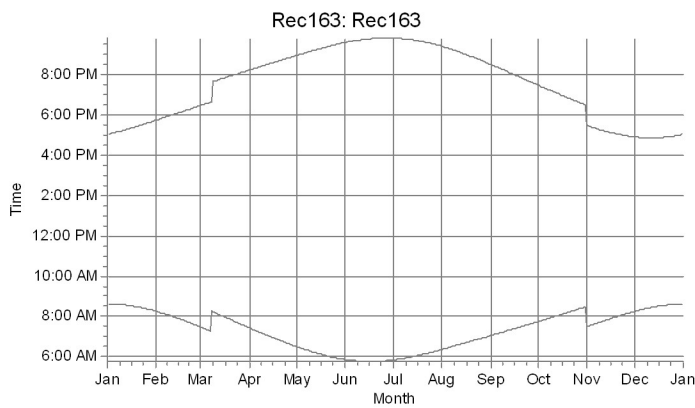
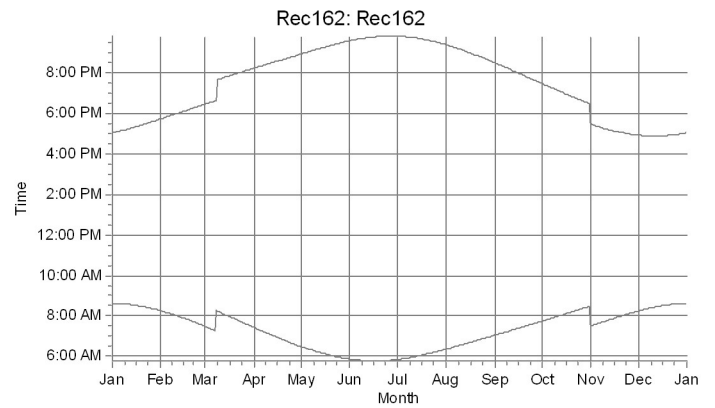
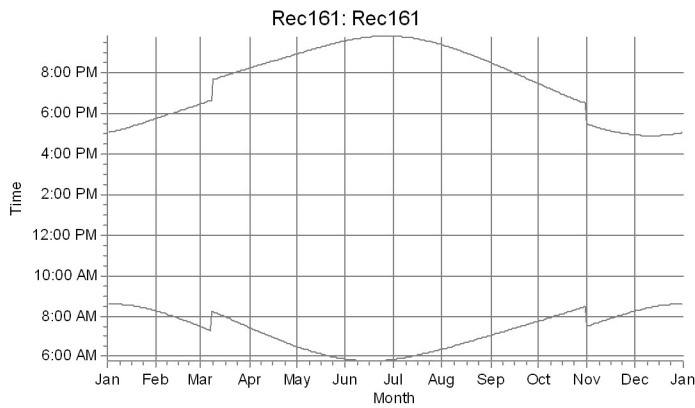
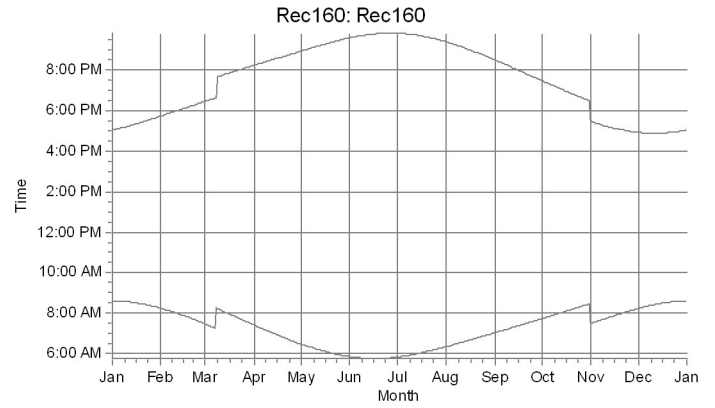
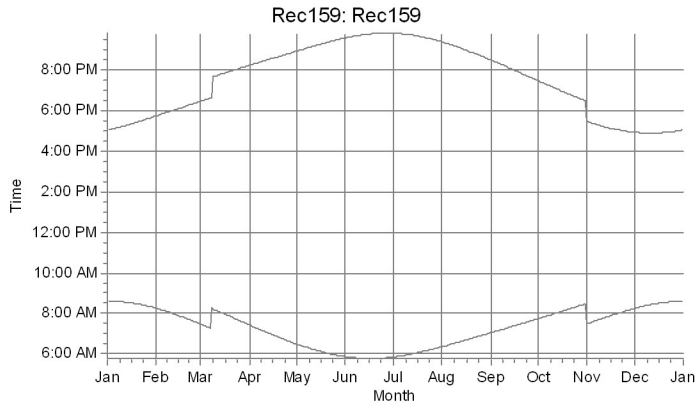
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WTGs

B20: B20
 B21: B21

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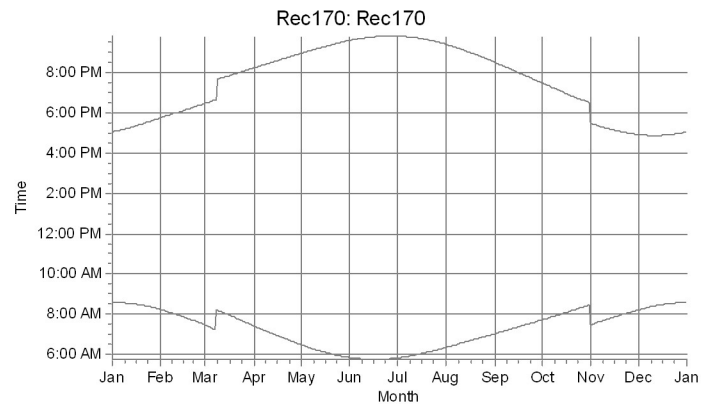
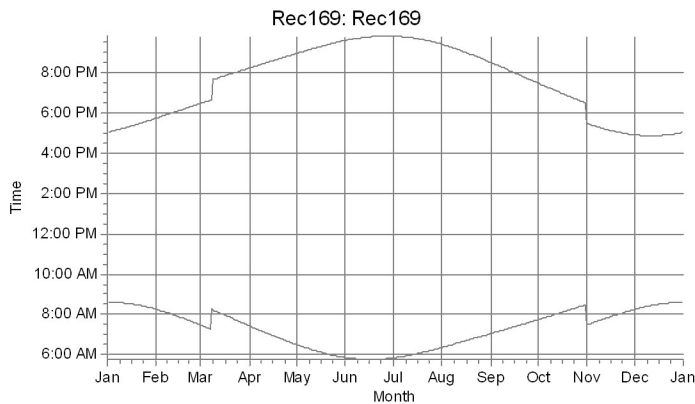
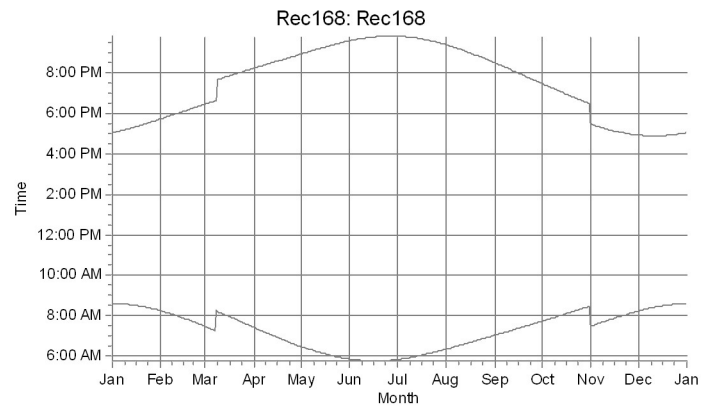
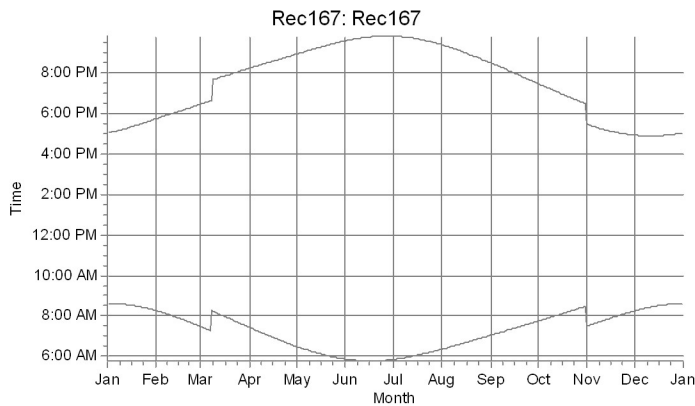
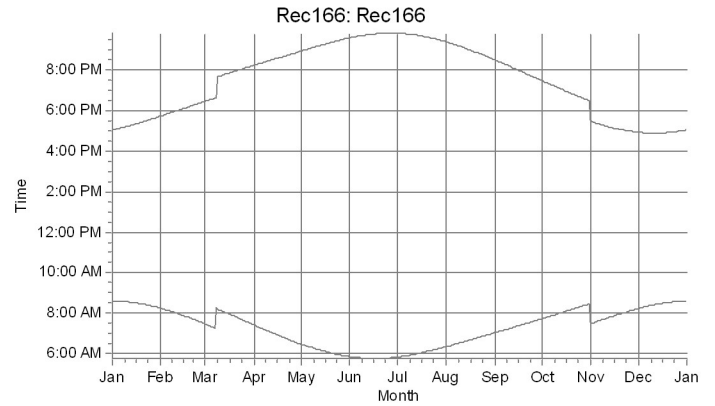
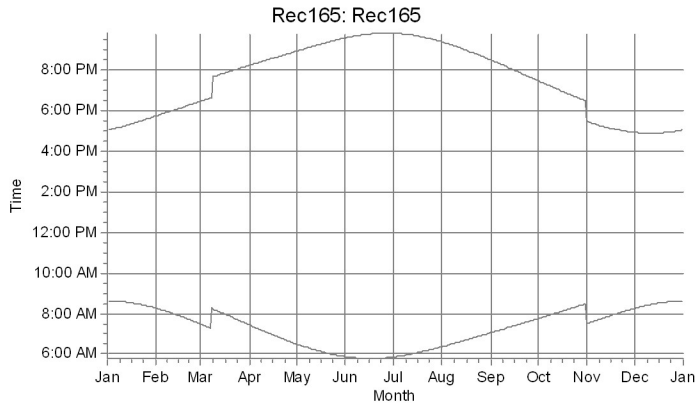
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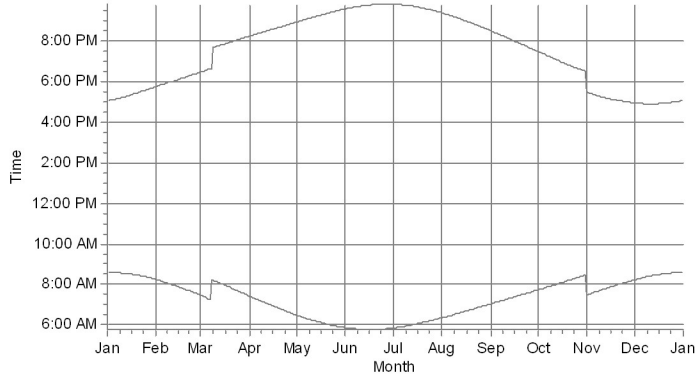
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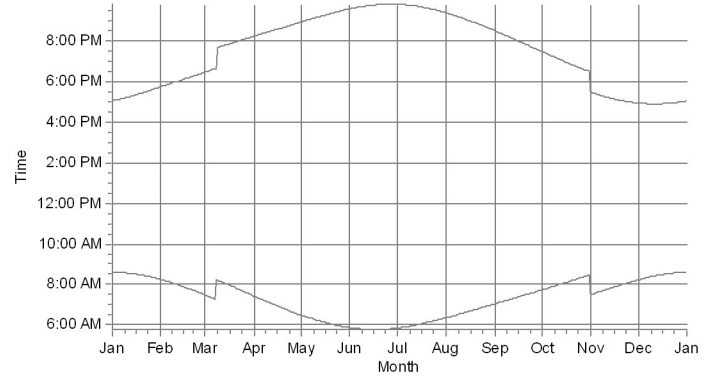
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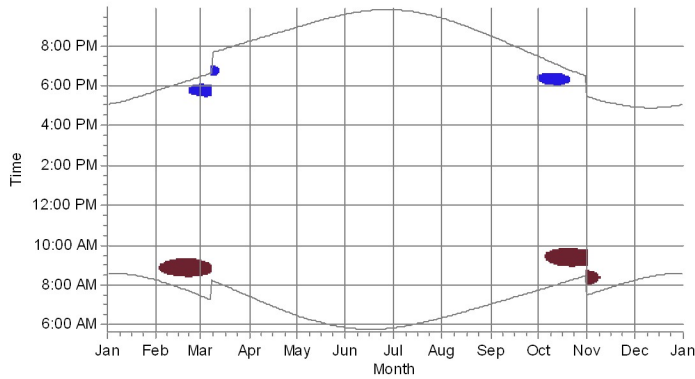
Rec171: Rec171



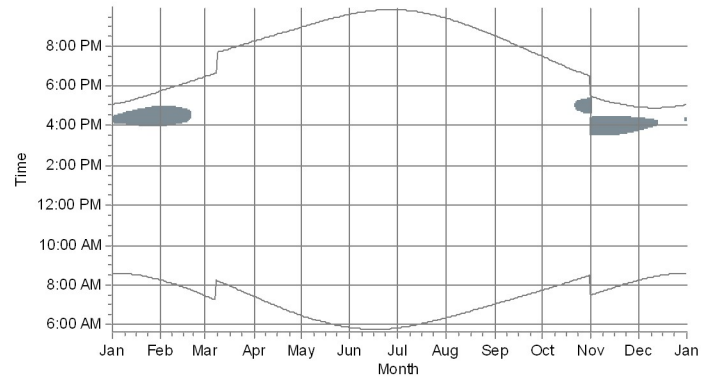
Rec172: Rec172



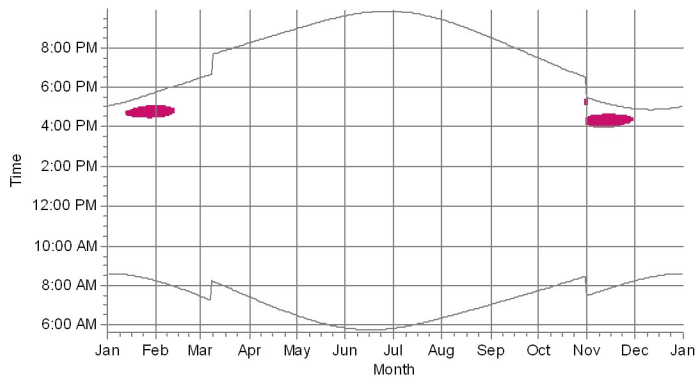
Rec173: Rec173



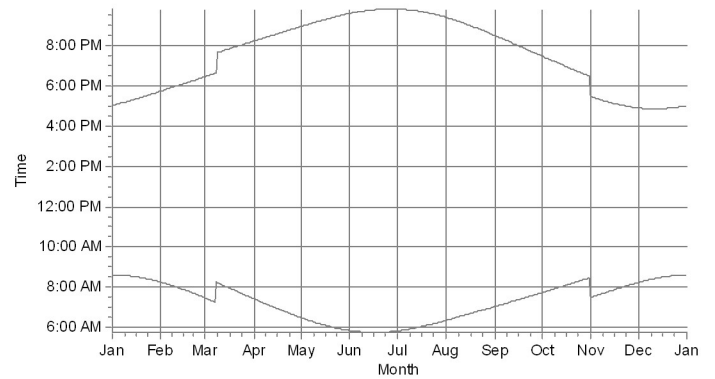
Rec174: Rec174



Rec175: Rec175



Rec176: Rec176



WTGs

B22: B22
 B25: B25
 B24: B24
 C39: C39

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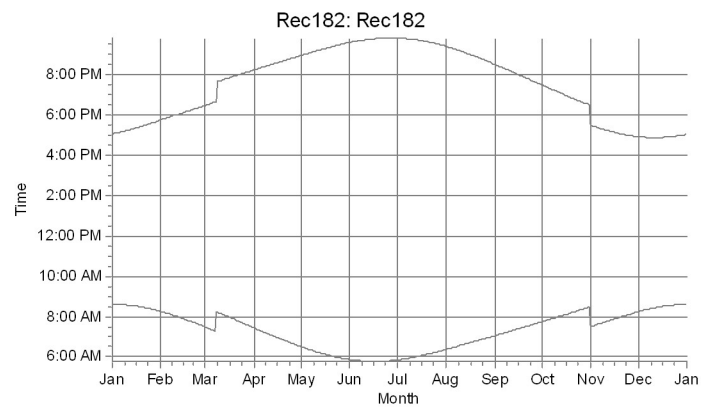
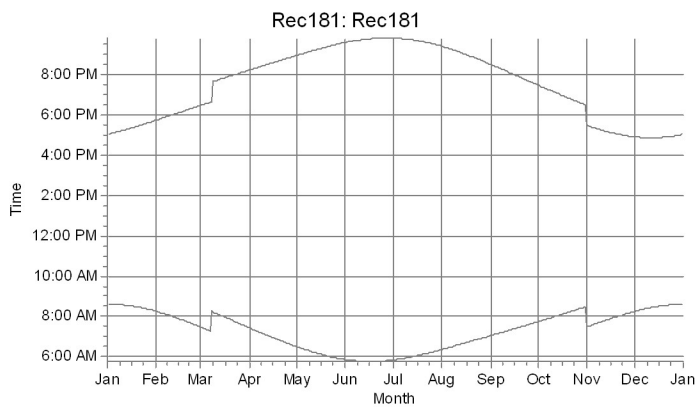
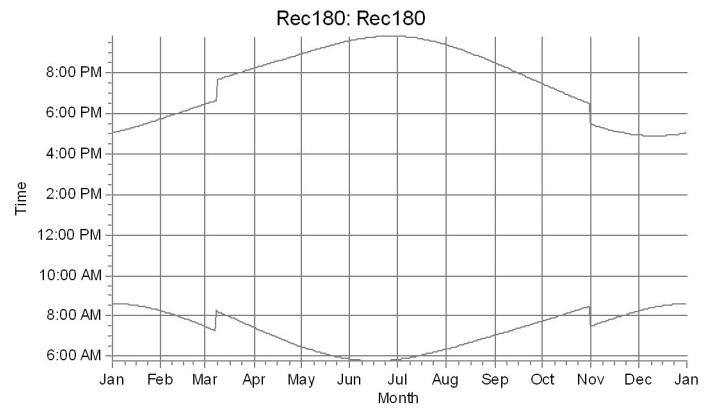
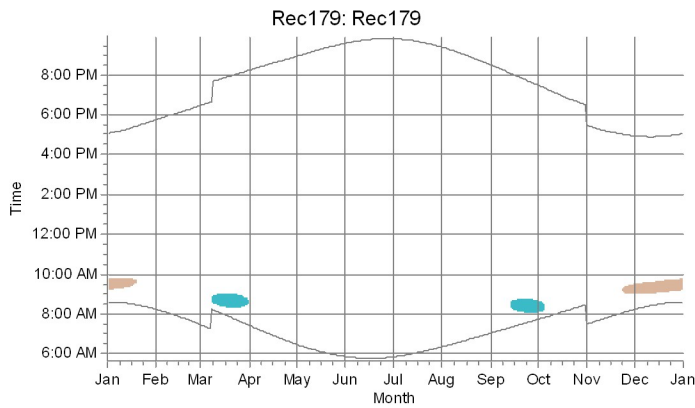
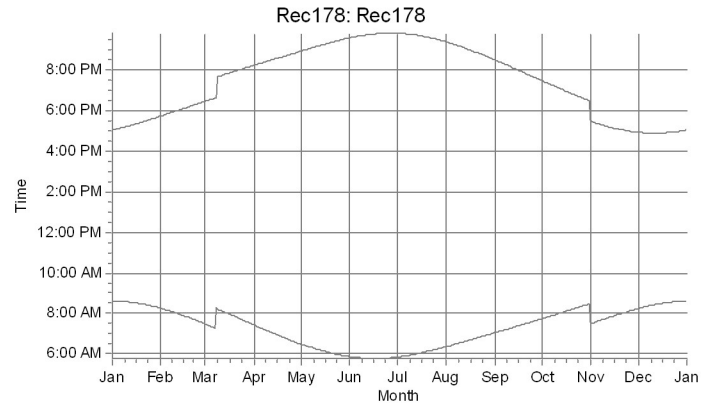
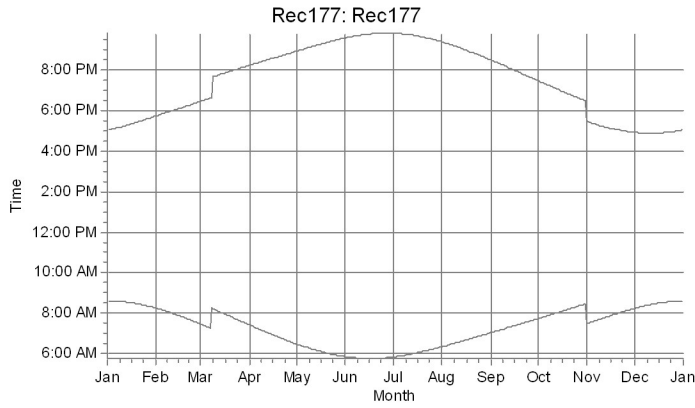
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WTGs

E63: E63
 E65: E65

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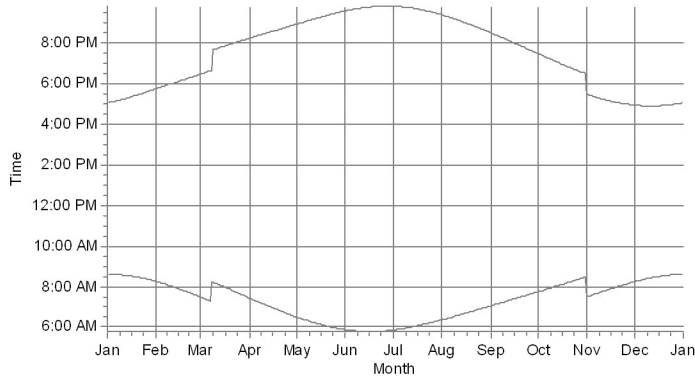
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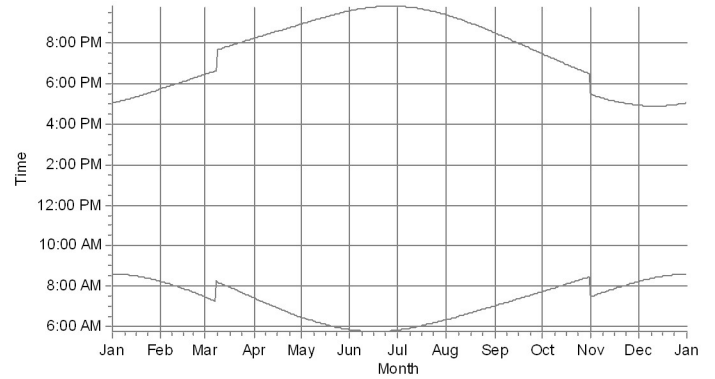
SHADOW - Calendar, graphical

Calculation: Shadow Calculation

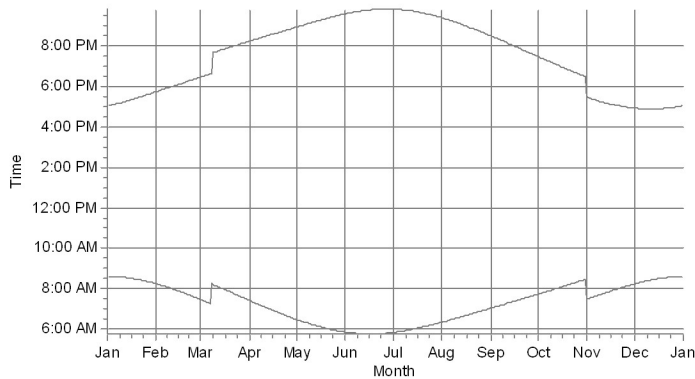
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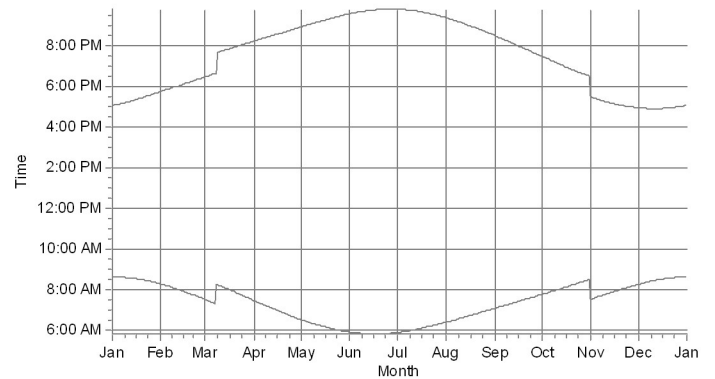
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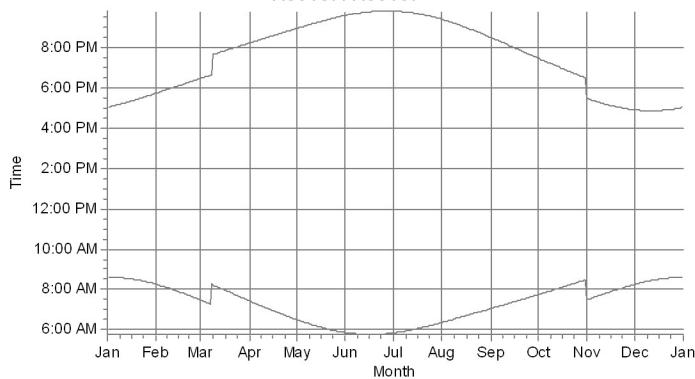
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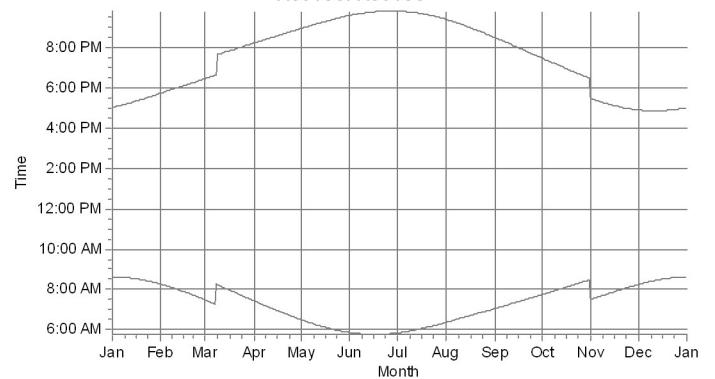
Rec186: Rec186



Rec187: Rec187



Rec188: Rec188



WTGs

Project:

Prairie_Wind

Description:

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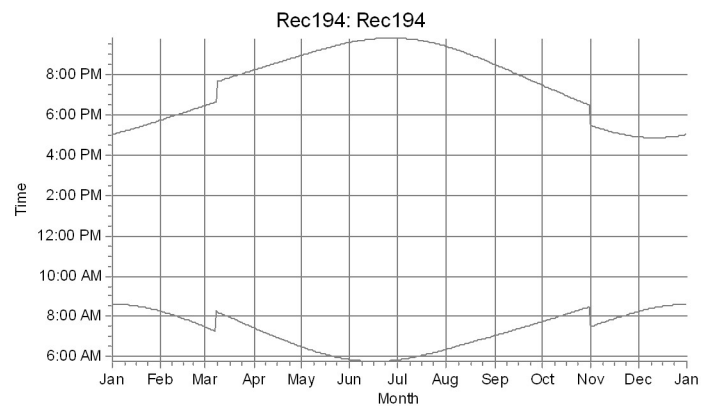
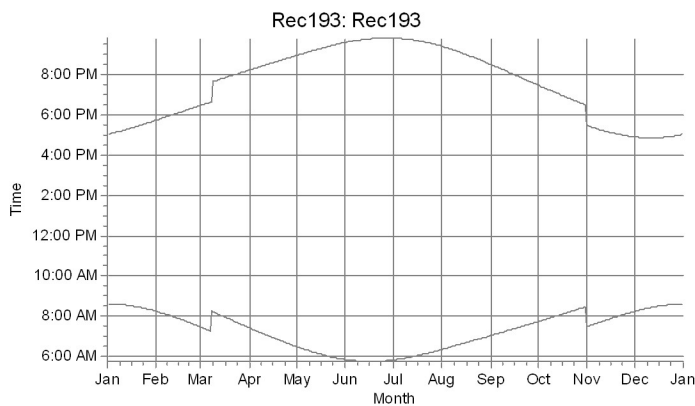
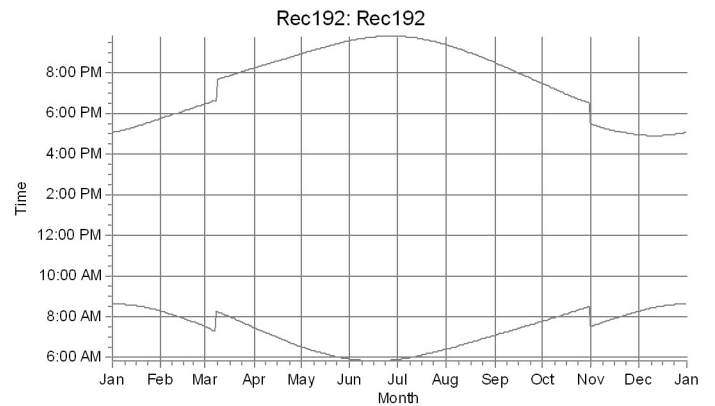
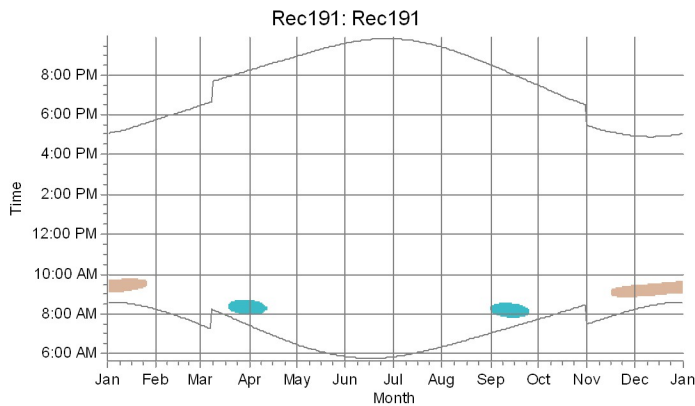
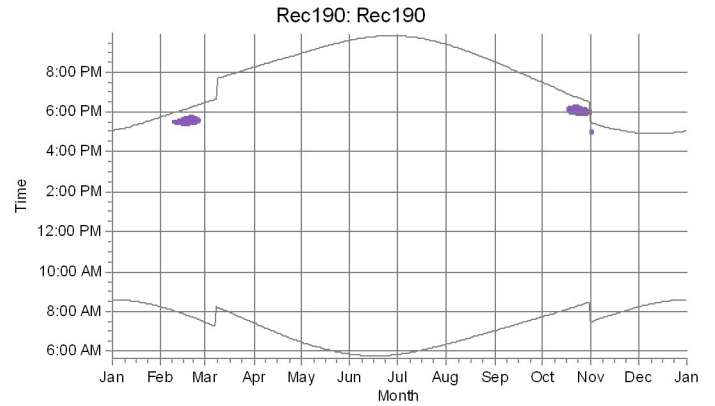
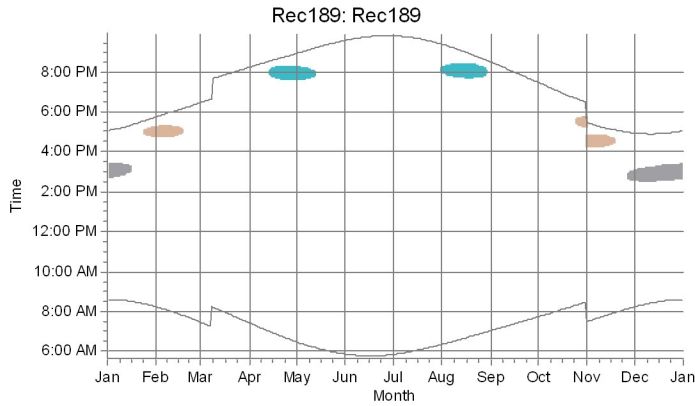
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SHADOW - Calendar, graphical

Calculation: Shadow Calculation



WTGs

E64: E64
 E63: E63
 E65: E65
 E73: E73

Project:

Prairie_Wind

Description:

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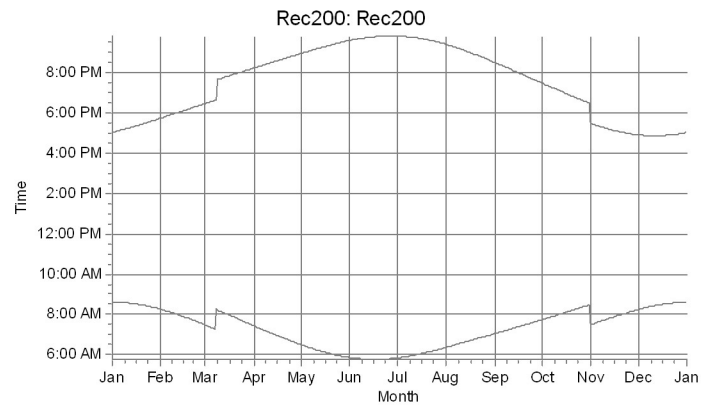
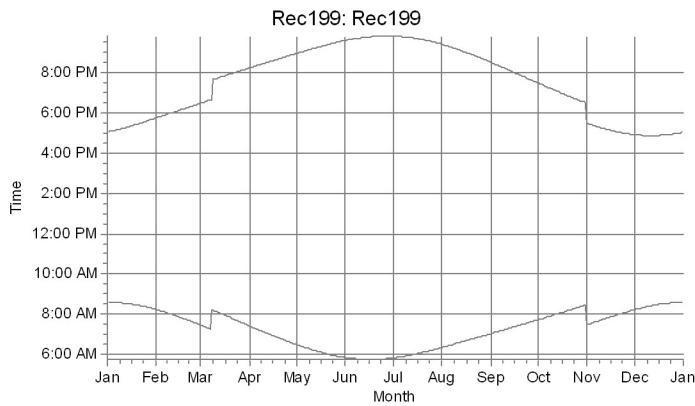
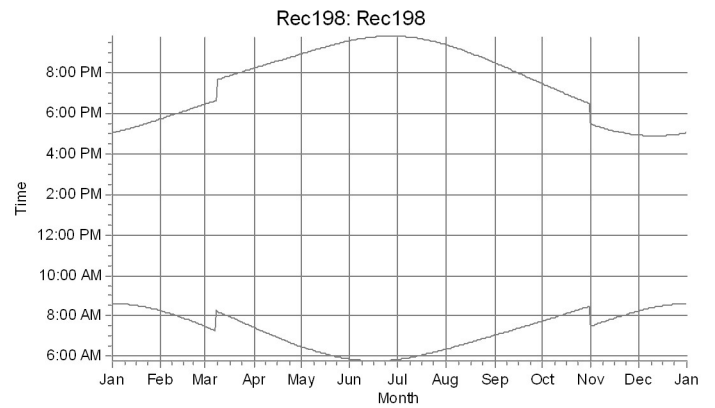
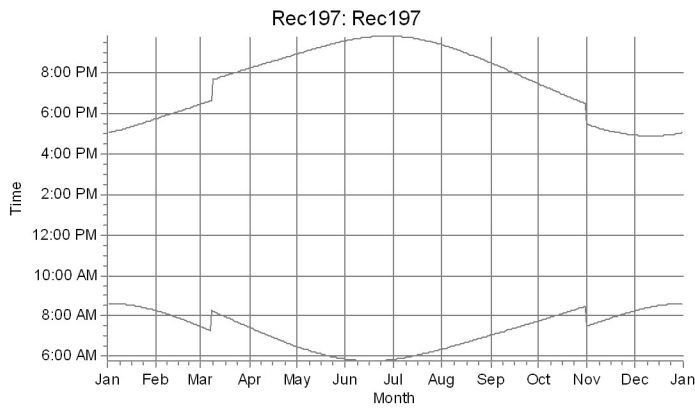
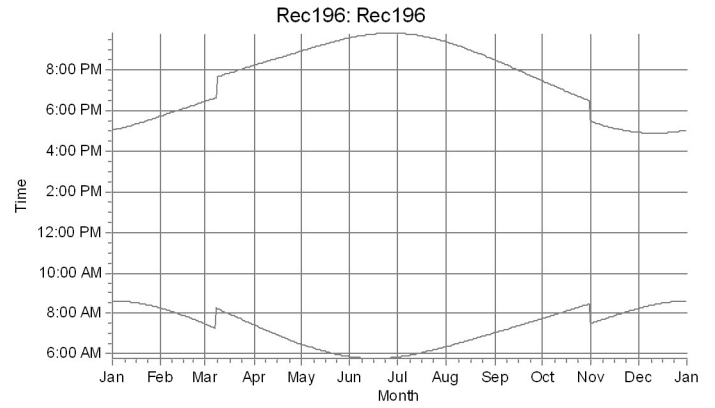
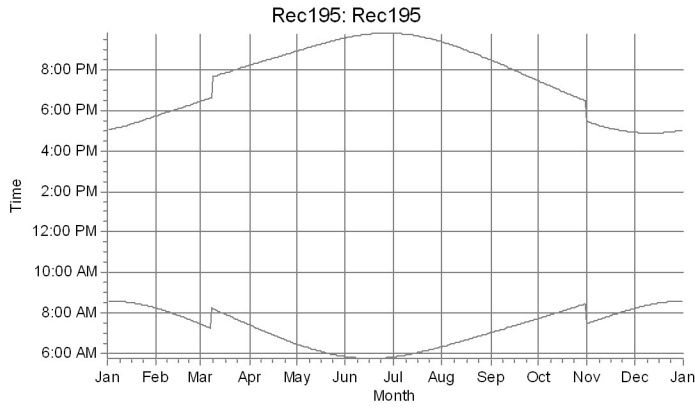
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SHADOW - Calendar, graphical

Calculation: Shadow Calculation



WTGs

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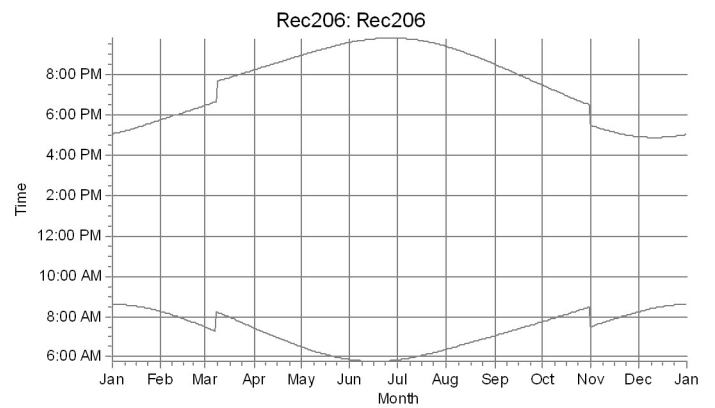
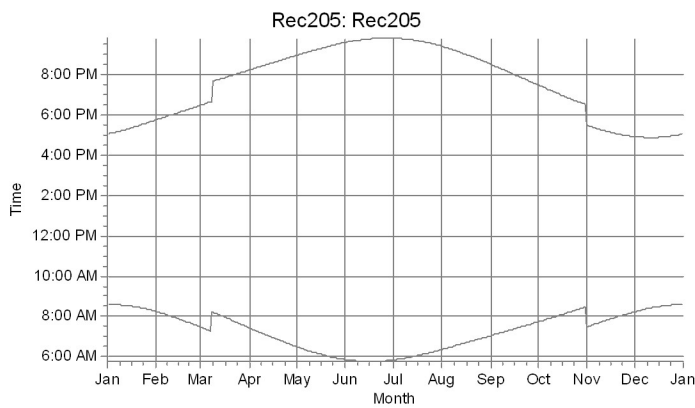
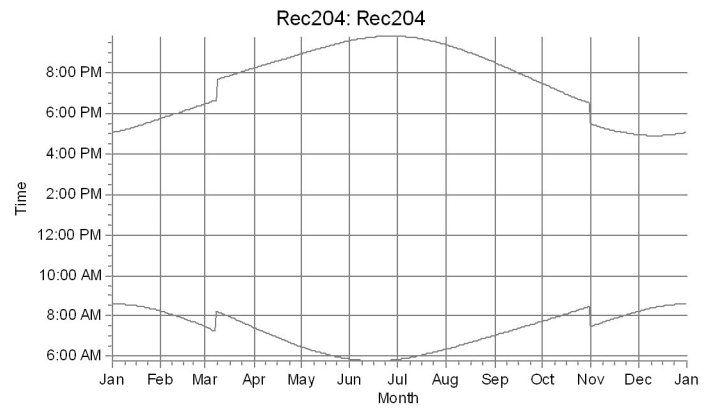
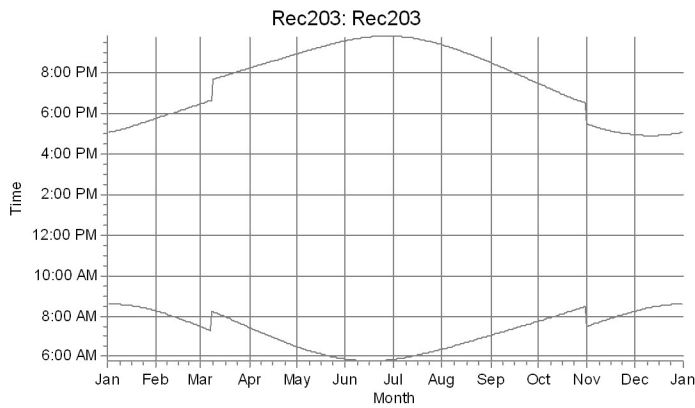
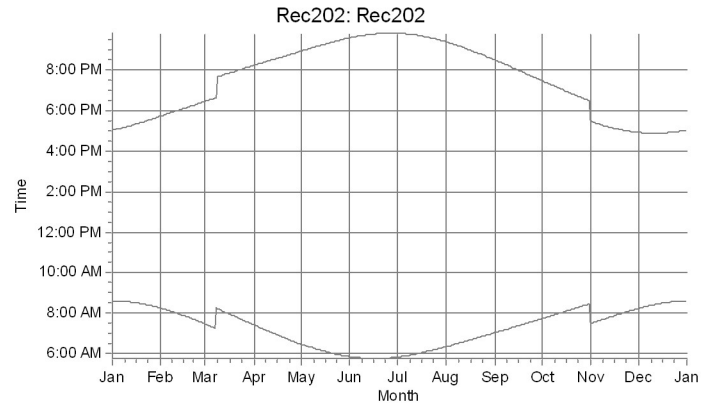
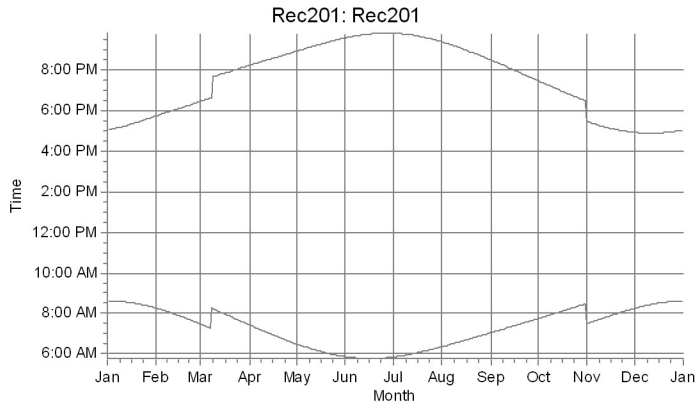
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SHADOW - Calendar, graphical

Calculation: Shadow Calculation



WTGs

Project:

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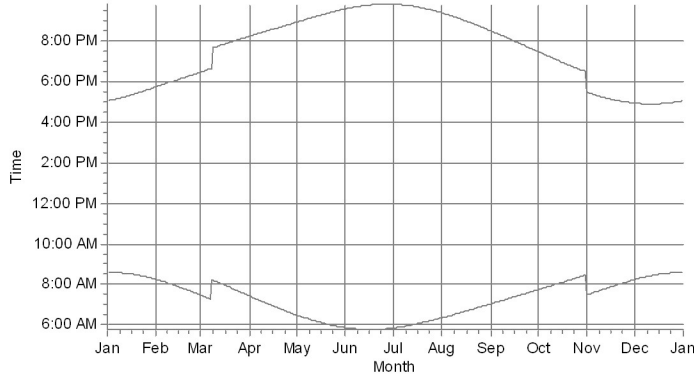
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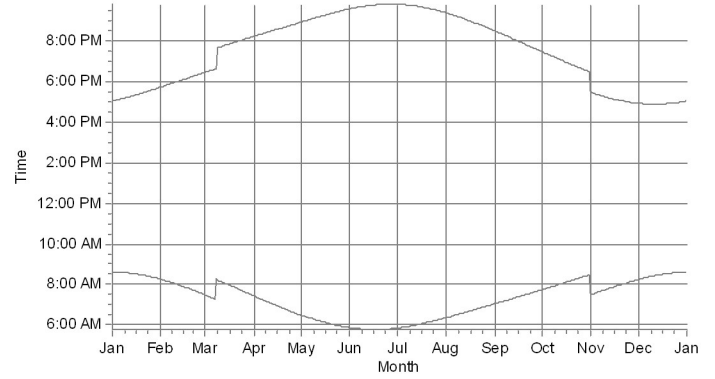
SHADOW - Calendar, graphical

Calculation: Shadow Calculation

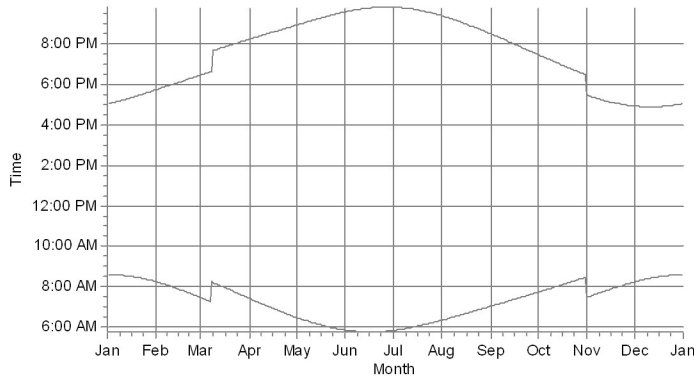
Rec207: Rec207



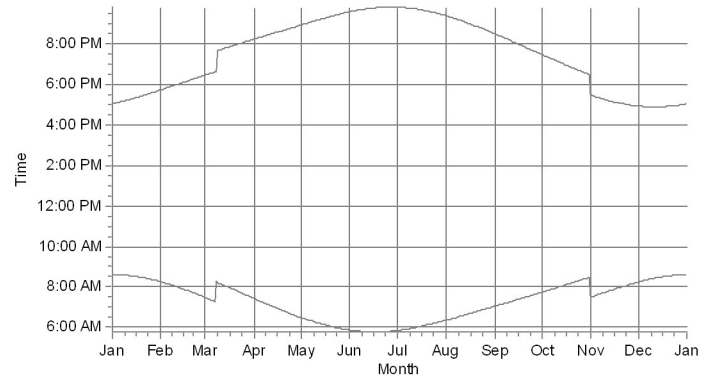
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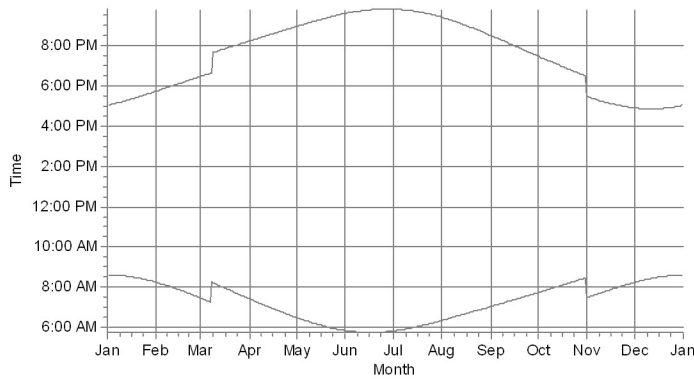
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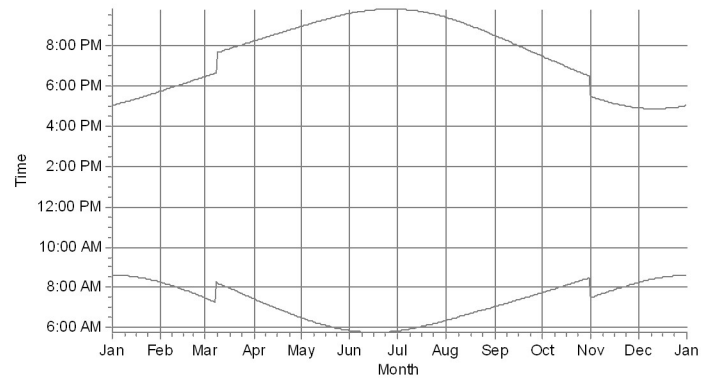
Rec210: Rec210



Rec211: Rec211



Rec212: Rec212



WTGs

Project:

Prairie_Wind

Description:

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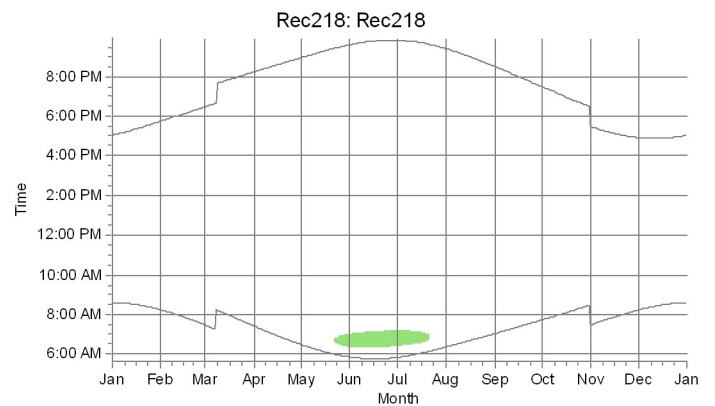
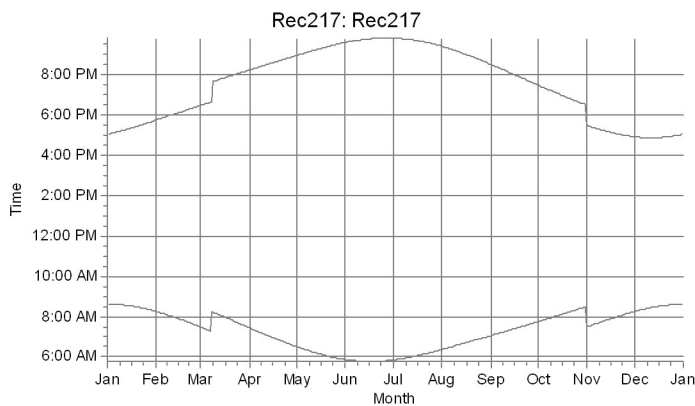
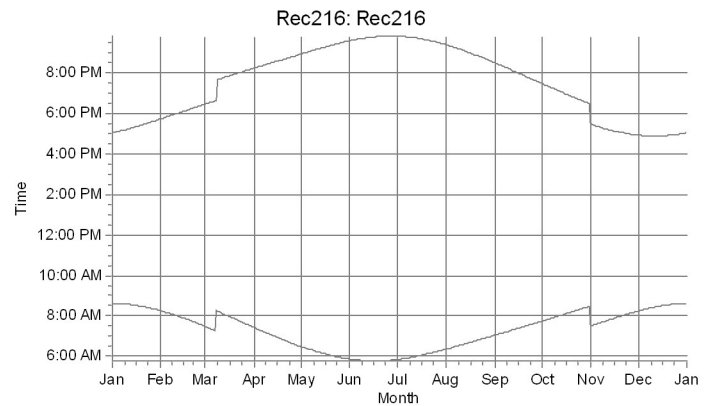
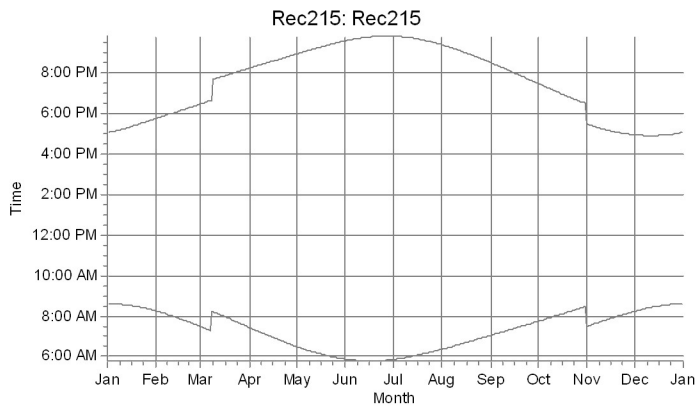
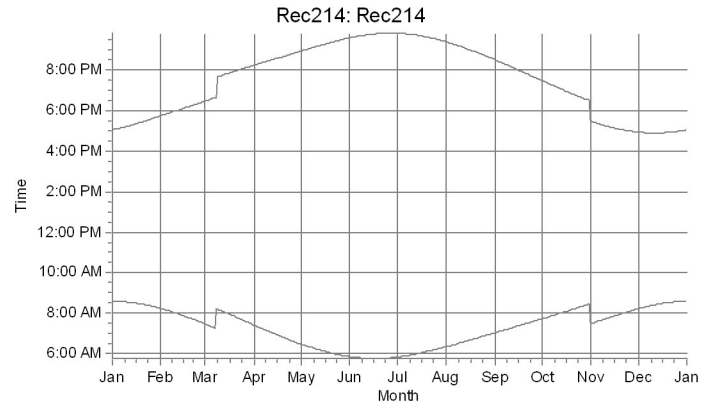
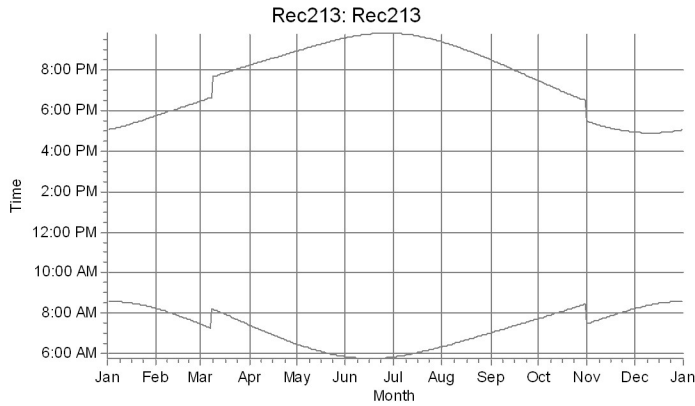
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Calculated:

3/10/2026 11:30 AM/4.2.285

SHADOW - Calendar, graphical

Calculation: Shadow Calculation



WTGs

D51: D51

Project:

Prairie_Wind

Description:

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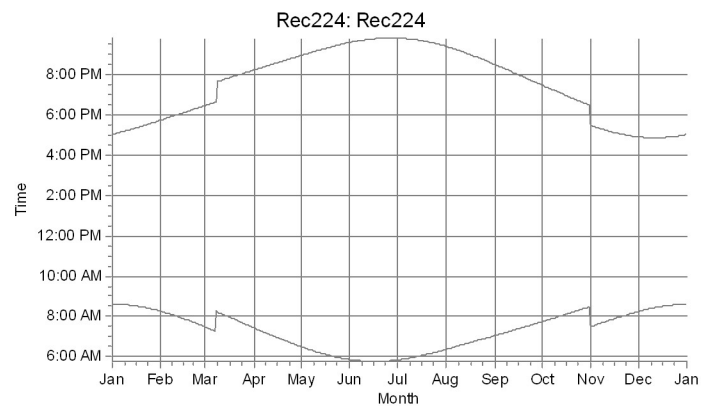
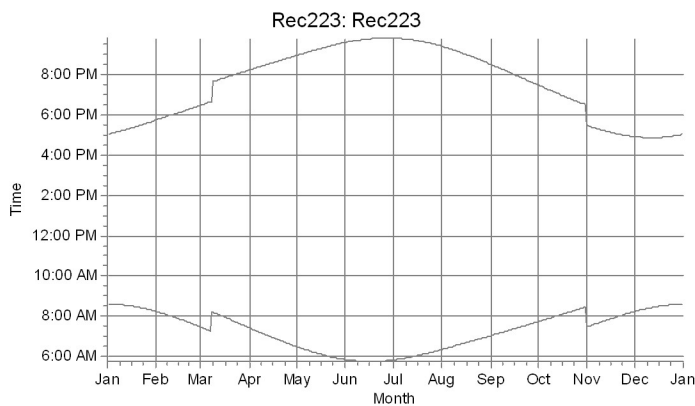
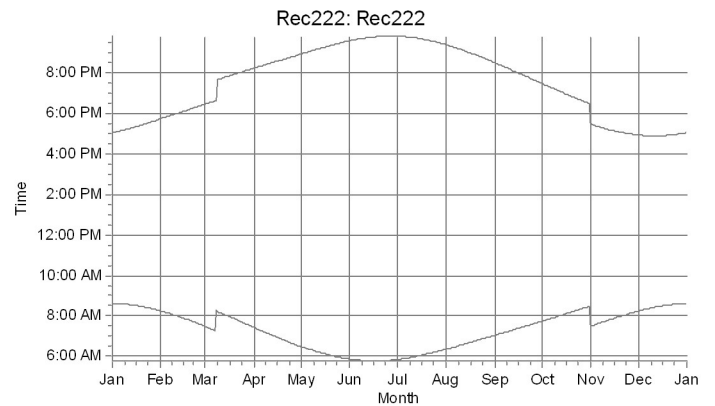
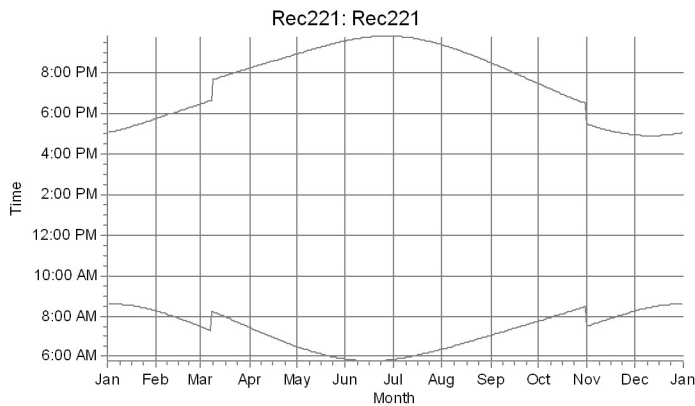
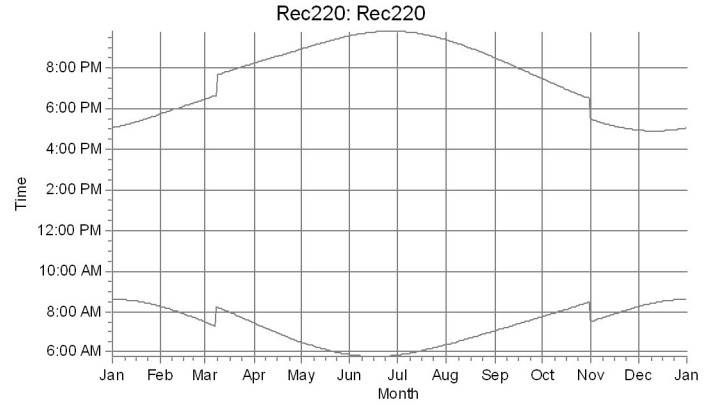
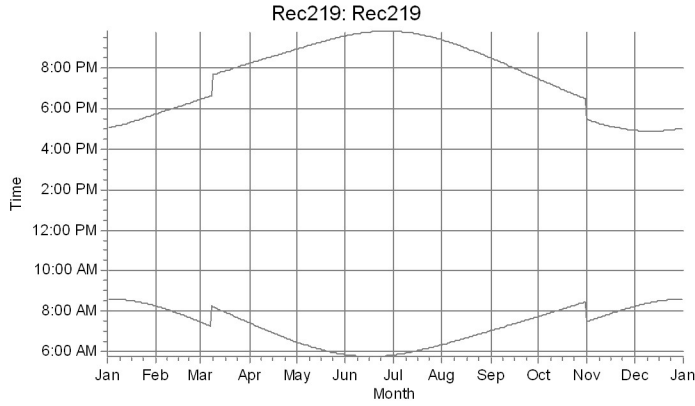
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Calculated:

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SHADOW - Calendar, graphical

Calculation: Shadow Calculation



WTGs

Project:

Prairie_Wind

Description:

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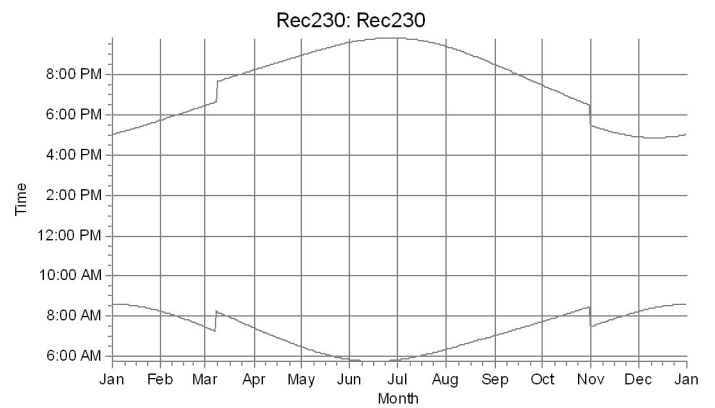
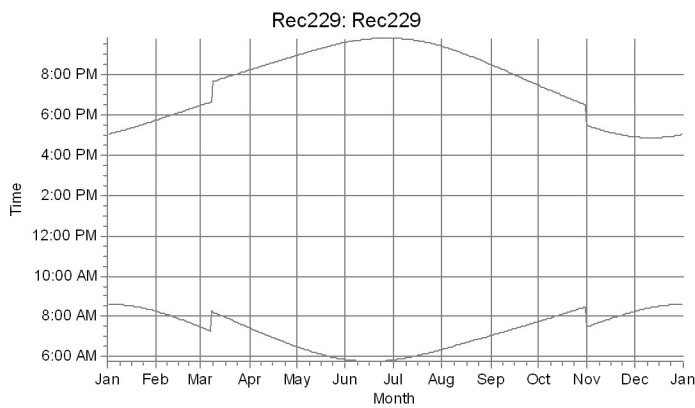
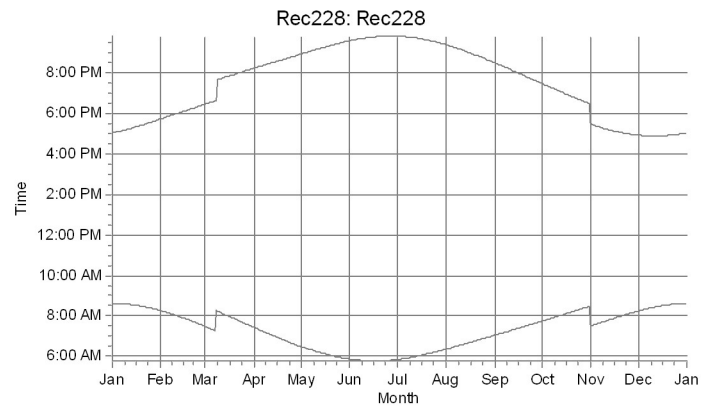
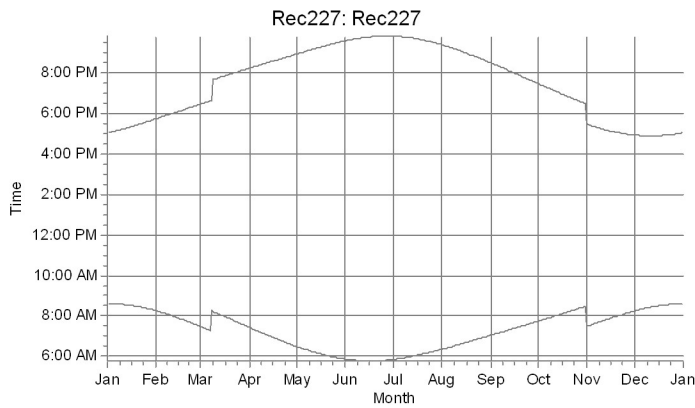
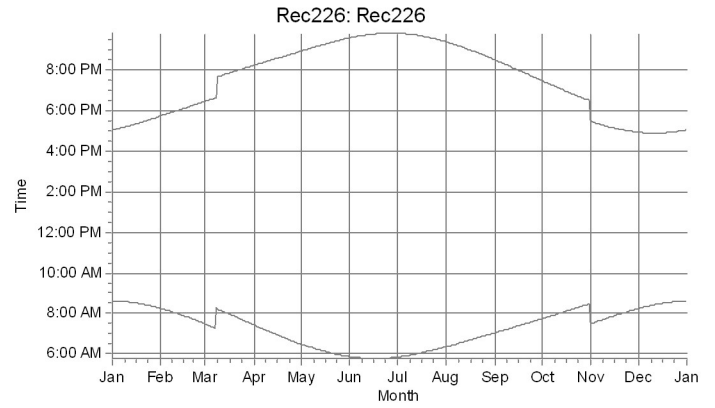
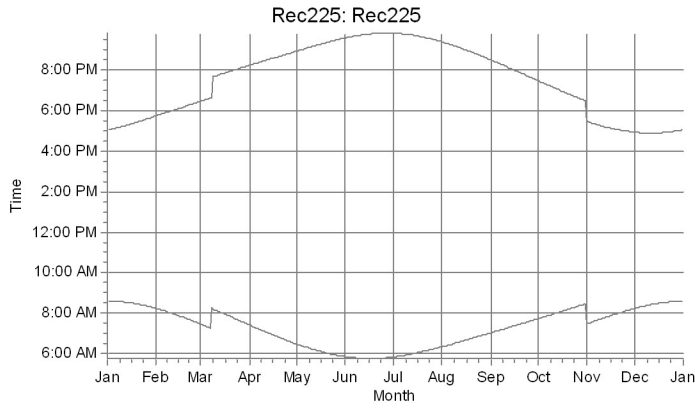
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SHADOW - Calendar, graphical

Calculation: Shadow Calculation



WTGs

Project:

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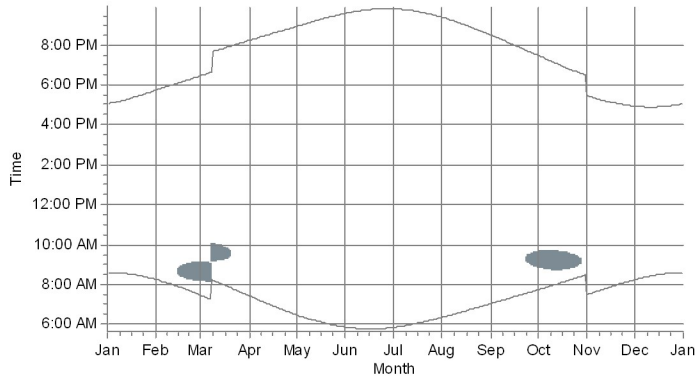
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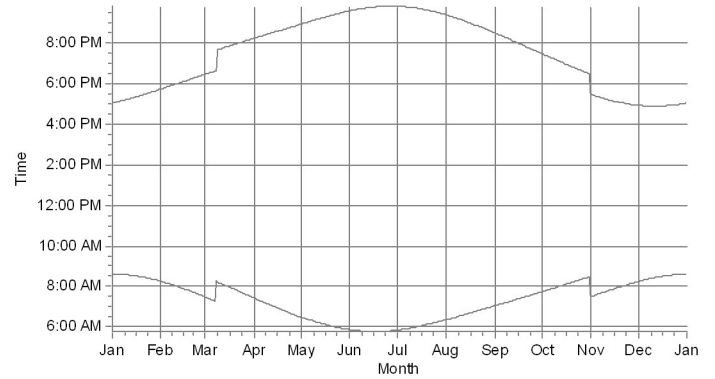
SHADOW - Calendar, graphical

Calculation: Shadow Calculation

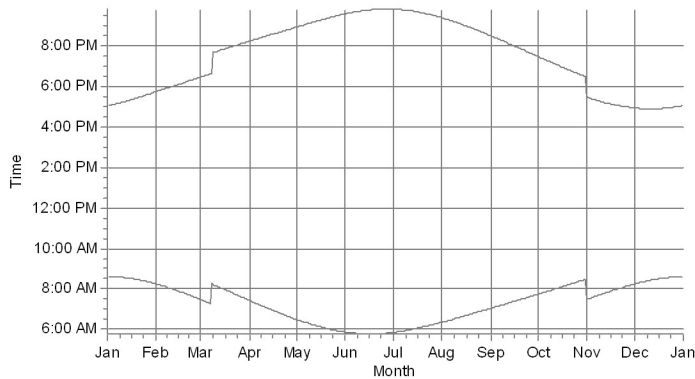
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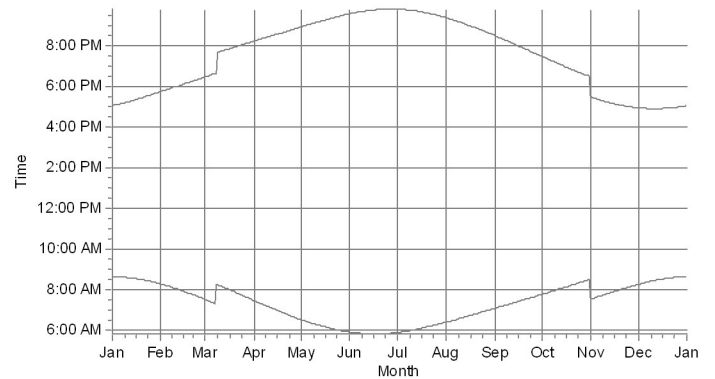
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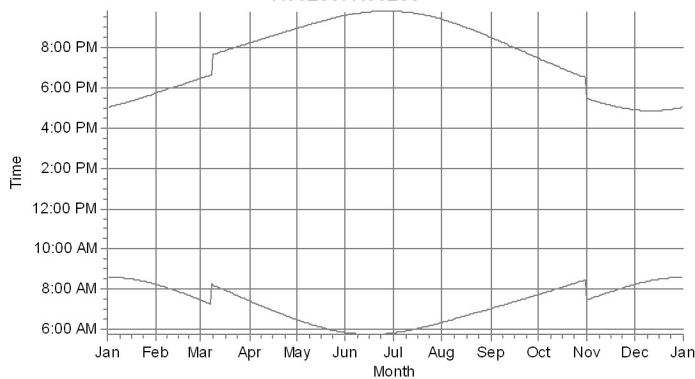
Rec233: Rec233



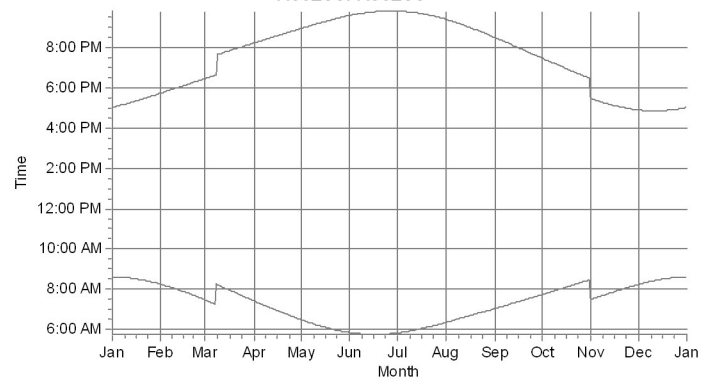
Rec234: Rec234



Rec235: Rec235



Rec236: Rec236



WTGs

B24: B24

Project:

Prairie_Wind

Description:

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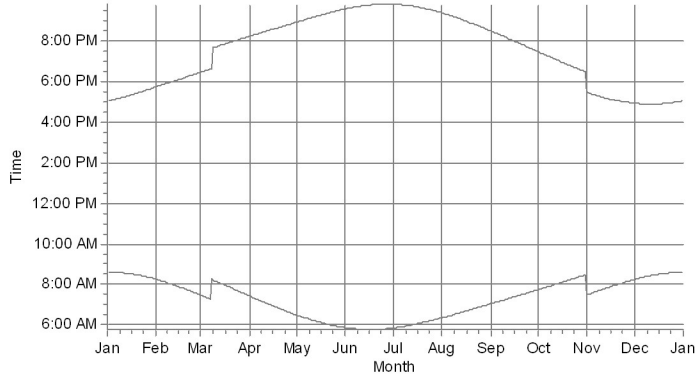
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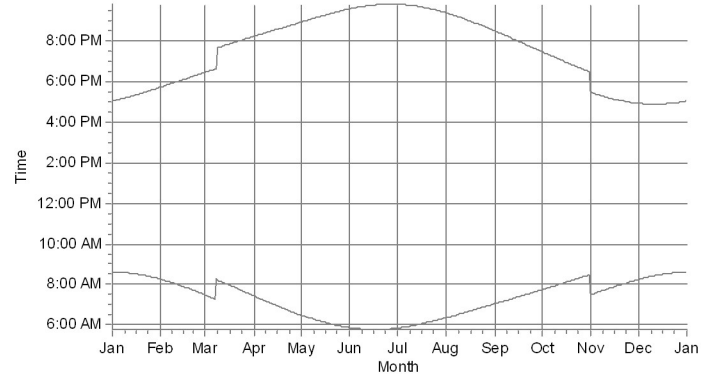
SHADOW - Calendar, graphical

Calculation: Shadow Calculation

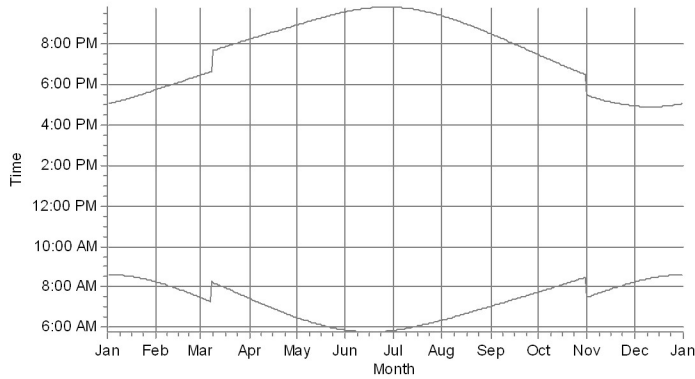
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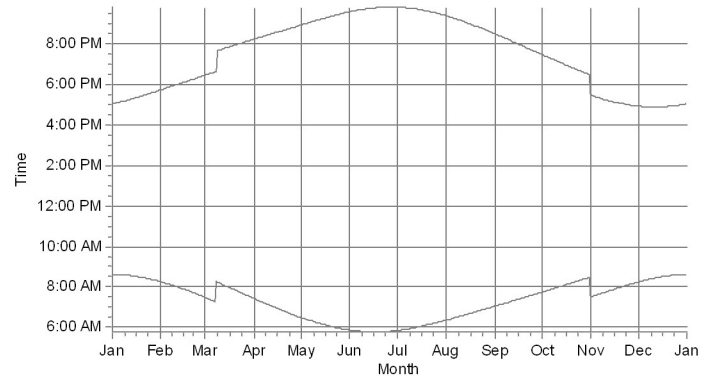
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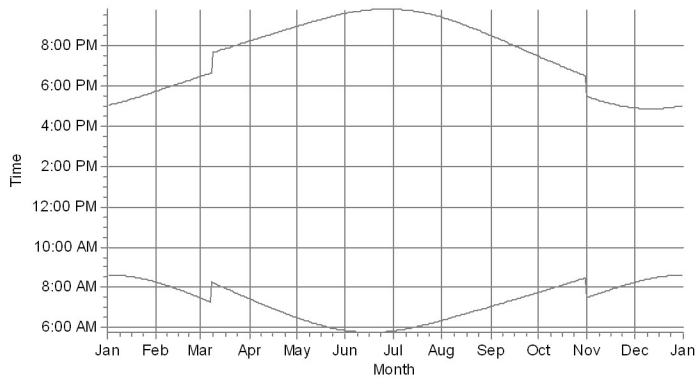
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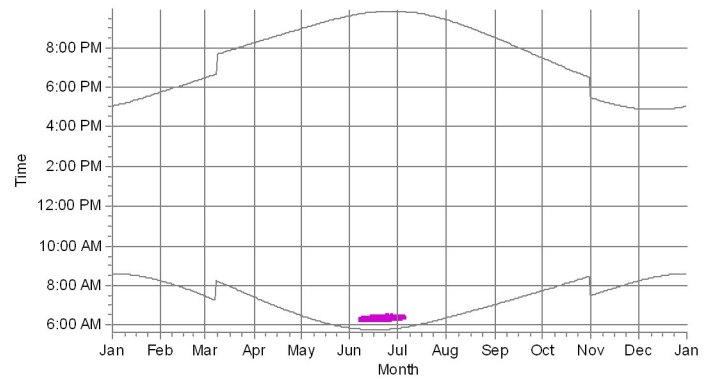
Rec240: Rec240



Rec241: Rec241



Rec242: Rec242



WTGs

E66: E66

Project:

Prairie_Wind

Description:

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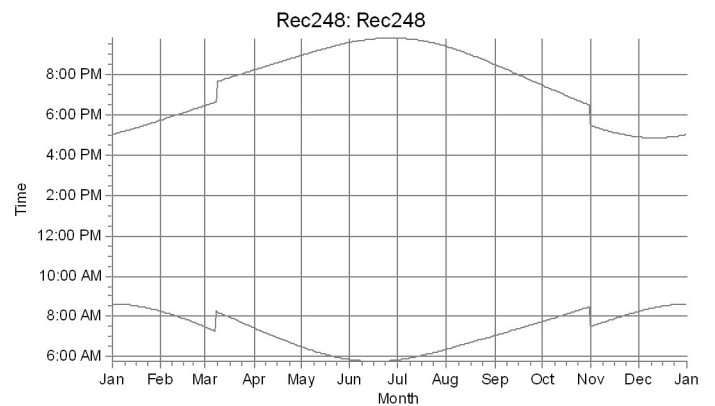
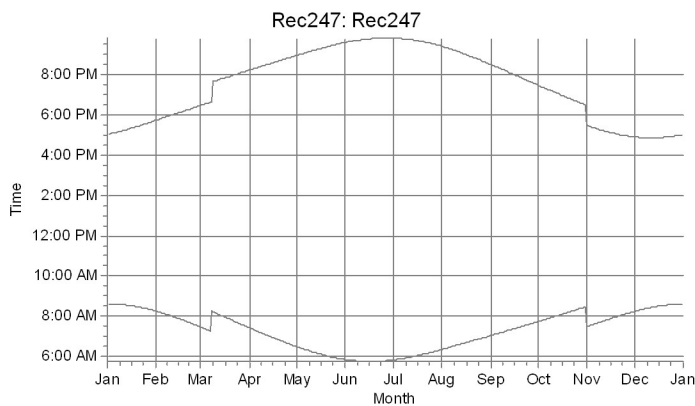
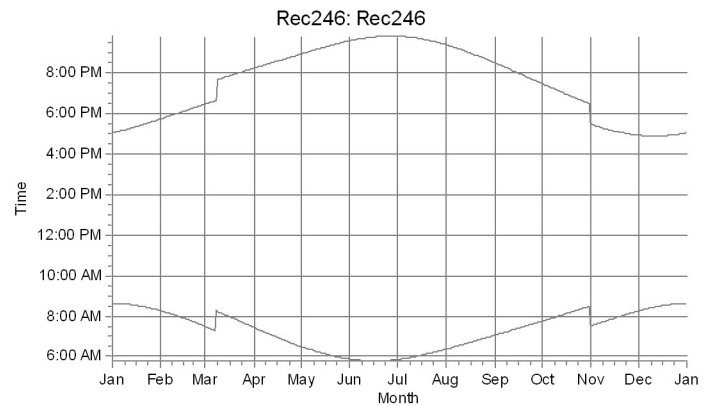
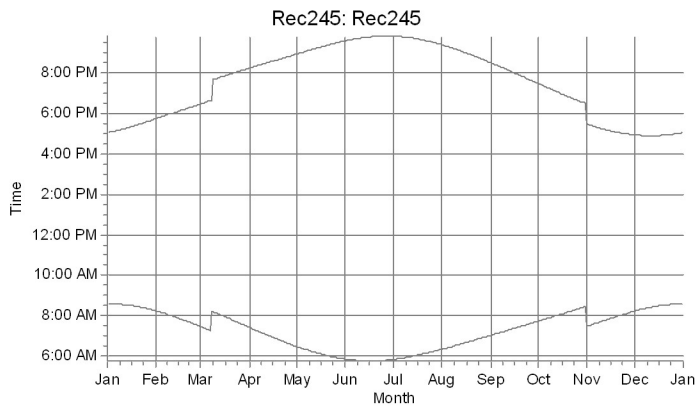
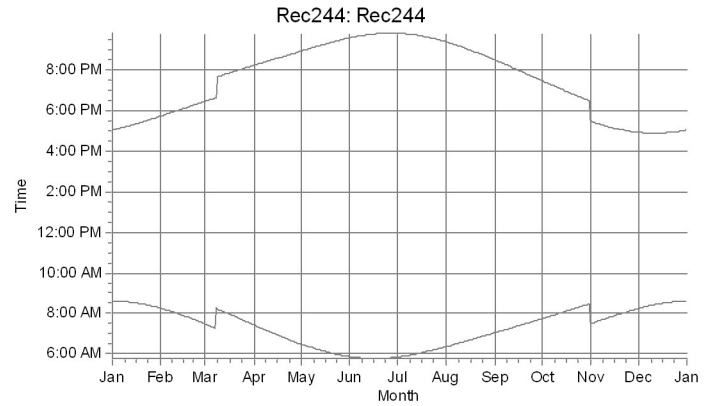
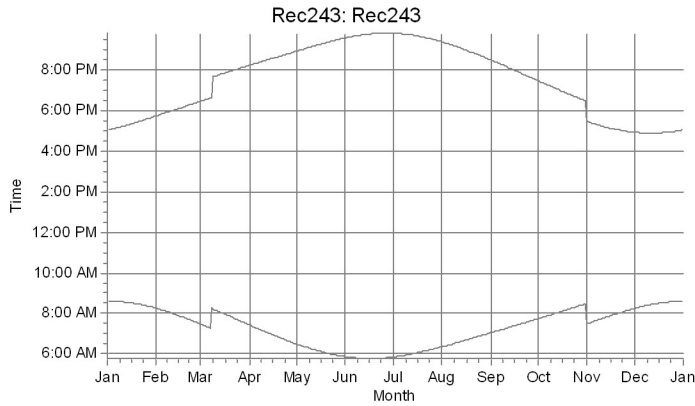
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SHADOW - Calendar, graphical

Calculation: Shadow Calculation



WTGs

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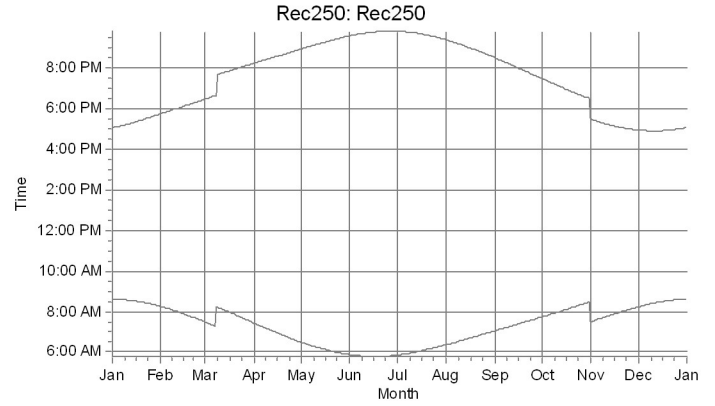
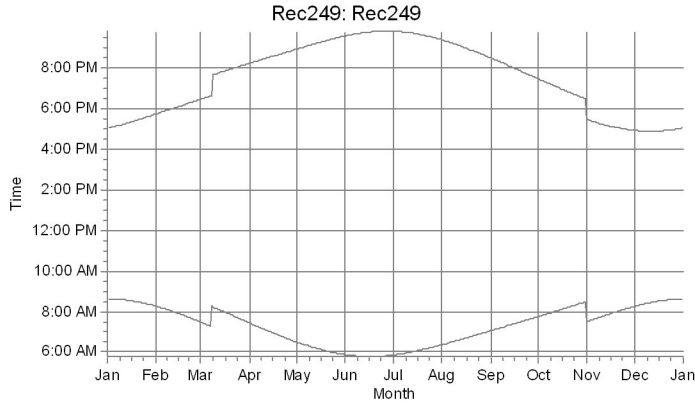
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SHADOW - Calendar, graphical

Calculation: Shadow Calculation



WTGs



Appendix C

Appendix C - FAA Wind Turbine Blade Extension Filing

Turbine Name	Latitude	Longitude	Previous ASN	New ASN	OE Status
A01	47.938689	-101.240733	2009-WTE-5684-OE	2026-WTE-998-OE	Studying
A02	47.939101	-101.231916	2009-WTE-5685-OE	2026-WTE-999-OE	Studying
A03	47.937081	-101.225948	2009-WTE-5686-OE	2026-WTE-1000-OE	Studying
A04	47.945138	-101.238766	2009-WTE-5687-OE	2026-WTE-1073-OE	Studying
A06	47.951177	-101.236328	2009-WTE-5688-OE	2026-WTE-1001-OE	Studying
A07	47.944238	-101.226806	2009-WTE-5689-OE	2026-WTE-1002-OE	Studying
A08	47.953471	-101.234068	2009-WTE-5690-OE	2026-WTE-1003-OE	Studying
A09	47.955582	-101.243633	2009-WTE-5691-OE	2026-WTE-1075-OE	Studying
A10	47.957797	-101.248125	2009-WTE-5692-OE	2026-WTE-1004-OE	Studying
A11	47.955578	-101.254983	2009-WTE-5693-OE	2026-WTE-1005-OE	Studying
A12	47.965762	-101.256324	2009-WTE-5694-OE	2026-WTE-1006-OE	Studying
A13	47.974891	-101.264111	2009-WTE-5695-OE	2026-WTE-1007-OE	Studying
A14	47.984921	-101.262499	2009-WTE-5696-OE	2026-WTE-1008-OE	Studying
A15	47.98472	-101.253316	2009-WTE-5697-OE	2026-WTE-1009-OE	Studying
A16	47.990704	-101.257387	2009-WTE-5698-OE	2026-WTE-1010-OE	Studying
B17	47.989177	-101.249422	2009-WTE-5699-OE	2026-WTE-1011-OE	Studying
B18	47.94832	-101.257321	2009-WTE-5700-OE	2026-WTE-1012-OE	Studying
B19	47.956983	-101.265149	2009-WTE-5701-OE	2026-WTE-1013-OE	Studying
B20	47.964963	-101.272904	2009-WTE-5702-OE	2026-WTE-1014-OE	Studying
B21	47.967828	-101.282634	2009-WTE-5703-OE	2026-WTE-1015-OE	Studying
B22	47.97226	-101.281878	2009-WTE-5704-OE	2026-WTE-1016-OE	Studying
B23	47.975596	-101.275122	2009-WTE-5705-OE	2026-WTE-1017-OE	Studying
B24	47.988561	-101.286331	2009-WTE-5706-OE	2026-WTE-1018-OE	Studying
B25	47.99227	-101.284521	2009-WTE-5707-OE	2026-WTE-1019-OE	Studying
B26	47.975575	-101.29034	2009-WTE-5708-OE	2026-WTE-1020-OE	Studying
B27	47.976535	-101.30647	2009-WTE-5709-OE	2026-WTE-1021-OE	Studying
B28	47.971558	-101.323605	2009-WTE-5710-OE	2026-WTE-1022-OE	Studying
B29	47.973603	-101.332756	2009-WTE-5711-OE	2026-WTE-1023-OE	Studying
B30	47.96579	-101.334144	2009-WTE-5712-OE	2026-WTE-1024-OE	Studying
B31	47.959304	-101.327772	2009-WTE-5713-OE	2026-WTE-1025-OE	Studying
B32	47.959519	-101.34354	2009-WTE-5714-OE	2026-WTE-1026-OE	Studying
C33	47.96043	-101.347755	2009-WTE-5715-OE	2026-WTE-1027-OE	Studying
C34	47.937973	-101.25587	2009-WTE-5716-OE	2026-WTE-1028-OE	Studying
C35	47.943991	-101.256003	2009-WTE-5717-OE	2026-WTE-1029-OE	Studying
C36	47.944033	-101.267033	2009-WTE-5718-OE	2026-WTE-1030-OE	Studying
A05	47.940785	-101.268986	2009-WTE-5719-OE	2026-WTE-1031-OE	Studying
C37	47.930598	-101.261802	2009-WTE-5720-OE	2026-WTE-1032-OE	Studying
C38	47.933624	-101.269192	2009-WTE-5721-OE	2026-WTE-1033-OE	Studying
C39	47.928611	-101.291508	2009-WTE-5722-OE	2026-WTE-1076-OE	Studying

Appendix C - FAA Wind Turbine Blade Extension Filing

Turbine Name	Latitude	Longitude	Previous ASN	New ASN	OE Status
C40	47.924468	-101.286176	2009-WTE-5723-OE	2026-WTE-1034-OE	Studying
C41	47.943716	-101.288052	2009-WTE-5724-OE	2026-WTE-1035-OE	Studying
C42	47.945555	-101.298096	2009-WTE-5725-OE	2026-WTE-1036-OE	Studying
C43	47.945105	-101.303498	2009-WTE-5726-OE	2026-WTE-1077-OE	Studying
C44	47.948691	-101.284501	2009-WTE-5727-OE	2026-WTE-1037-OE	Studying
C45	47.952325	-101.275287	2009-WTE-5728-OE	2026-WTE-1038-OE	Studying
D46	47.91987	-101.274113	2009-WTE-5729-OE	2026-WTE-1039-OE	Studying
D47	47.918225	-101.278859	2009-WTE-5730-OE	2026-WTE-1074-OE	Studying
D48	47.913967	-101.274154	2009-WTE-5731-OE	2026-WTE-1040-OE	Studying
D49	47.908187	-101.281119	2009-WTE-5732-OE	2026-WTE-1041-OE	Studying
D50	47.907938	-101.296259	2009-WTE-5733-OE	2026-WTE-1042-OE	Studying
D51	47.910191	-101.308439	2009-WTE-5734-OE	2026-WTE-1043-OE	Studying
D52	47.917164	-101.312986	2009-WTE-5735-OE	2026-WTE-1044-OE	Studying
D53	47.925937	-101.303551	2009-WTE-5736-OE	2026-WTE-1045-OE	Studying
D54	47.92607	-101.310986	2009-WTE-5737-OE	2026-WTE-1046-OE	Studying
D55	47.927244	-101.317252	2009-WTE-5738-OE	2026-WTE-1047-OE	Studying
D56	47.897312	-101.301054	2009-WTE-5739-OE	2026-WTE-1048-OE	Studying
D57	47.893582	-101.309339	2009-WTE-5740-OE	2026-WTE-1049-OE	Studying
D58	47.889388	-101.301047	2009-WTE-5741-OE	2026-WTE-1050-OE	Studying
D59	47.886538	-101.317731	2009-WTE-5742-OE	2026-WTE-1051-OE	Studying
D60	47.880203	-101.290855	2009-WTE-5743-OE	2026-WTE-1052-OE	Studying
D61	47.87153	-101.28876	2009-WTE-5744-OE	2026-WTE-1053-OE	Studying
E62	47.927557	-101.24171	2009-WTE-5745-OE	2026-WTE-1054-OE	Studying
E63	47.928878	-101.230826	2009-WTE-5746-OE	2026-WTE-1055-OE	Studying
E64	47.928572	-101.2257	2009-WTE-5747-OE	2026-WTE-1056-OE	Studying
E65	47.933634	-101.230487	2009-WTE-5748-OE	2026-WTE-1057-OE	Studying
E66	47.924022	-101.241374	2009-WTE-5749-OE	2026-WTE-1058-OE	Studying
E67	47.919611	-101.234301	2009-WTE-5750-OE	2026-WTE-1059-OE	Studying
E68	47.917172	-101.224855	2009-WTE-5751-OE	2026-WTE-1060-OE	Studying
E69	47.910492	-101.236827	2009-WTE-5752-OE	2026-WTE-1061-OE	Studying
E70	47.912281	-101.225657	2009-WTE-5753-OE	2026-WTE-1062-OE	Studying
E71	47.908917	-101.239747	2009-WTE-5754-OE	2026-WTE-1063-OE	Studying
E72	47.902593	-101.243899	2009-WTE-5755-OE	2026-WTE-1064-OE	Studying
E73	47.904125	-101.254332	2009-WTE-5756-OE	2026-WTE-1065-OE	Studying
E74	47.893532	-101.251227	2009-WTE-5757-OE	2026-WTE-1066-OE	Studying
E75	47.900598	-101.231462	2009-WTE-5758-OE	2026-WTE-1067-OE	Studying
E76	47.897876	-101.220364	2009-WTE-5759-OE	2026-WTE-1068-OE	Studying
E77	47.897156	-101.210948	2009-WTE-5760-OE	2026-WTE-1069-OE	Studying

Appendix D

BASIN ELECTRIC POWER COOPERATIVE: CLASS II AND CLASS III CULTURAL RESOURCE INVENTORIES FOR THE PRAIRIEWINDS TURBINE REPOWERING PROJECT IN WARD COUNTY, NORTH DAKOTA

Location:
Ward County

Author:
Amy C. Bleier

Principal Investigators:
Alex Atkinson, Archaeologist



Emily Wren, Architectural Historian



Metcalf Archaeological Consultants, a Terracon Company
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Prepared for:
Basin Electric Power Cooperative
Bismarck, North Dakota

Metcalf Project No. LK256000

April 2026



Metcalf
ARCHAEOLOGICAL CONSULTANTS
A  Terracon Company

Locational information for archaeological and historic sites is protected under North Dakota Century Code § 55-02-07.

All reports (Class I, II, III, Testing, or Data Recovery) or any loose maps that will be distributed outside the agency or client should not contain site locational information. Site locational information includes the location of a site on a topographic map or aerial photographs, the location of a site in tables, such as Township, Range, and Section, or photograph of sites. It is acceptable to mention the Smithsonian Trinomial designation (e.g., 32EM0123) as this does not contain locational information, other than state and county.

Executive Summary

Basin Electric Power Cooperative (Basin) plans to upgrade 80 existing wind turbines in Ward County, North Dakota. In order to increase the lifespan of the turbines, the repower will upgrade the existing General Electric (GE) 1.5-77 wind turbine generators (WTGs) to GE 1.6-97 WTGs utilizing the GE Vernova repowering kits. The height of the new towers will be 421.6 feet.

The repower is a state level project; therefore, the North Dakota Public Service Commission (PSC) has statutory authority over the project. The PSC is responsible for ensuring the project complies with *North Dakota Century Code 55-03 - Protection of Prehistoric Sites and Deposits* - and *North Dakota Administrative Code 40-02-02 - Permit for Cultural Resource Investigation*.

Basin contracted Metcalf Archaeological Consultants, a Terracon Company (Metcalf), to conduct the Class III cultural resource inventory and the Class II reconnaissance survey. The Class III pedestrian inventory includes new roads and areas around turbines which were not previously surveyed. The architectural Class II survey comprises all areas within a two-mile buffer of the turbines. That survey documents buildings and structures 45 years of age or older which are potentially eligible or *eligible* for inclusion in the State Historic Sites Registry (SHSR). Metcalf undertook the Class III inventory between October 29 and November 22, 2025, under the supervision of Principal Investigator Alex Atkinson and the Class II survey from February 11-16, 2026, under the supervision of Principal Investigator Emily Wren. The Class III inventory totals 286.43 acres.

The Class II reconnaissance survey comprises all areas within a two-mile buffer around the turbines. Metcalf recommends four newly identified architectural resources, 32WDx857 (farmhouse), 32WDx858 (missile silo), 32WDx858 (farmhouse), and 32WDx859 (missile silo), as potentially eligible for inclusion in the SHSR. Twelve previously recorded historical cultural resources remain unevaluated for inclusion in the SHSR. Seventy-four cultural resources were noted but not recorded on North Dakota Cultural Resource Survey (NDCRS) forms.

Six previously unrecorded cultural resources were identified, and 19 previously documented cultural resources were revisited and site forms updated during the Class III inventory. Table E1 lists cultural resources by type, description, and Metcalf's recommendations for SHSR eligibility and resource management. Two cultural resources, 32WD1549 and 32WD1637, are recommended *eligible* for inclusion in the SHSR. Inventory data are insufficient to recommend eligibility for inclusion in the SHSR for 21 cultural resources. Two cultural resources, 32WD1660 and 32WDx664, are recommended *not eligible* for inclusion in the SHSR and no further work is advised for these for this project. Avoidance is recommended for 22 resources. No avoidance is recommended for 32WD1549, the Black Hills-Lake Metigoshe Trail. If avoidance is not feasible, the eligibility of each cultural resource should be assessed and, if determined *eligible*, avoided or mitigated before construction impacts the resource.

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All reports (Class I, II, III, Testing, or Data Recovery) or any loose maps that will be distributed outside the agency or client should not contain site locational information. Site locational information includes the location of a site on a topographic map or aerial photographs, the location of a site in tables, such as Township, Range, and Section, or photograph of sites. It is acceptable to mention the Smithsonian Trinomial designation (e.g., 32EM0123) as this does not contain locational information, other than state and county.

Appendix E

**PWND Wind Turbine Repowering Project
Ward County, North Dakota**

Natural Resources Inventory Report



Prepared for:

Basin Electric Power Cooperative

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Bismarck, North Dakota 58503

Prepared by:

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REPORT REFERENCE

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ACRONYMS AND ABBREVIATIONS

Acronym	Definition
ac	acre
BEPC	Basin Electric Power Cooperative
DASK	Dakota Skipper
DBH	diameter at breast height
ESA	Endangered Species Act
Final Rule	<i>Endangered and Threatened Wildlife and Plants; Endangered Species Status for Northern Long-Eared Bats; Final Rule</i>
ft	foot
IPaC	Information for Planning and Consultation
m	meter
mi	mile
N	north
NLEB	Northern long-eared bat
NRCS	Natural Resources Conservation Service
PLSS	Public Land Survey System
Project	PWND Wind Turbine Repowering Project
R	Range
ROW	Right-of-way
Sec.	Section
Survey Area	Survey Area (812.4 acres)
T	Township
USACE	US Army Corps of Engineers
USEPA	US Environmental Protection Agency
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey
W	west
WEST	Western EcoSystems Technology, Inc.
WMD	Wetland Management District
WNS	White-nose syndrome

1.0 INTRODUCTION

Basin Electric Power Cooperative, Inc. (BEPC), owns and operates the PWND Wind Farm located in Ward County, North Dakota. The PWND Wind Farm became operational in 2009 and consists of 80 General Electric (GE) 1.5-megawatt (MW) SLE wind turbines with a total generating capacity of 120 MW. BEPC is proposing the PWND Wind Turbine Repowering Project (Project), to upgrade their existing turbines.

The repower would include upgrading the existing GE 1.5-MW 77-meter (m) wind turbines to GE 1.6-MW 97-m wind turbines using GE Vernova Repowering Kits. Each Kit includes three new 97-m blades, and installing the Kit upgrades the hub, main shaft, main bearing assembly and gearbox, and refurbishes the generator of each wind turbine. The existing foundations and towers would remain in place. Repowering would increase the maximum output capacity of each wind turbine from 1.5 MW to 1.6 MW and generate a more efficient power curve, providing increased MW at lower wind speeds when compared to non-repowered turbines. Temporary road improvements will include increased turning radii on some access roads (Figure 1). Operations and maintenance (O&M) activities for the repowered Project will remain consistent with those of the existing Project.

Western EcoSystems Technology, Inc. (WEST), was retained by BEPC to provide natural resources inventory services, which include a desktop evaluation of habitat for federally listed species and a desktop eagle nest survey. Table 1 identifies the Public Land Survey System Sections within which the Project is located.

Table 1. PLSS description of the Project Location.

Section	Township Range	
6, 7, 17, 18	151 N	82W
1, 2, 3, 4, 5, 9, 10, 11, 12, 13, 14, 15, 16, 20, 22, 27	151 N	83W
30, 31	152N	82W
3, 4, 10, 11, 13, 14, 15, 16, 17, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 33, 34, 35, 36	152 N	83W
31	153N	82W
36	153N	83W

The Survey Area, displayed on Figure 2, contains 812.4 acres. The Survey Area is variable in size, but in general it is a 50-foot buffer of the road centerline and a 300-foot buffer around turbines. The Temporary Disturbance Area for the Project, which contains 10.35 ac is displayed in Appendix A.

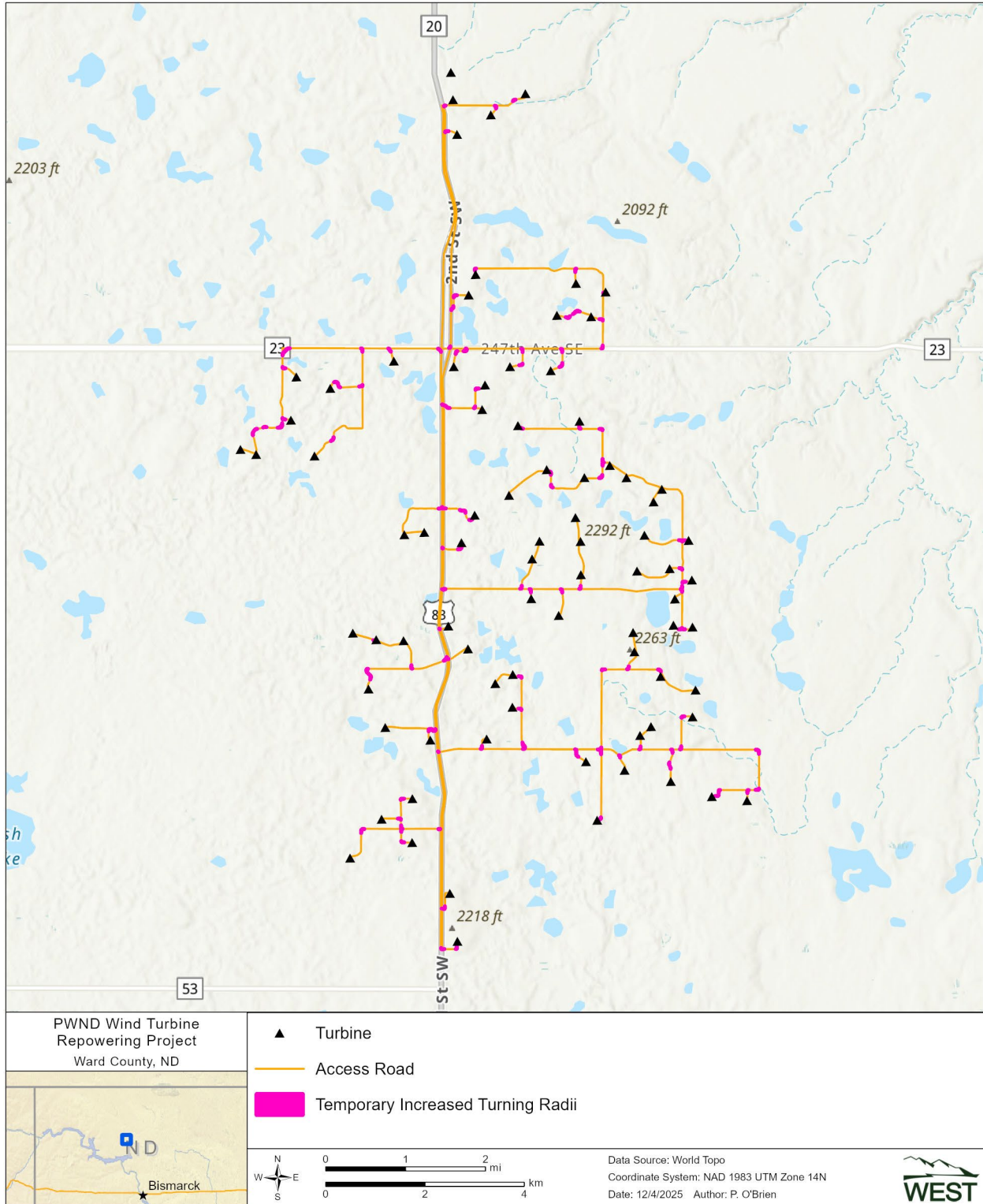


Figure 1. PWND Wind Turbine Repowering Project infrastructure layout and proposed increased turning radii for repowering.

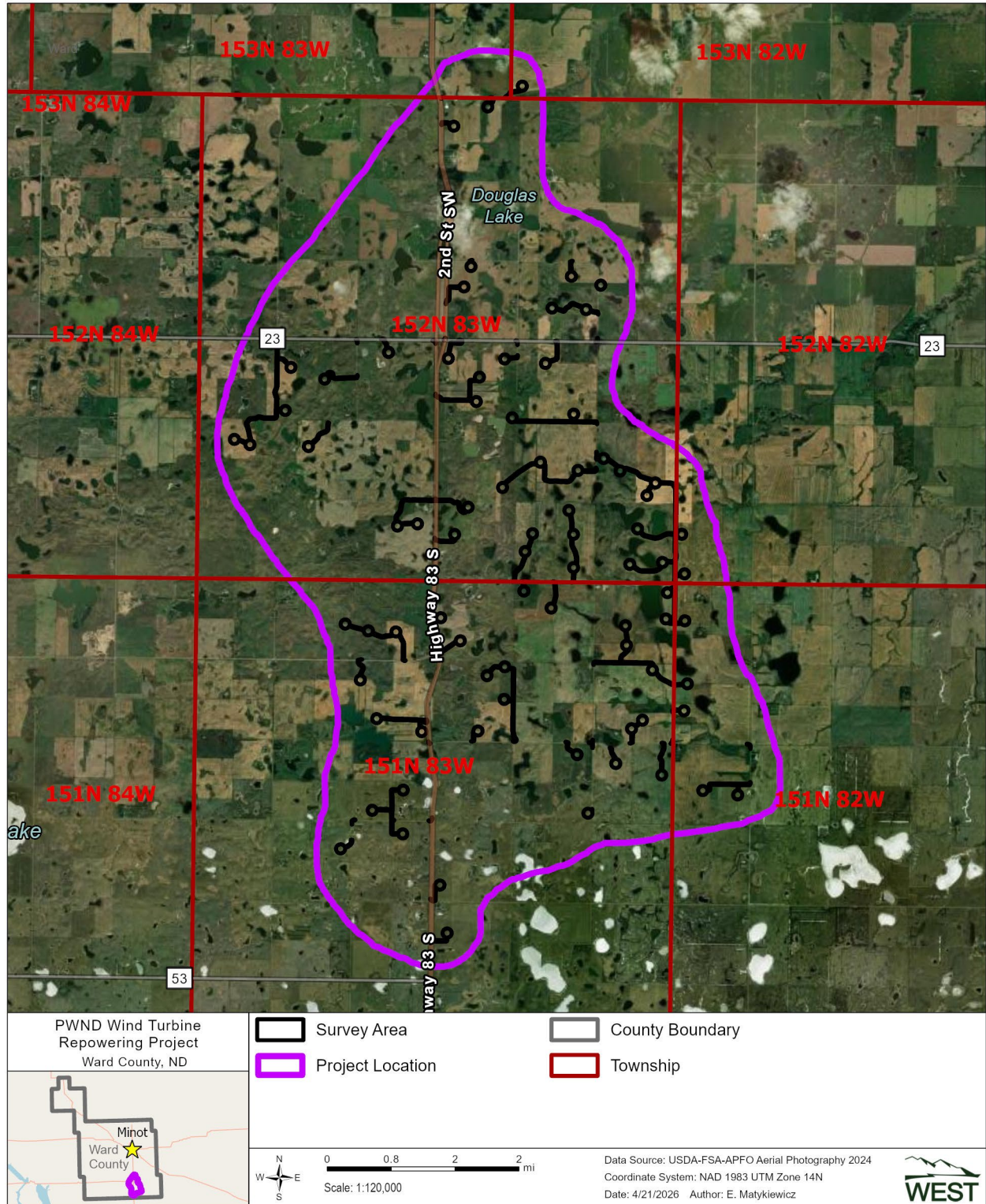


Figure 2. Detailed view of the Project location and the Survey Area.

2.0 PROCEDURES

2.1 Federally Listed Wildlife Species Evaluation

The USFWS Information for Planning Consultation (IPaC) site was used to identify federally listed species within the Survey Area. The review also included the USFWS designated critical habitat for threatened and endangered species geospatial data (2025a), along with known range, reported occurrences, and habitat needs for each species. Table 2 identifies the federally listed species with the potential for occurrence within the Survey Area.

Table 2. Federally listed threatened and endangered species.

Common Name	Scientific Name	Status
Northern long-eared bat	<i>Myotis septentrionalis</i>	Endangered
Whooping crane	<i>Grus americana</i>	Endangered
Dakota skipper	<i>Hesperia dacotae</i>	Threatened
Piping plover	<i>Charadrius melodus</i>	Threatened
Red knot (rufa)	<i>Calidris canutus rufa</i>	Threatened
Monarch butterfly	<i>Danaus plexippus</i>	Proposed Threatened
Western regal fritillary	<i>Argynnis idalia occidentalis</i>	Proposed Threatened
Suckley's cuckoo bumble bee	<i>Bombus suckleyi</i>	Proposed Endangered

Source: US Fish and Wildlife Service 2026.

3.0 RESULTS

3.1 Threatened and Endangered Species Habitat Assessment

Threatened and endangered species that have been documented and/or that have the potential to occur within the Survey Area listed in Table 2 along with designated critical habitat (USFWS 2025a, 2026). Threatened and endangered species information gathered from the review is documented below in the species discussions.

3.1.1 Northern Long-eared Bat

The northern long-eared bat (*Myotis septentrionalis*) is a forest-dwelling mammal. The home range of the northern long-eared bat (NLEB) is approximately 150 ac, including a summer and winter habitat. In the summer, NLEB roost under bark or in crevices of trees, preferring to roost in tall trees with greater than three inches (in.; eight centimeters [cm]) DBH, and under the exfoliating bark of dead or dying trees. In the winter, NLEB hibernate in caves and mines. The NLEB prefers foraging in edge habitats and forests comprising trees with a diversity of life stages (USFWS 2014a).

Occurrences of the NLEB are uncertain in North Dakota, although two NLEB were documented during the 2024 North Dakota Bat Survey in McKenzie County (Edens, et al., 2025). White-nose syndrome (WNS) currently remains the predominant threat to the NLEB. North Dakota is included in the current extent of WNS zone per the Endangered and Threatened Wildlife and Plants; Endangered Species Status for Northern Long-Eared Bat; Final Rule (Final Rule; 88 Federal Register [FR] 4908 [January 26, 2023]; USFWS 2023b). With the Final Rule reclassifying the NLEB as endangered, incidental take of the species is prohibited. To avoid incidental take, it is recommended to conduct tree clearing activities between November 1 to April 14 when bats have either migrated or are hibernating in underground caves. If tree removal occurs during the active season for bats, acoustic surveys will be conducted to determine if NLEB are present. If NLEB are detected, the USFWS will be consulted prior to removal.

No NLEB hibernacula have been identified in North Dakota (North Dakota Game and Fish Department [NDGFD] 2025a). In North Dakota, most northern long-eared bat occurrences have been documented in the forested habitat of the Turtle Mountains in Bottineau and Rolette counties and along the riparian corridors of the Little Missouri and Missouri Rivers. (NDGFD 2025a). The nearest documented report of the species is over 120 mi west of the Survey Area, at a survey location approximately 20 mi southwest of Williston, North Dakota. Documented in 2024, this was the first documented occurrence of the northern long-eared bat in North Dakota in the last five years (Edens et al. 2025).

Potential northern long-eared bat roosting and foraging habitat in the Survey Area is limited, accounting for less than 0.2% of the Survey Area and consists of trees associated with homestead shelterbelts and small patches of forest (NLCD 2024). These areas are small and fragmented on the landscape and, therefore, provide limited, low-quality roosting habitat for northern long-eared bats.

To reduce the potential for impacts to roosting bats, no tree clearing will occur. Habitat degradation from potential pollutants and sedimentation will be avoided or minimized with erosion control and spill prevention measures. The Project's stormwater pollution prevention plan (SWPPP) will be implemented during construction to avoid or minimize impacts to foraging habitat and drinking water from hazardous materials and dust.

3.1.2 Whooping Crane

The primary nesting area for the whooping crane (*Grus americana*) is in Canada's Wood Buffalo National Park. Aransas National Wildlife Refuge in Texas is the primary wintering area for whooping cranes. In the spring and fall, the cranes migrate primarily along the Central Flyway. During the migration, whooping cranes make numerous stops, roosting in relatively large, shallow marshes and feeding and loafing in harvested grain fields. The primary threats to whooping cranes are power lines, illegal hunting, and habitat loss (USFWS 2023c).

The whooping crane is federally listed and has the potential to occur in all counties of North Dakota. The Project is located about 500 mi north of the nearest designated critical habitat, which is situated along the Platte River (43 FR 20938 [May 15, 1978]). The Project occurs within the 75% band of the migration corridor (Figure 4); therefore, occasional observations of adult and subadult whooping cranes may occur within the Survey Area during spring and fall migration. A field survey conducted November 11, 2025, documented 16.31 acres of potentially suitable stopover habitat, including freshwater emergent wetlands and freshwater ponds within the Survey Area (WEST 2025). No whooping crane observations have been documented in the Survey Area; however, the closest confirmed sighting to the Survey Area was of one adult crane in 1989, 0.25 mi south of the Survey Area in Sec. 27, T151N, R83W (Figure 4).

Impacts to whooping cranes from repowering construction are expected to be insignificant. While areas of potentially suitable habitat are present in the Survey Area, none of these areas will be removed during Project repowering construction.

Pearse et al. (2021) describes a 5-kilometer (km) Zone of Influence (ZOI) surrounding utility-scale wind turbines, within which whooping cranes select habitat less than expected; i.e., whooping cranes tended to avoid wind turbines by five km. Whooping cranes may avoid otherwise suitable stopover habitat within the ZOI, resulting in an assumed loss of suitable stopover habitat in this area. Given that avoidance behavior would already be expected to occur within five km of the existing Project turbines, no additional assumed loss is anticipated from repowering the Project.

Additionally, since the Survey Area does not extend past the 5-km ZOI, no impacts to whooping cranes are expected from O&M noise, fugitive dust, light, and/or changes in water quality.

If whooping cranes are sighted during Project construction or O&M activities, work within a 1-mi radius will cease until the cranes have left the area and the Project team will notify the USFWS of the sighting. The typical migration seasons include April to May for spring migration and September to October for fall migration; however, the conservation measure would apply year-round.

3.1.1 Dakota Skipper

The Dakota skipper (*Hesperia dacotae*), a prairie obligate species, requires nectar-producing native flowers and native grasses. Historically, Dakota skippers (DASK) have been associated with relatively low, wet, prairie-dominated, high-quality, tall grass prairie habitat (Type A habitat). Researchers have found that DASK also use upland mixed grass prairie that is relatively dry and includes ridges and hillsides (Type B habitat; USFWS 2013a). These habitats often have small inclusions of areas with species more commonly typified with tall grass prairie. Larvae require grass components of mixed-grass prairie that include bluestem grasses (*Andropogon* spp.) and needlegrasses, while adults require nectar sources; therefore, suitable prairie must include nectar-producing forbs. These forbs may include purple coneflower (*Echinacea purpurea*), blue bells (*Campanula rotundifolia*), blanket flower (*Gaillardia aristata*), wood lily (*Lilium philadelphicum*), or other species that are in bloom during the adult life cycle of the DASK (Dana 1991). The nearest USFWS designated critical habitat for the DASK is located approximately 38 mi northeast of the Project (Figure 4). The DASK is known to occur in Ward County where the Survey Area is located, and Mountrail and McHenry counties, which are adjacent to the west and east, respectively (USFWS 2018a).

The nearest record of Dakota skipper is over 26 mi from the Survey Area (iNaturalist 2025). To identify these potentially suitable habitats, a geographic information system (GIS) approach was utilized based on the Dakota Skipper Habitat Suitability Model developed by the USFWS Habitat and Population Evaluation Team (HAPET; Barnes et al. 2024). A Habitat Suitability Index threshold of equal to or greater than 50% was used to identify potentially suitable habitat within the Survey Area. The NLCD (NLCD 2024) was then used to classify any additional grassland and herbaceous land covers as dispersal habitat. Based on these definitions, the Survey Area contains 52.43 ac of potentially suitable habitat and 175.71 ac of dispersal habitat, totaling approximately 28% of the Survey Area. Due to the presence of suitable habitat, the Dakota skipper may potentially be present within the Survey Area, however anticipated impacts to suitable habitat are minimal and only anticipated within the Temporary Disturbance Area.

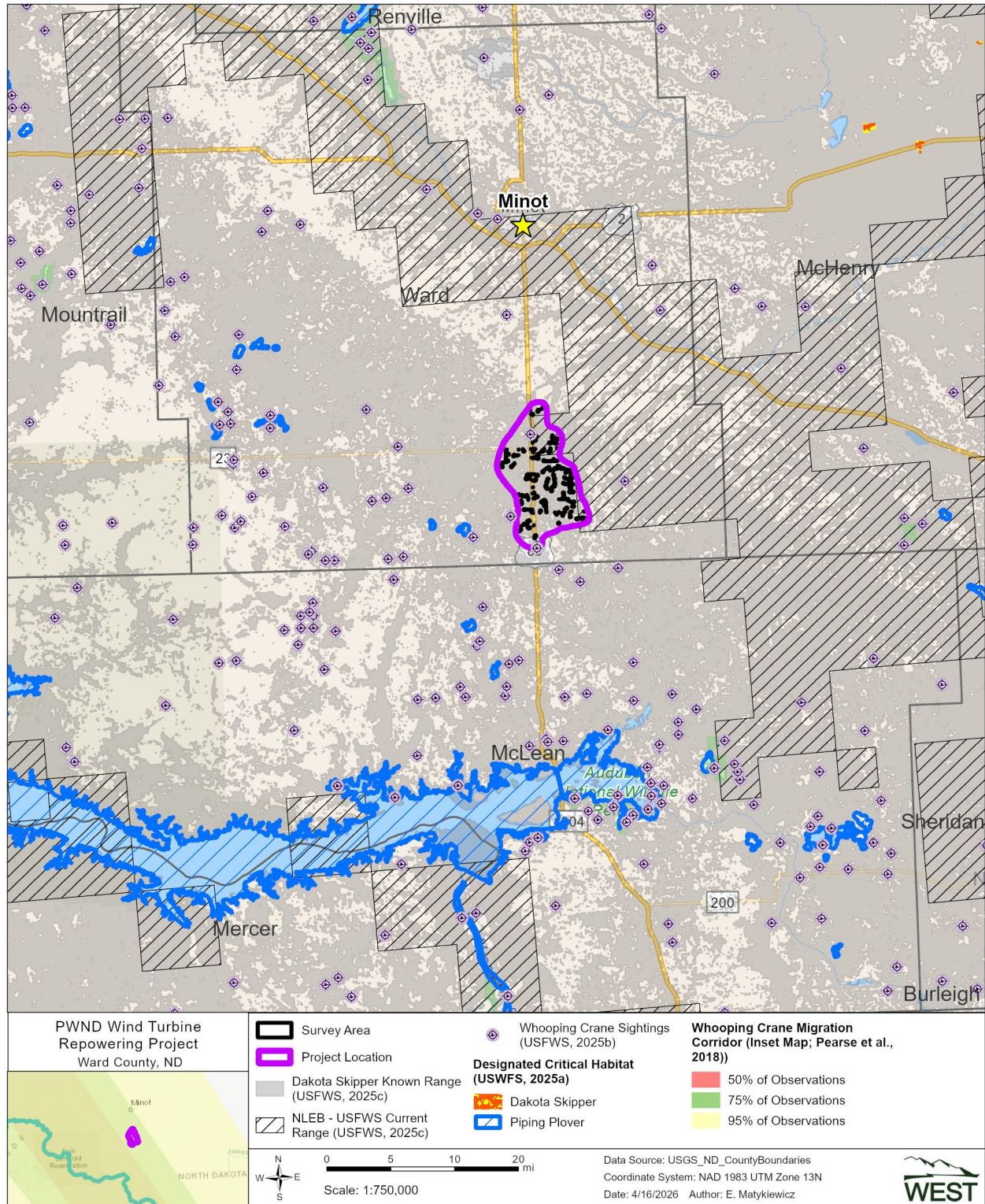


Figure 3. Known sightings, species range, and designated critical habitats in relation to the proposed Project.

The repowering construction may impact the DASK through temporary habitat loss and physical injury to all life stages (eggs, larvae, pupae, and adults). These impacts are relevant throughout the year, as the larvae overwinter in the ground, and during the critical adult flight and breeding period between mid-June and July. The overall impact is anticipated to be minimal due to the limited scope of the disturbance within the Project's Temporary Disturbance Area (Appendix A). The primary impact involves the loss of 0.42 ac of potentially suitable habitat and 2.5 ac of dispersal habitat due to ground disturbance. This loss represents less than 2 percent of both potentially suitable habitat and dispersal habitat in the Survey Area, which is considered a minimal impact to the overall available resources. As a conservation measure, BEPC will utilize approved native seed mix to restore the temporarily disturbed area immediately after construction. While it is acknowledged that the Dakota skipper is not known to reproduce on restored habitat, this measure will minimize the permanent loss of functional grassland habitat within the Survey Area and maintain connectivity.

3.1.2 Piping Plover

The piping plover (*Charadrius melodus*) is a migratory shorebird that breeds in North Dakota. Suitable nesting habitat for piping plovers includes alkaline wetlands and the shoreline of the Missouri River system; this habitat has been characterized as sparsely vegetated channel sandbars, sand and gravel beaches on islands, temporary pools on sandbars and islands, and island margins that interface with the river channel. The piping plover feeds on worms, insects, and mollusks. The decline of piping plover populations is due to the loss of habitat from river impoundment(s), as well as the degradation of habitat related to the channelization of river systems, nest predation, and human disturbance (USFWS 1985).

Critical habitat for the Northern Great Plains piping plover has been designated on alkali lakes and wetlands, the Yellowstone River, and Missouri River in North Dakota. The physical and biological features that are essential to the conservation of the species, referred to as the primary constituent elements, require special consideration for protection. These include sparsely vegetated alkaline wetlands, sand and gravel beaches on islands, temporary pools on sandbars and islands, and island margins that interface with the river channel.

The migration movements of piping plovers are largely unknown; therefore, there is potential for onsite occurrence as individuals migrate along the Missouri River, approximately 18 mi south of the Survey Area. The nearest reported piping plover, detected in 2025, was approximately 13 m north of the Project (eBird 2025). Most reported observations of piping plovers occur around Lake Audubon, about 17 mi south of the Survey Area. No piping plover observations were made during breeding bird surveys conducted over the course of two years, nor were they reported as fatalities during the two years of PCM surveys at the Project (Derby et al. 2011b, 2012). While 16.31 ac of wetlands and waterbodies are present in the Survey Area, none are classified as alkali lakes. The nearest designated critical habitat for the species is Rush Lake, located 3.85 mi west of the Survey Area.

Small areas of potentially suitable stopover habitat exist within the Survey Area; however, no impacts from the repowering construction are anticipated as no wetlands would be affected. Noise and vehicle activity during the Project repower activities may cause migratory piping plovers to divert from the Survey Area but would be unlikely to contribute to any indirect or direct effect that would result in an increase in fatalities and, therefore, would be considered insignificant.

3.1.3 *Rufa Red Knot*

The red knot (*Calidris canutus*) is a shorebird breeds in the central Canadian Arctic, with primary breeding grounds in Nunavut Territory, but some potential breeding habitat extending into the Northwest Territories (USFWS 2013b). The rufa red knot (*C. canutus rufa*) winters along the Atlantic coasts of Argentina and Chile (particularly the island of Tierra del Fuego), the north coast of Brazil, and further north into Mexico and the southeast United States (USFWS 2014b). During migration, the rufa red knot primarily follows the Atlantic coastline to and from breeding and wintering grounds. However, geolocator results from red knots wintering in Texas showed that a comparatively small population of birds migrate using the Central Flyway across the Midwestern US and may have a northern Great Plains stopover (USFWS 2013b). Rufa red knots spend two to three months annually on the breeding grounds located in northern Canada.

Red knots are specialized molluscivores, feeding primarily on hard-shelled mollusks in relatively soft, wet sand/sediment (USFWS 2014b). In addition to mollusks, red knots may feed upon shrimp, crabs, marine worms, horseshoe crab (*Limulus* spp.) eggs, and other similar invertebrates. On the breeding grounds, rufa red knots feed mostly on terrestrial invertebrates and grass shoots and seeds (USFWS 2013b).

The shoreline of the Missouri River provides stopover habitat for red knots utilizing a midcontinental migratory route during annual migrations. However, this species is rare and is not reported in North Dakota every year. Reported historical sightings since 1900 (Igl 2015) are primarily composed of single individuals or relatively small flocks; however, on rare occasions, larger flocks have been reported.

The Survey Area does not overlap rufa red knot designated critical habitat. The Survey Area does not contain potential shoreline habitat suitable for migrating rufa red knots. Small freshwater wetlands, freshwater ponds, and lakes are scattered throughout the Survey Area; however, these areas will not be impacted during the Project repowering.

Rufa red knots could occur in the Survey Area as rare migrants between May and October. The nearest reported rufa red knot, detected in 2022, was over 50 mi northwest of the Survey Area (eBird 2025) near a large wetland in the Palmero State Game Management Area. No rufa red knots were observed during two years of breeding bird surveys, nor were they reported as fatalities during two years of PCM at the Project.

3.1.4 *Monarch Butterfly*

The USFWS proposed that the monarch butterfly (*Danaus plexippus*) be listed as threatened under the Endangered Species Act (ESA; 89 FR 100662 [December 12, 2024]). The species occurs throughout the Great Plains and much of North America. Monarchs prefer open habitats with flowering plants and lay their eggs exclusively on milkweeds (*Asclepias* spp.), which the larvae feed on until pupation (U.S. Forest Service [USFS] 2021). Monarch butterflies will breed in North Dakota during the summer and migrate south to Mexico for the winter; eventually, the butterflies will make their way back to North Dakota during spring migration.

There are 11 milkweed species (NDGF 2025c); three of these can be commonly found in Ward County along roadside ditches and/or agricultural fields or open land (NDGFD 2025b). According to the 2024 NLCD land cover data within the Survey Area, 265.85 ac (33%) of the land covers

provides reproductive and foraging habitat ¹ (Electric Power Research Institute [EPRI] 2023). Given the presence of suitable reproductive and foraging habitat, monarch butterflies have the potential to occur seasonally during migration and the breeding season within the Survey Area.

The primary impact is the temporary loss of habitat due to vegetation clearing required to extend access road turning radii. This vegetation clearing may directly remove essential host plants, such as milkweed, which adult monarchs require for laying eggs and which are the sole food source for their larvae, as well as critical nectar sources relied upon by adult monarchs for energy. Widening turning radii would cause land disturbance resulting in the loss of approximately seven ac², which represents only 2.6% of the total suitable reproductive or foraging habitat within the Survey Area. These temporary impact areas will be restored and/or allowed to regenerate following construction, which could provide potentially suitable reproductive and foraging habitat soon after construction is completed.

3.1.5 Western Regal Fritillary

The USFWS proposed that the western regal fritillary (*Argynnis idalia occidentalis*) be listed as threatened under the ESA (89 FR 63888 [August 6, 2024]). The species is found in 14 states, including North Dakota, and the proposed Project is within the USFWS's known range for the species (USFWS 2025c).

The species utilizes native grasslands with tall vegetation and flowering plants. Violet species (*Viola spp.*) are the sole food source for western regal fritillary larvae and are therefore a key component of larval habitat (Federal Register 2024b).

Based on a desktop habitat analysis, the Survey Area contains approximately 183.16 ac of potentially suitable habitat, which constitutes 23% of the total Survey Area (NLCD 2024). This suitable habitat is composed of two land cover types: herbaceous, and emergent herbaceous wetlands. Several violet species (*Viola spp.*), the required host plant for the fritillary larvae, are known to occur in Ward County (USDA NRCS 2025) and are found within these identified habitat types present in the Survey Area. Given the species have been recorded in Ward County and the Survey Area contain suitable habitat, western regal fritillaries may potentially occur within the Survey Area in late spring to mid-autumn.

3.1.6 Suckley's Cuckoo Bumble Bee

The Suckley's cuckoo bumble bee (*B. suckleyi*) has been proposed for listing as endangered under the ESA (89 FR 102074 [December 17, 2024]). The western portion of the Suckley's cuckoo bumble bee range spans from the Yukon down to Arizona and east to Nebraska and Minnesota (USFWS 2024b). Probability of occupancy is estimated to have declined by 85% between 1900 and 2020 (USFWS 2024b). Current threats include loss of host species (e.g., western bumble bee [*B. occidentalis*] and Nevada bumble bee [*B. nevadensis*]), pesticides, habitat loss, climate change, and diseases introduced by non-native bee species (89 FR 102074; Montana Field Guide 2024; Washington Department of Fish and Wildlife [WDFW] 2024). The viability of Suckley's

¹ According to the EPRI Monarch Habitat Model (2023), the following NLCD land cover classes are considered high or medium suitability for milkweed: developed (high), herbaceous, emergent herbaceous wetlands, and shrub/scrub (medium). These landcover types, therefore, are considered potential reproductive habitat in this analysis. These landcover types are also considered foraging habitat.

² This approximate total of seven acres is derived from NLCD 2024 land cover data and includes 4.6 ac of developed land and 2.5 ac of herbaceous and 0.05 ac of emergent herbaceous wetlands. Land clearing is not anticipated to impact shrub/scrub land cover.

cuckoo bumble bee is dependent on its host species, many of which have declined historically and are expected to continue to do so in the future (USFWS 2024b).

Suckley's cuckoo bumble bees are obligate social parasites: they kill or subdue a host species and nest in colonies of other social bumble bees in the genus *Bombus* (USFWS 2024b). Little is known about Suckley's cuckoo bumble bees overwintering sites, but mated queens may use above and below-ground sites with mulch or other decomposing vegetation for overwintering (WDFW 2024; USFWS 2024b). Queens emerge from early April to late May shortly after their host species (Montana Field Guide 2024; USFWS 2024b). Nests for confirmed host bumble bee species (i.e., western bumble bee and the Nevada bumble bee) occur more often underground (e.g., animal burrow) than aboveground (e.g., logs, stumps; WDFW 2024; USFWS 2024b). New queens likely go into hibernation by August or September, while males may be active on the landscape until October (USFWS 2024b).

Suckley's cuckoo bumble bees are found in similar habitats to their host species: prairies, grasslands, meadows, woodlands, croplands, and urban areas (NDGFD 2018; Montana Field Guide 2024; USFWS 2024b). In general, this species is rare to encounter as a naturally less abundant social parasite without a worker caste (USFWS 2024b). Suckley's cuckoo bumble bees generally have distributions smaller than their host species and are likely in lower abundance at the edge of their host species range (USFWS 2024b). There are no known sightings of the Suckley's cuckoo bumble in North Dakota in recent years, therefore the species is unlikely to occur in the Survey Area (Richardson 2023).

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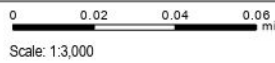
Appendix A - Natural Resource Inventory Figures



PWND Wind Turbine
Repowering Project
Ward County, ND

-  Survey Area
-  Project Location
-  Section

-  Township
-  Temporary Disturbance Area
-  50% DASK HAPET Model
(Barnes et al. 2023)



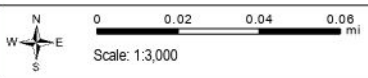
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PWND Wind Turbine
Repowering Project
Ward County, ND

- Survey Area
- Project Location
- Township
- Temporary Disturbance Area
- Section
- 50% DASK HAPET Model (Barnes et al. 2023)









Data Source: 2024 USDA FSA Aerial Photograph
Coordinate System: NAD 1983 UTM Zone 14N
Date: 4/21/2026 Author: E. Matykiewicz

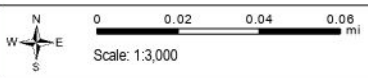




PWND Wind Turbine Repowering Project
Ward County, ND

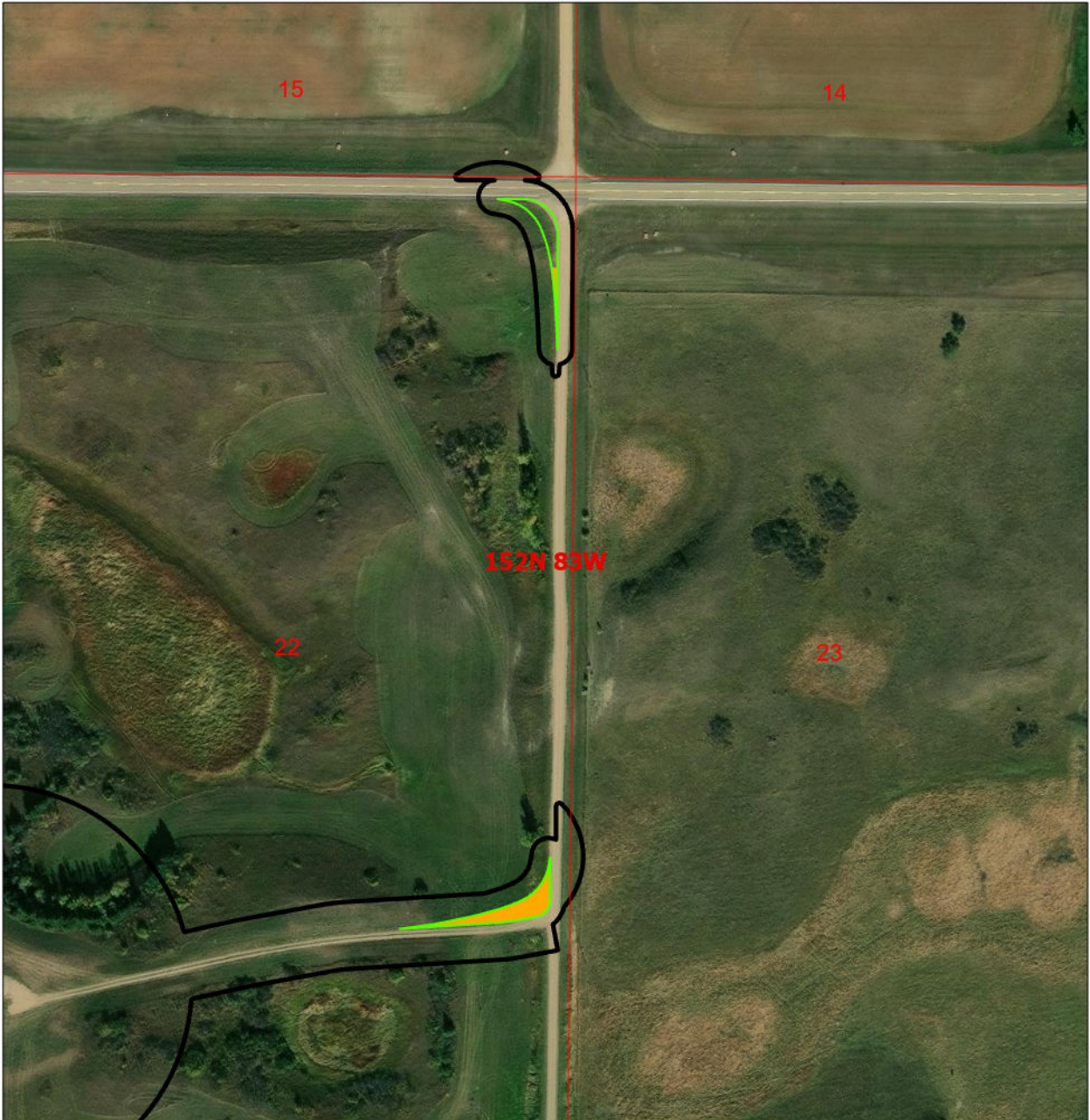
-  Survey Area
-  Project Location
-  Section

-  Township
-  Temporary Disturbance Area
-  50% DASK HAPET Model (Barnes et al. 2023)







Data Source: 2024 USDA FSA Aerial Photograph
 Coordinate System: NAD 1983 UTM Zone 14N
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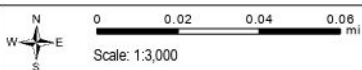




PWND Wind Turbine Repowering Project
Ward County, ND

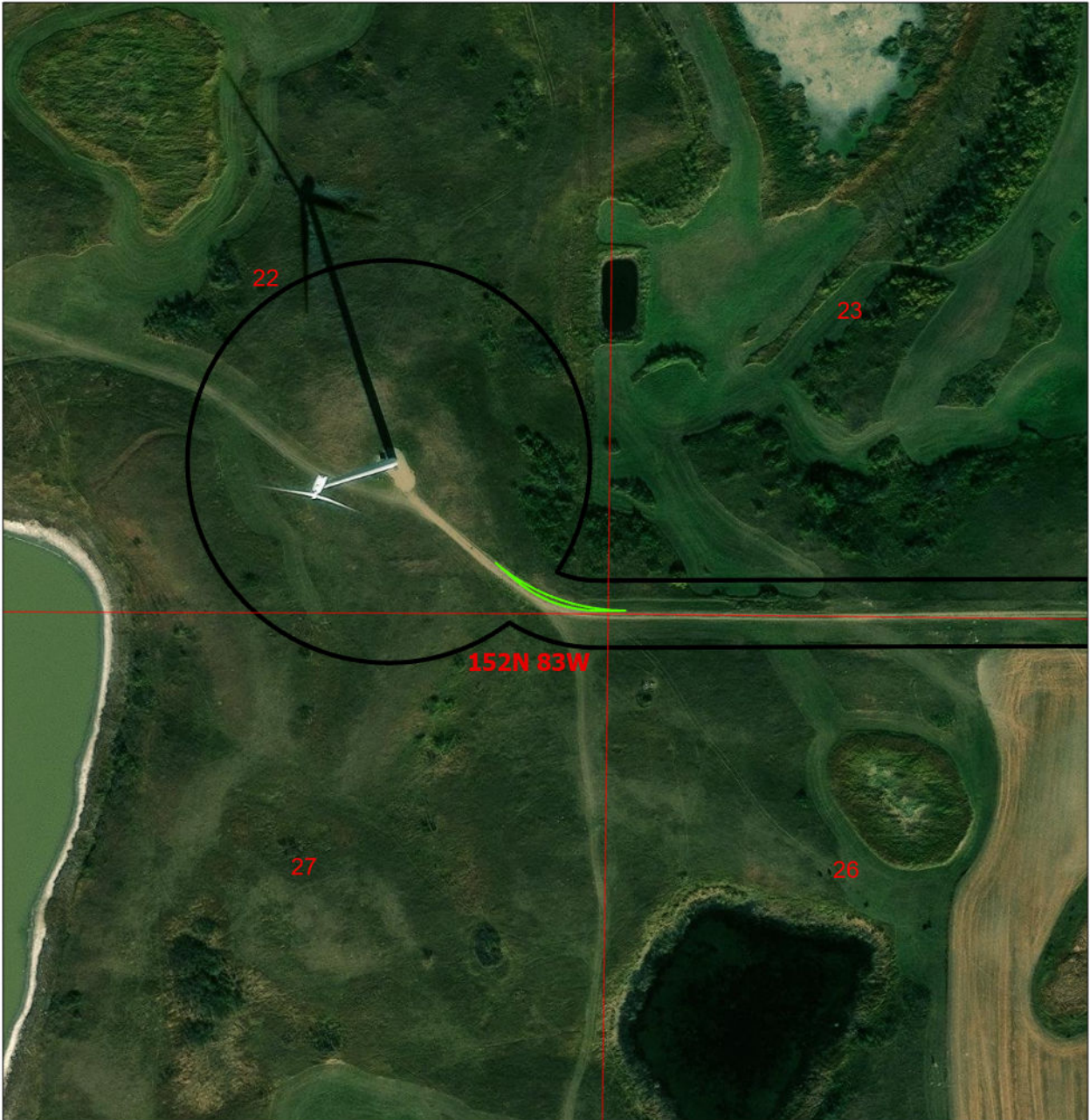
-  Survey Area
-  Project Location
-  Section

-  Township
-  Temporary Disturbance Area
-  50% DASK HAPET Model (Barnes et al. 2023)

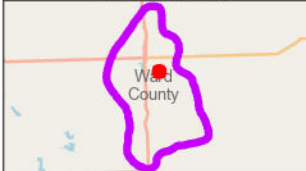


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 Date: 4/21/2026 Author: E. Matykiewicz

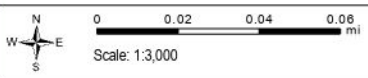




PWND Wind Turbine
Repowering Project
Ward County, ND

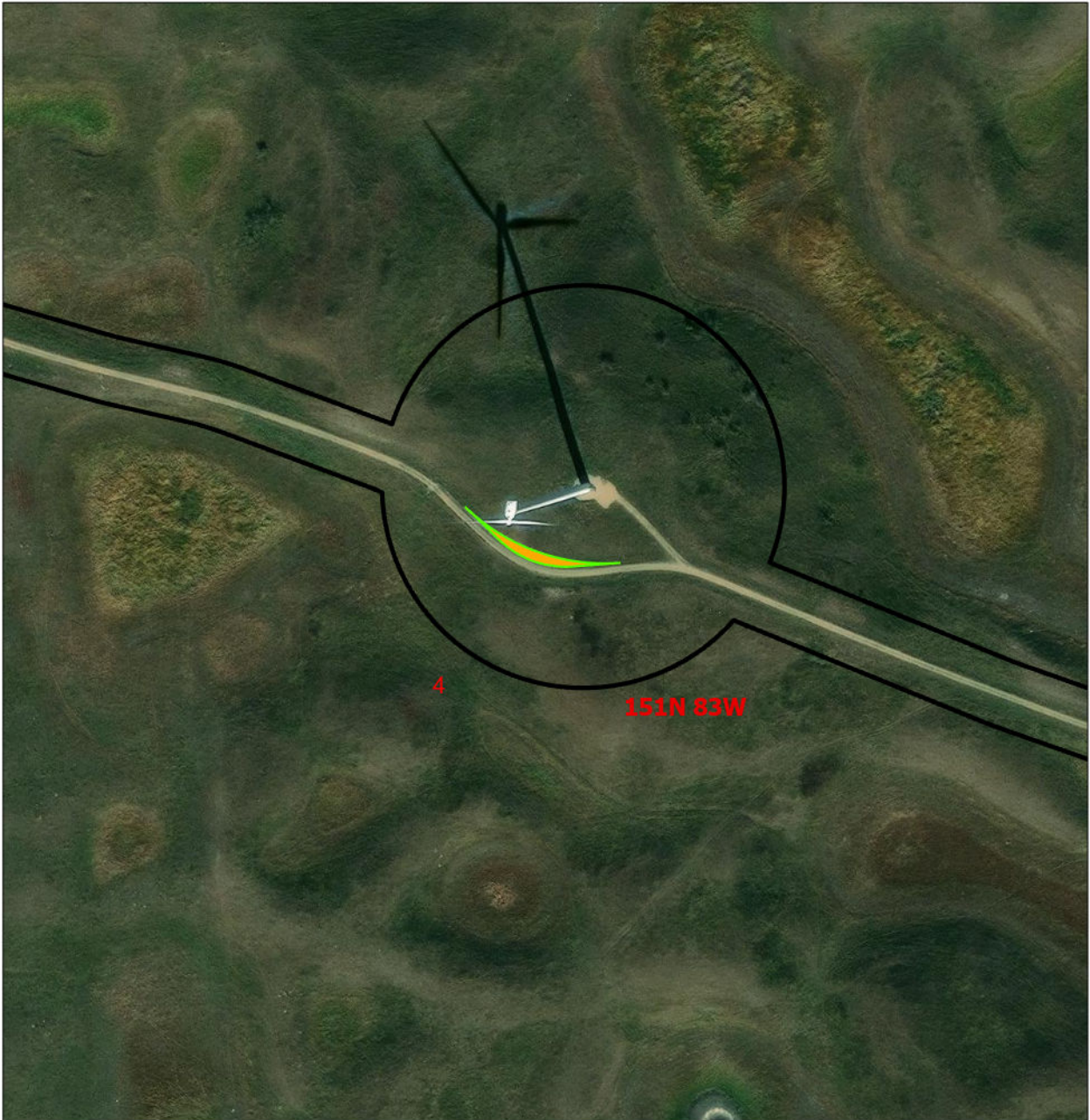


- Survey Area
- Project Location
- Township
- Temporary Disturbance Area
- Section
- 50% DASK HAPET Model (Barnes et al. 2023)






Data Source: 2024 USDA FSA Aerial Photograph
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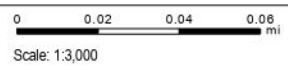


PWND Wind Turbine
Repowering Project
Ward County, ND



-  Survey Area
-  Project Location
-  Section

-  Township
-  Temporary Disturbance Area
-  50% DASK HAPET Model (Barnes et al. 2023)



Data Source: 2024 USDA FSA Aerial Photograph
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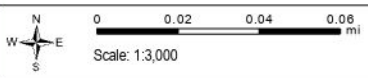




PWND Wind Turbine
Repowering Project
Ward County, ND



- Survey Area
- Project Location
- Township
- Temporary Disturbance Area
- Section
- 50% DASK HAPET Model (Barnes et al. 2023)



Data Source: 2024 USDA FSA Aerial Photograph
Coordinate System: NAD 1983 UTM Zone 14N
Date: 4/21/2026 Author: E. Matykiewicz



Appendix F

PrairieWinds 1 ND
Ward County, North Dakota

Wetland and Waterbody Mapping Report



Prepared for:

Basin Electric Power Cooperative

1717 East Interstate Avenue
Bismarck, North Dakota 58503

Prepared by:

Western EcoSystems Technology, Inc.

4007 State Street, Suite 109
Bismarck, North Dakota 58503

November 20, 2025



STUDY PARTICIPANTS

Chad Tucker	Project Manager, GIS Technician
Claire Burrows	Field Technician
Nick Hill	Field Technician

REPORT REFERENCE

Western EcoSystems Technology, Inc. (WEST). PrairieWinds 1 ND, Ward County, North Dakota: Wetland and Waterbody Mapping Report. Prepared for Basin Electric Power Cooperative. Bismarck, North Dakota. Prepared by WEST, Bismarck, North Dakota. November 20, 2025.

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Appendix B. Wetlands documented within the Survey Area
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ACRONYMS AND ABBREVIATIONS

Acronym	Definition
BEPC	Basin Electric Power Cooperative
N	north
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
PABF	Palustrine aquatic bed semi permanently flooded
PABFx	Palustrine aquatic bed semi permanently flooded excavated
PABG	Palustrine aquatic bed intermittently exposed
PEMA	Palustrine emergent temporarily flooded
PEMC	Palustrine emergent seasonally flooded
Pf	palustrine farmed wetland
PLSS	Public Land Survey System
R	Range
Sec.	Section
Survey Area	812.4 acres
T	Township
USACE	US Army Corps of Engineers
USDA	US Department of Agriculture
USEPA	US Environmental Protection Agency
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey
W	west
WEST	Western EcoSystems Technology, Inc.

1.0 INTRODUCTION

Basin Electric Power Cooperative (BEPC) is preparing to temporarily expand access roads within their PrairieWinds 1 wind farm (Project). The road expansions are necessary for equipment to access the turbines for planned upgrades. Western Ecosystems Technology, Inc. (WEST), was retained by BEPC to map wetland and waterbody boundaries within the area outlined by BEPC in an email dated October 18, 2025 (Survey Area). The Project is approximately 14.5 miles south of the city of Minot (Figure 1). Table 1 identifies the Public Land Survey System (PLSS) sections associated with the Project.

Table 1. PLSS description of the Project Location.

Section	Township Range	
6, 7, 17, 18	151 N	82W
1, 2, 3, 4, 5, 9, 10, 11, 12, 13, 14, 15, 16, 20, 22, 27	151 N	83W
30, 31	152N	82W
3, 4, 10, 11, 13, 14, 15, 16, 17, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 33, 34, 35, 36	152 N	83W
31	153N	82W
36	153N	83W

N = north, W = west.

The Survey Area, displayed on Figure 2, contains 812.4 acres. The Survey Area is variable in size, but in general it is a 50-foot buffer of the road centerline and a 300-foot buffer around turbines. WEST biologists performed the field survey on November 11-12, 2025. Geospatial field data was collected using an Android tablet paired with an EOS ARROW Lite Global Positioning System unit capable of recording data to sub-meter accuracy.

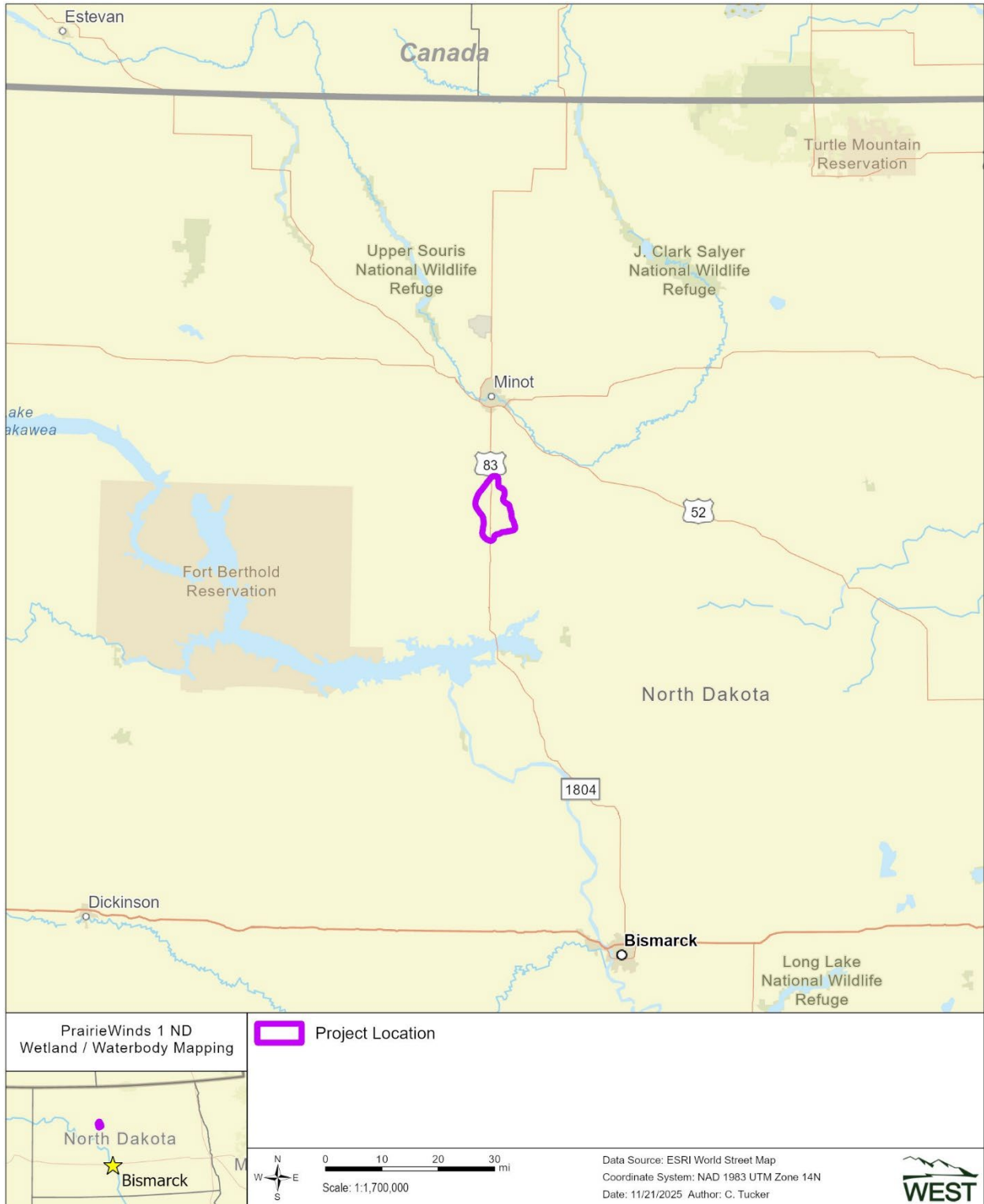


Figure 1. Location of the Project in Ward County, North Dakota.

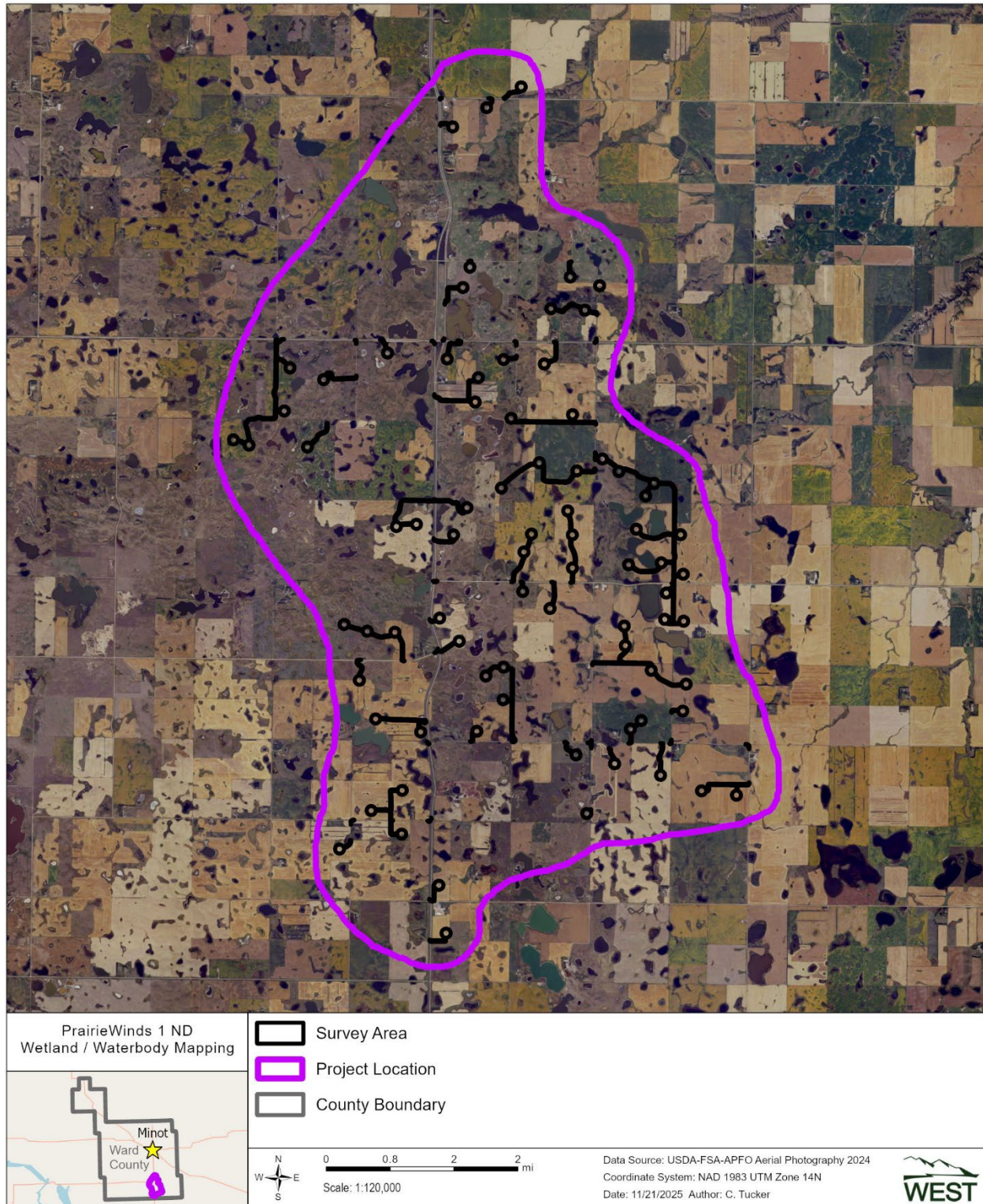


Figure 2. Detailed view of the Project location and the Survey Area.

2.0 PROCEDURES

2.1 Wetland and Waterbody Field Determination

Wetland identification utilized the presence of hydrophytic vegetation and landscape hydrology and/or topographic position. Waterbody boundaries were recorded utilizing the criteria and definitions provided by the US Army Corps of Engineers (USACE) Ordinary High Water Mark criteria and definitions provided by the US Environmental Protection Agency (USEPA) in *Draft Guidance on Identifying Waters Protected by the Clean Water Act* (USEPA and USACE 2011). Wetlands and waterbodies were field classified in accordance with guidelines set forth in the *Classification of Wetlands and Deepwater Habitats of the United States* by the Federal Geographic Data Committee (2013). The following resources were reviewed prior to the wetland field determination to aid in identifying potential wetlands within the Survey Area. Ward County National Agriculture Imagery Program aerial photographs (US Geological Survey [USGS] 2024); US Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI; USFWS NWI 2021); USGS National Hydrography Dataset (NHD; USGS 2023); and the US Department of Agriculture Natural Resources Conservation Service (USDA NRCS) digital Web Soil Survey (USDA NRCS 2025). The vegetation within the area surveyed was characterized using the hydrophytic criteria as outlined in the *National Wetland Plant List* (USACE 2022). Soil data was not collected. Upland points were used to document NWI signatures that did not exhibit wetland characteristics.

3.0 RESULTS

3.1 Wetlands

A pre-survey review of the USFWS NWI database identified 36 palustrine emergent wetlands (PEM) and 14 previously farmed (Pf) wetlands (USFWS NWI 2021). The field survey identified 114 wetlands, covering 15,199 acres combined within the Survey Area. Thirty-nine of the wetlands were field classified as palustrine emergent temporarily flooded (PEMA) and 76 were classified as palustrine emergent seasonally flooded (PEMC).

Additionally, seven Pf classified NWI signatures and one PEMA classified NWI signature were visited and found to not exhibit wetland hydrology or contain hydric vegetation. Upland points were recorded at these locations, and their attributes are listed in Table 2. Appendix A contains maps of the wetland locations and upland points. Appendix B contains the attributes for the identified wetlands. Photographs of the Survey Area are included in Appendix C.

Table 2. Upland points documented within the Survey Area

Feature	Location	Latitude	Longitude
Upland Point 0	Sec. 28, T152N, R83W	47.950115	-101.295425
Upland Point 1	Sec. 3, T152N, R83W	48.020616	-101.279867
Upland Point 2	Sec. 14, T152N, R83W	47.984801	-101.254532
Upland Point 3	Sec. 23, T152N, R83W	47.974979	-101.265309
Upland Point 4	Sec. 25, T152N, R83W	47.954355	-101.237532
Upland Point 5	Sec. 6, T151N, R82W	47.928601	-101.22452
Upland Point 6	Sec. 6, T151N, R82W	47.928773	-101.226785
Upland Point 7	Sec. 13, T151N, R83W	47.900949	-101.230825

3.2 Waterbodies

The pre-survey review of the USFWS NWI database indicated that there are 18 waterbody signatures within the Survey Area. These include 11 ponds, two lakes, and five riverine signatures. The biologists identified eight waterbody features, totaling 1.114 acres during the field survey. The waterbodies were all field classified as freshwater ponds. Table 3 lists the waterbody attributes.

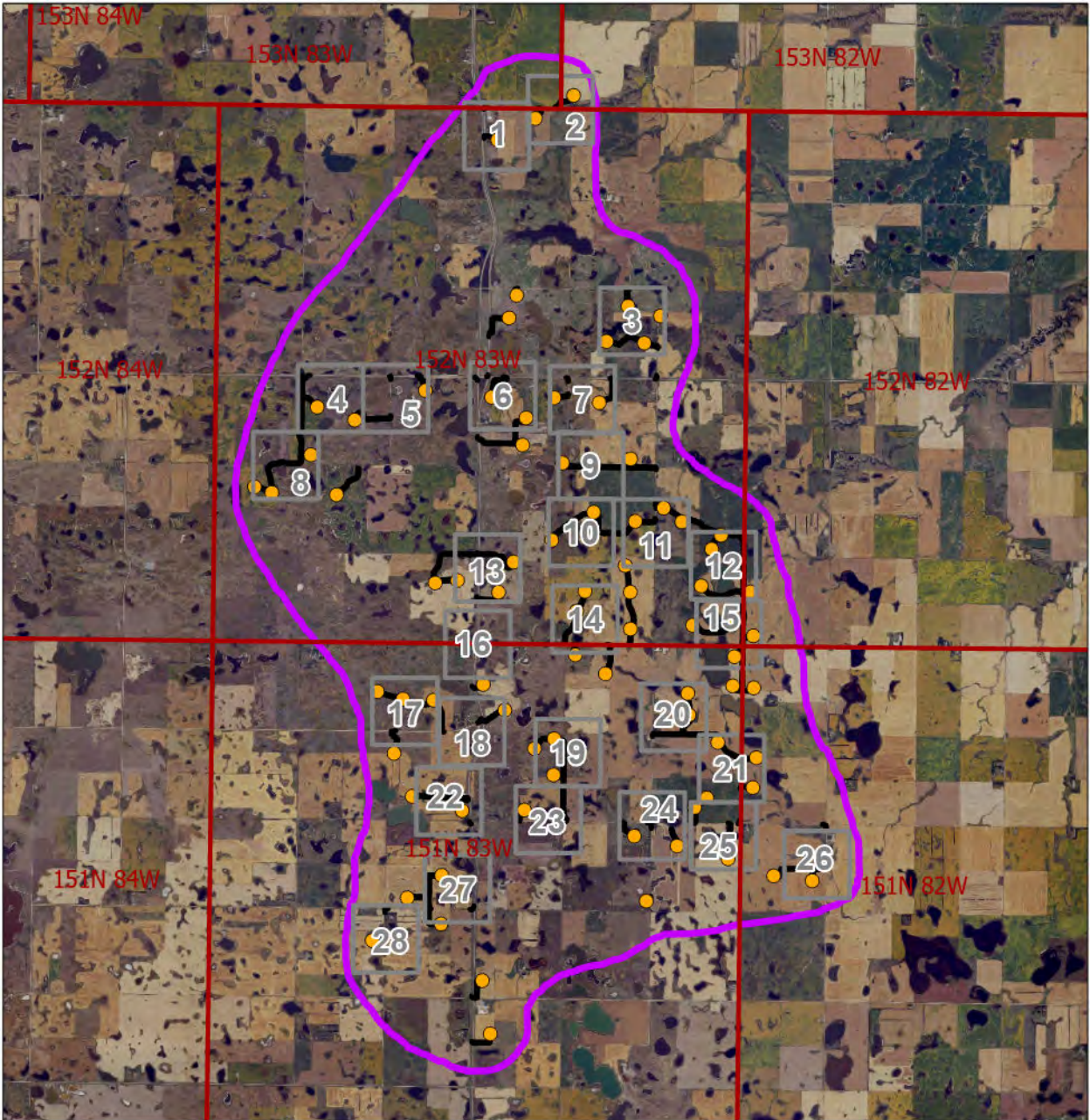
Table 3. Waterbodies documented within the Survey Area

Feature	Class	Type	PLSS	Latitude	Longitude	Acres
Waterbody 20	PABFx	Freshwater pond	Sec. 32, T152N, R83W	47.949743	-101.29715	0.024
Waterbody 27	PABF	Freshwater pond	Sec. 34, T152N, R83W	47.948902	-101.2868	0.174
Waterbody 31	PABF	Freshwater pond	Sec. 21, T152N, R83W	47.978567	-101.307867	0.037
Waterbody 37	PABF	Freshwater pond	Sec. 30, T152N, R83W	47.963571	-101.344613	0.004
Waterbody 38	PABG	Freshwater pond	Sec. 30, T152N, R83W	47.964197	-101.341852	0.080
Waterbody 41	PABF	Freshwater pond	Sec. 19, T152N, R83W	47.97828	-101.336674	0.216
Waterbody 116	PABG	Freshwater pond	Sec. 10, T151N, R83W	47.907135	-101.271566	0.426
Waterbody 122	PABF	Freshwater pond	Sec. 20, T152N, R83W	47.978392	-101.336428	0.153
Total						1.114

4.0 LITERATURE CITED

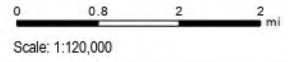
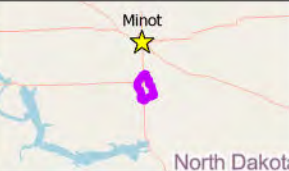
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Appendix A. Wetland / Waterbody Maps



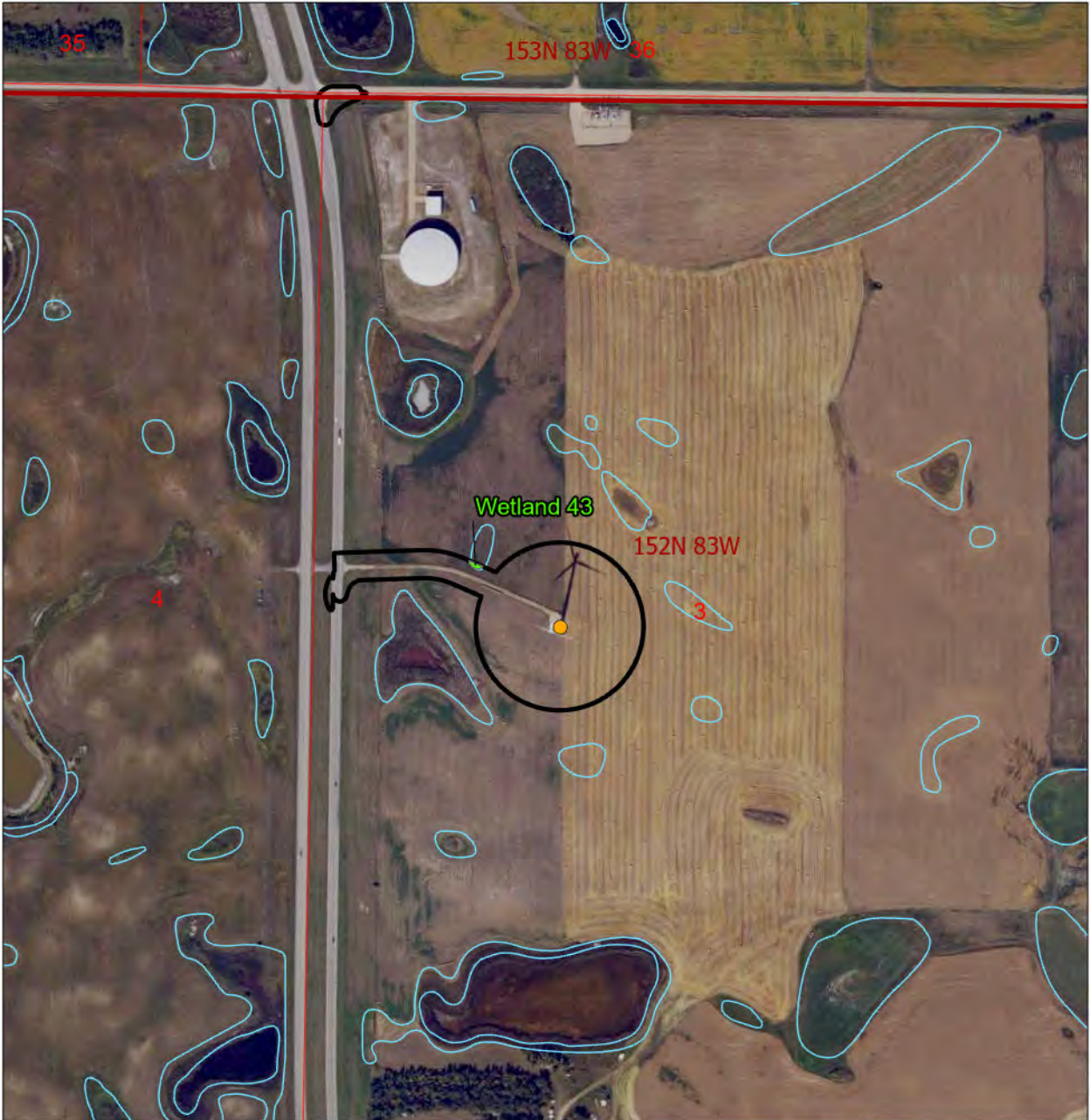
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Wetland / Waterbody Mapping

- Survey Area
- Project Location
- Map Pages
- Township
- Turbine



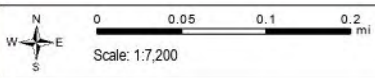
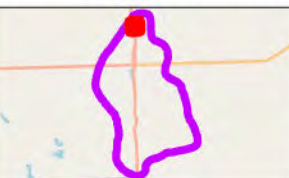
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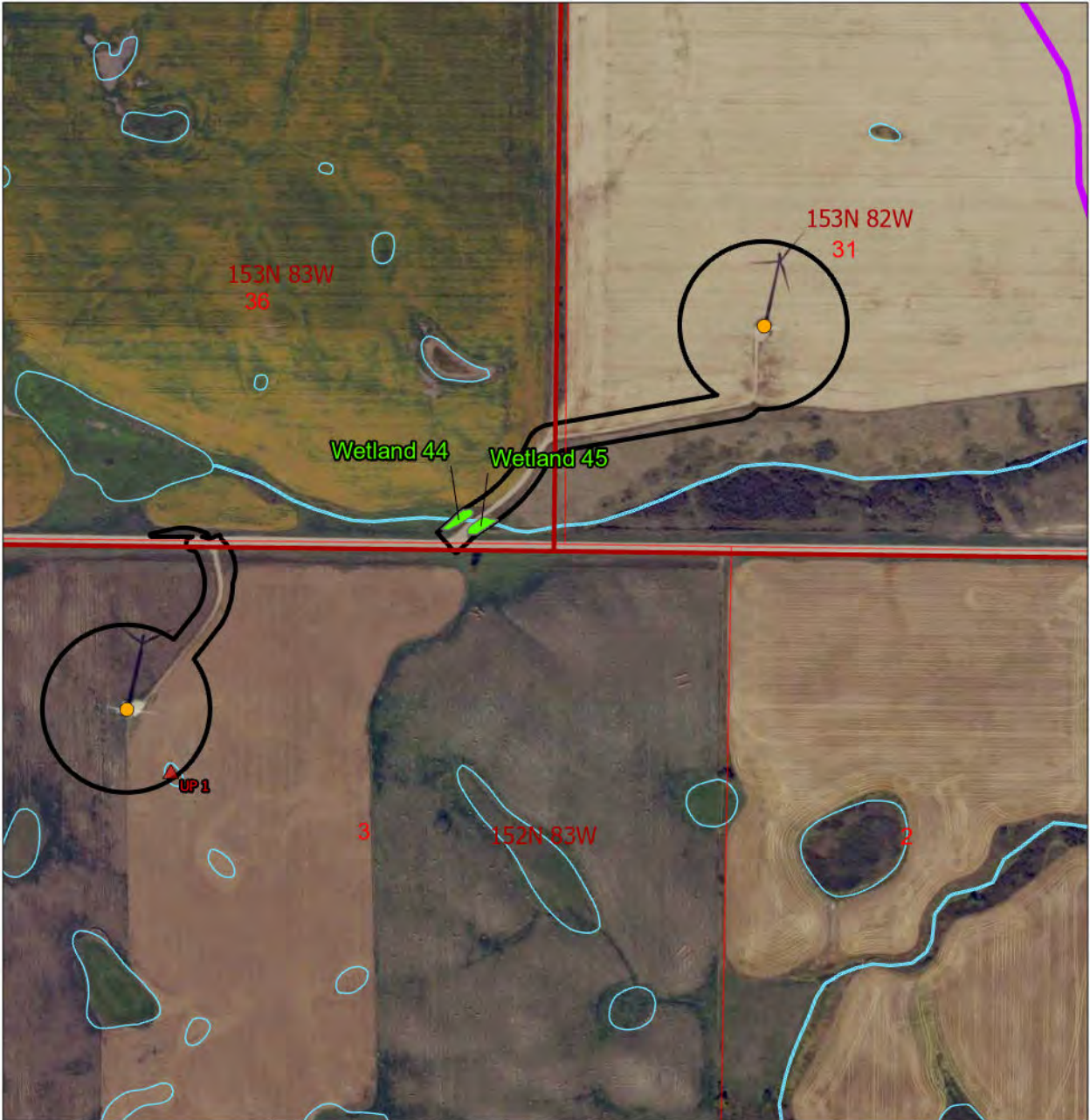
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| Project Location | Wetland | Upland Point |
| NWI Signature | Section | Turbine |



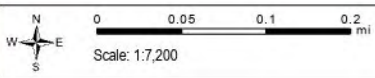
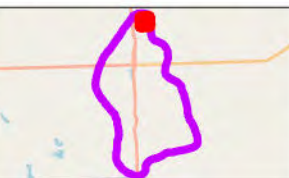
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Wetland / Waterbody Mapping

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| Survey Area | Waterbody | Township |
| Project Location | Wetland | Upland Point |
| NWI Signature | Section | Turbine |



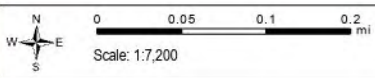
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Wetland / Waterbody Mapping

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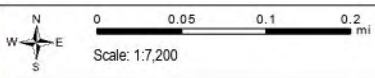
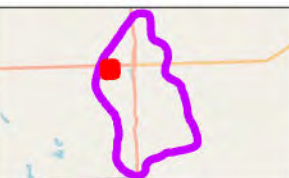
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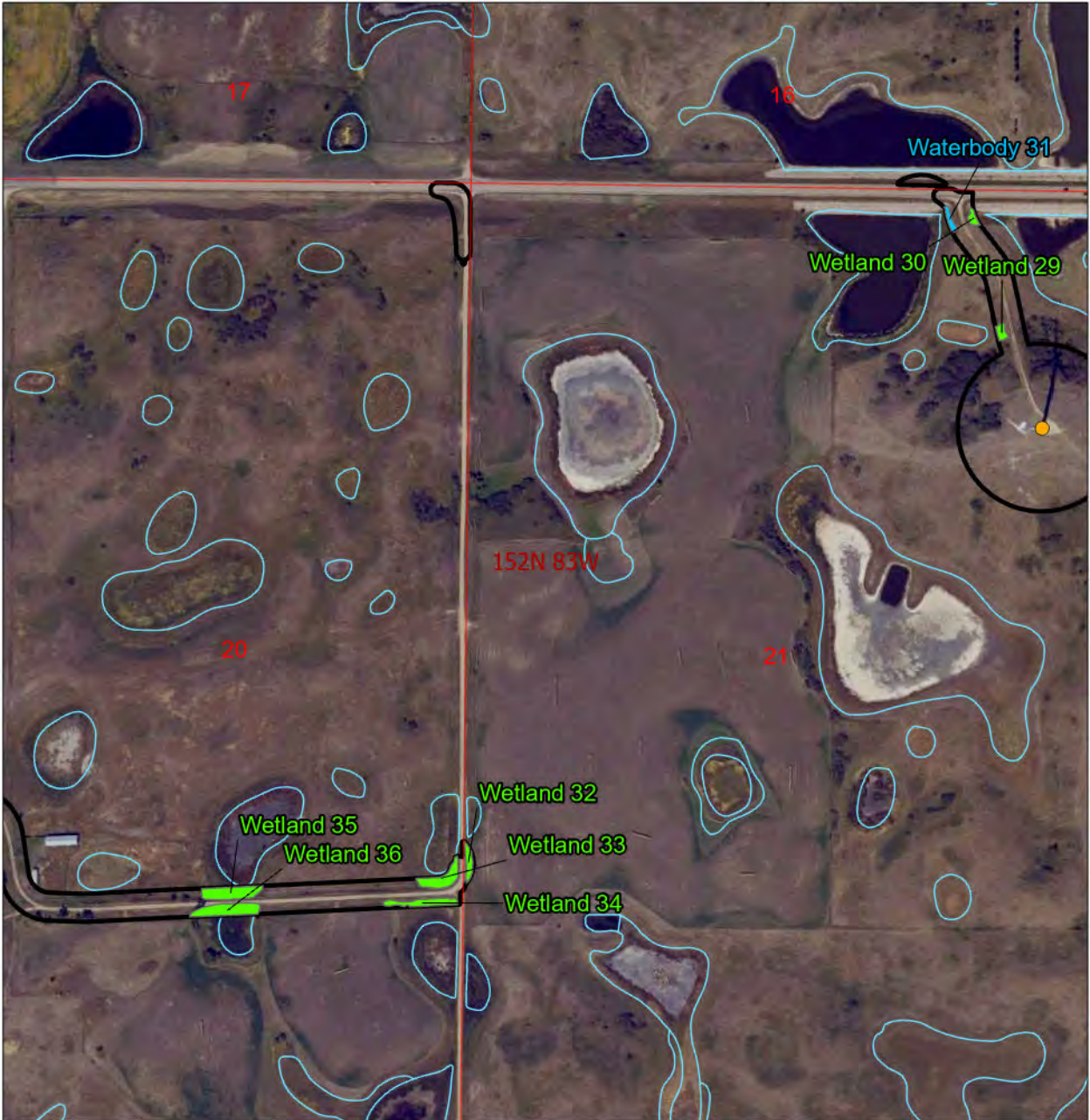
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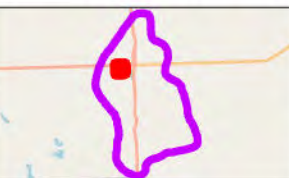


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Wetland / Waterbody Mapping

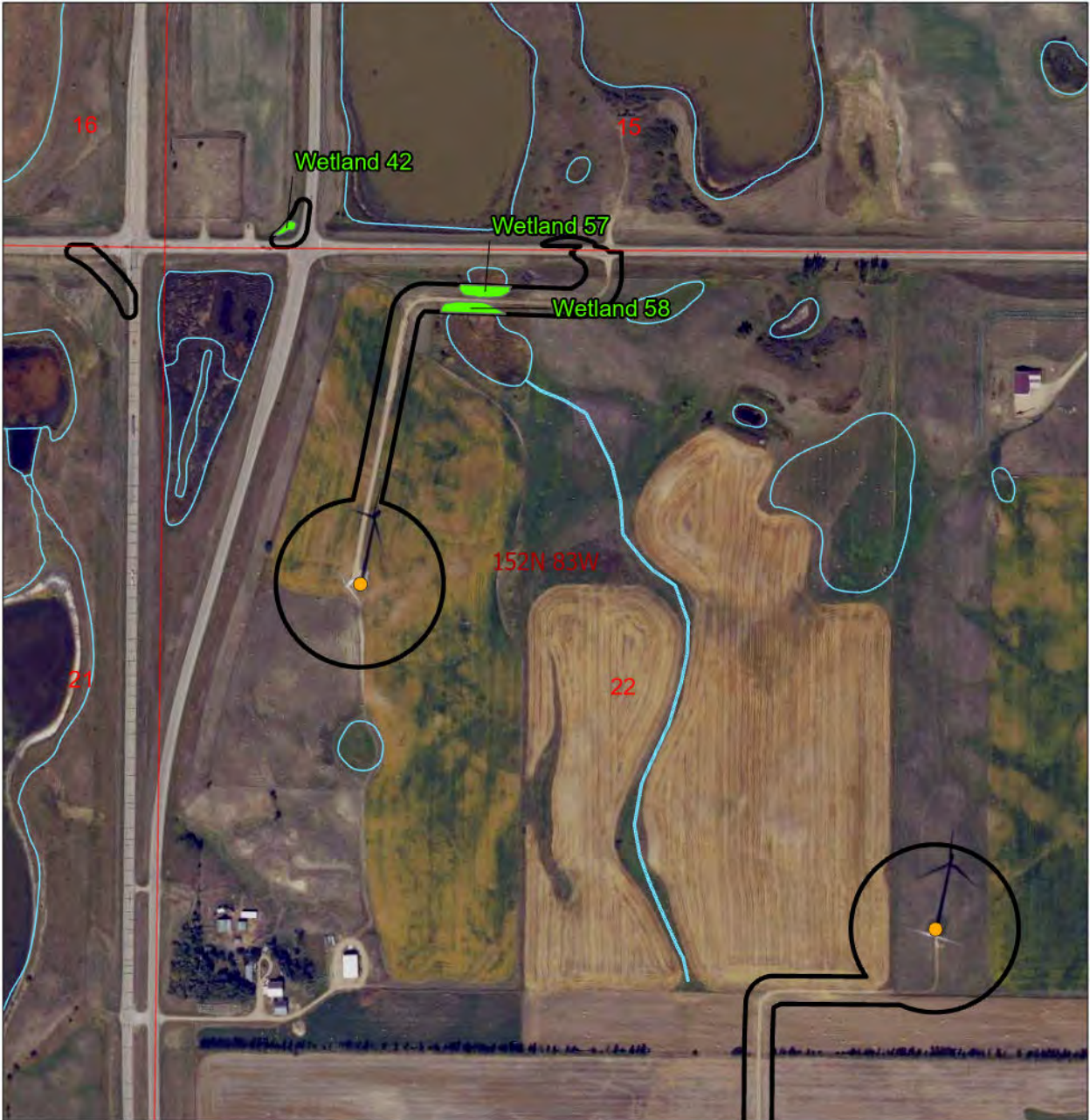


- Survey Area
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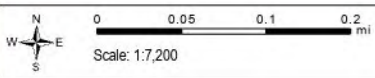
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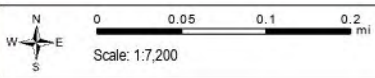
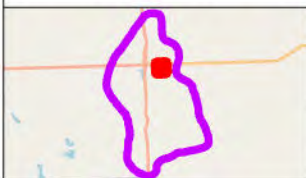
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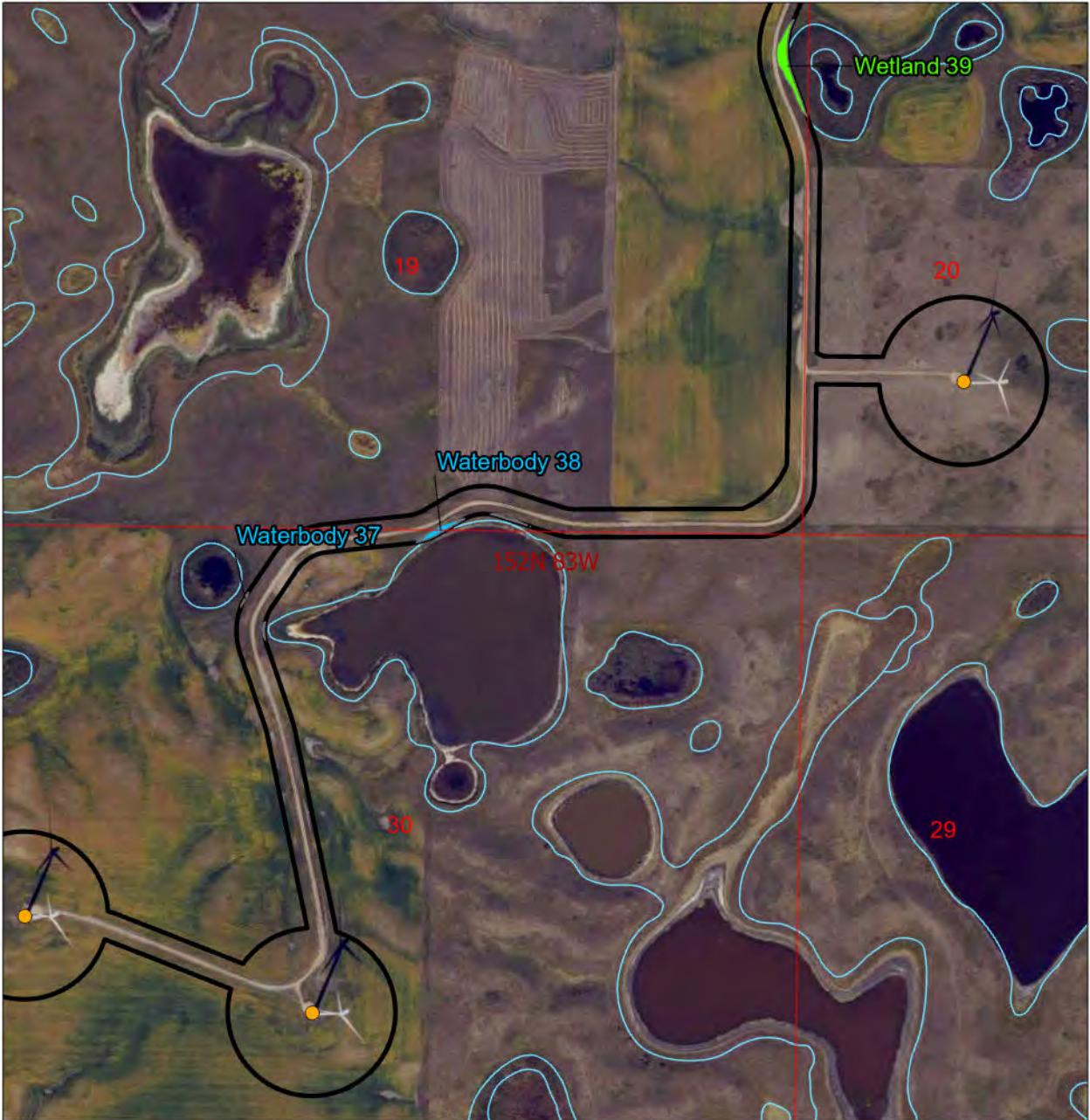
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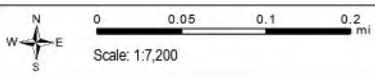
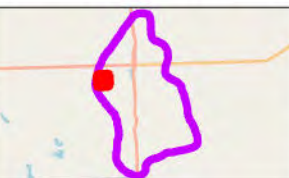
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Wetland / Waterbody Mapping

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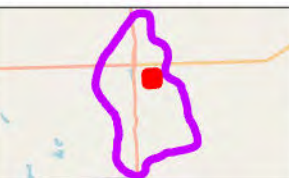


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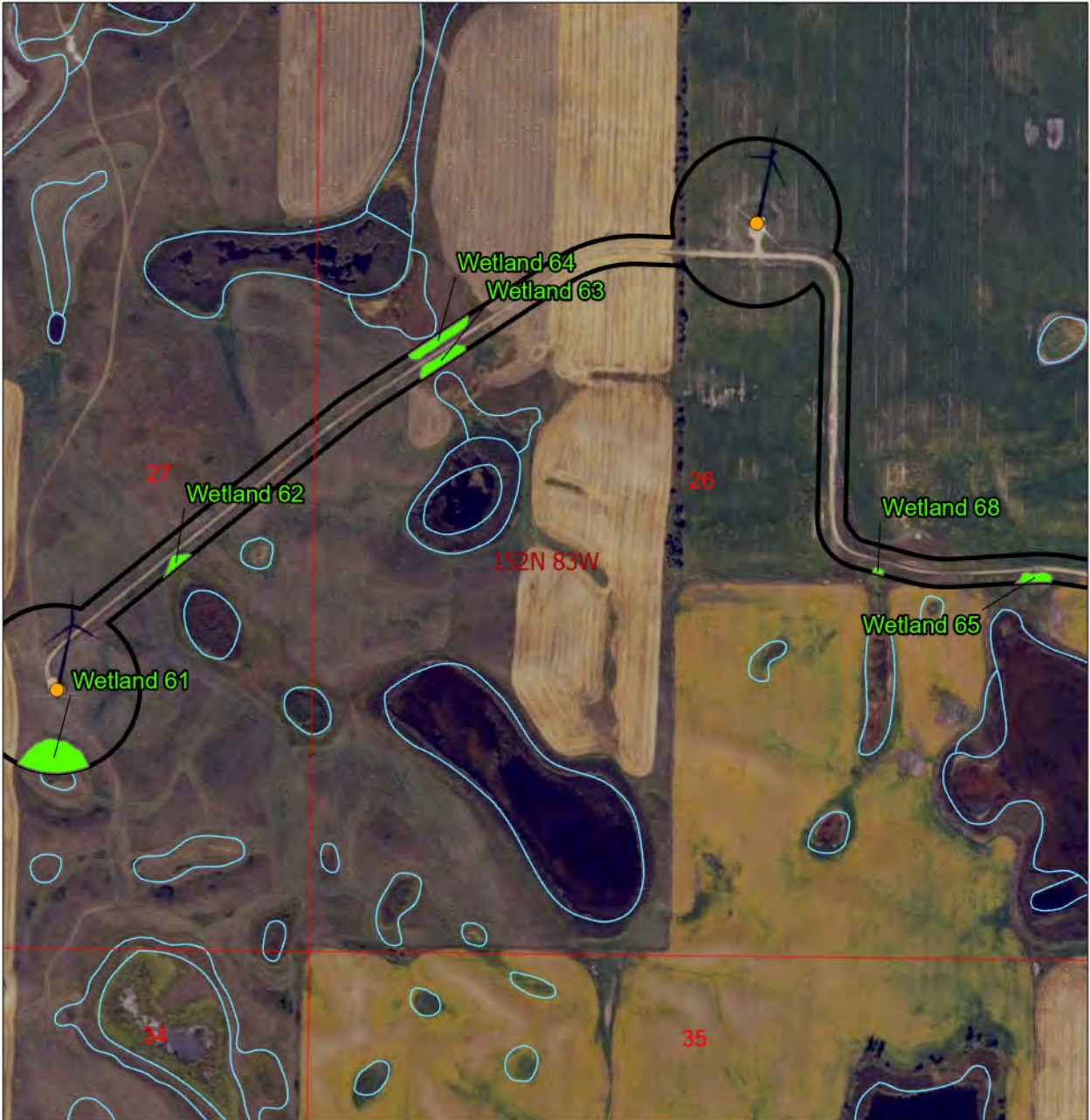


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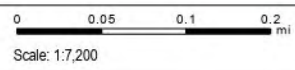
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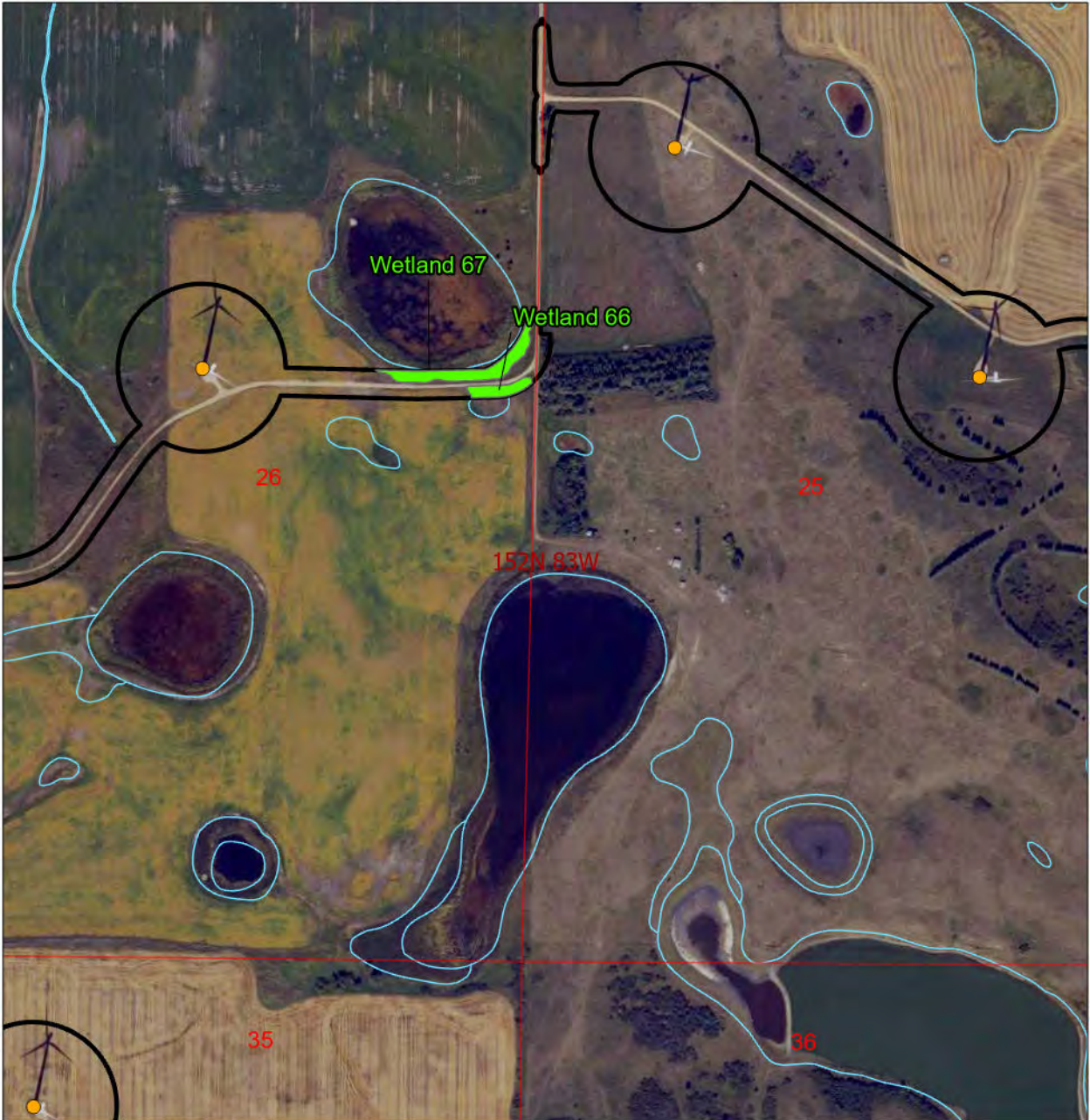
PrairieWinds 1 ND
Wetland / Waterbody Mapping

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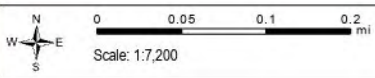
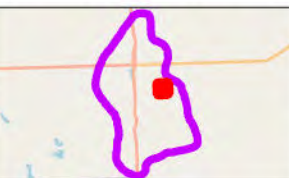
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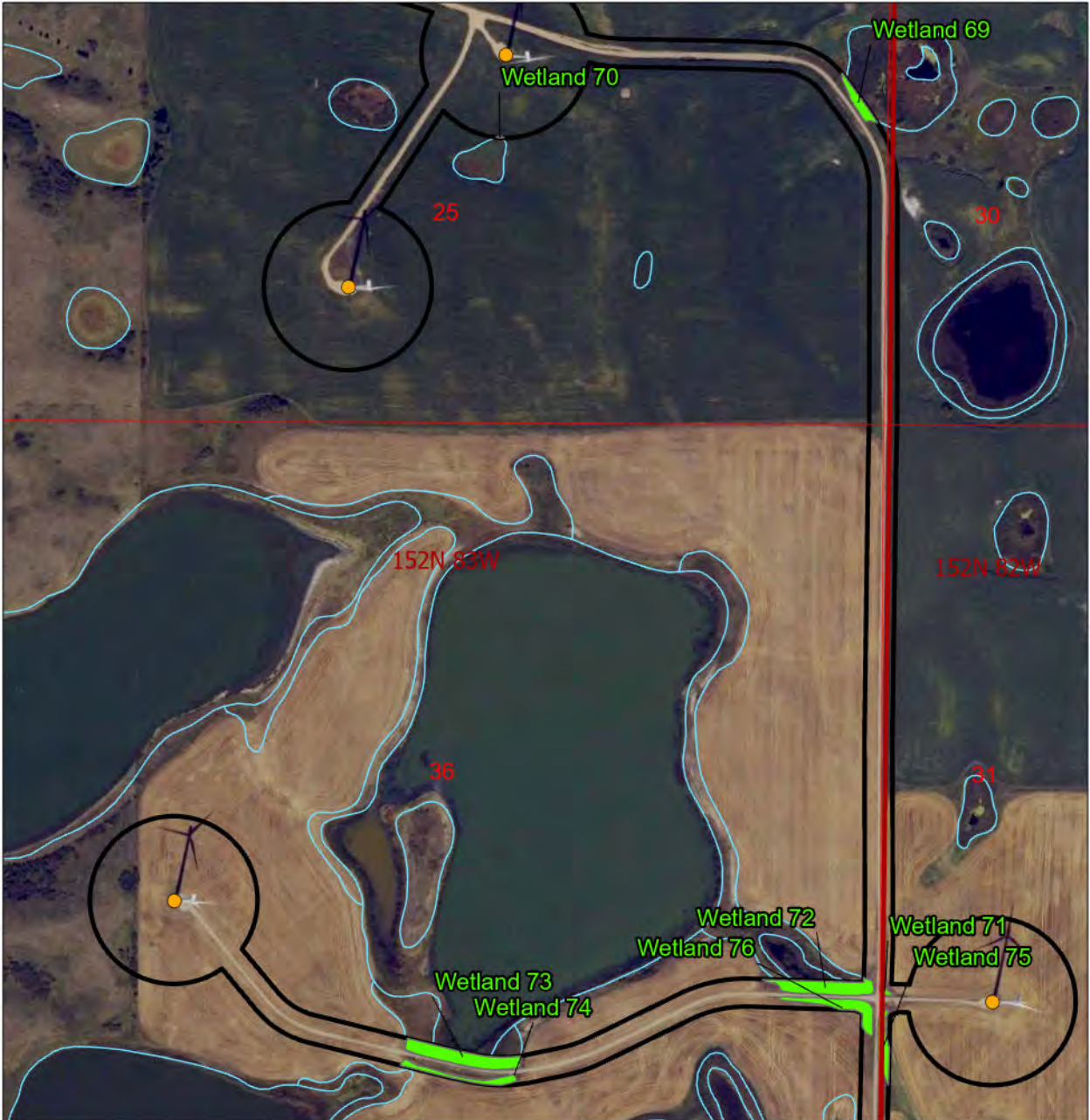
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Wetland / Waterbody Mapping

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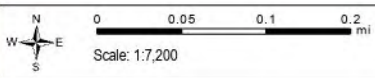
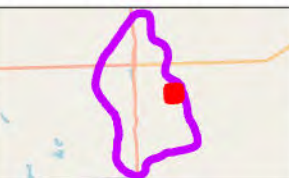
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PrairieWinds 1 ND
Wetland / Waterbody Mapping

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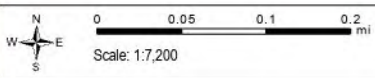
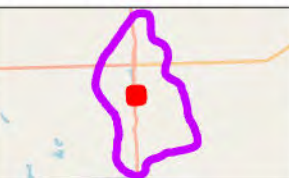
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 Coordinate System: NAD 1983 UTM Zone 14N
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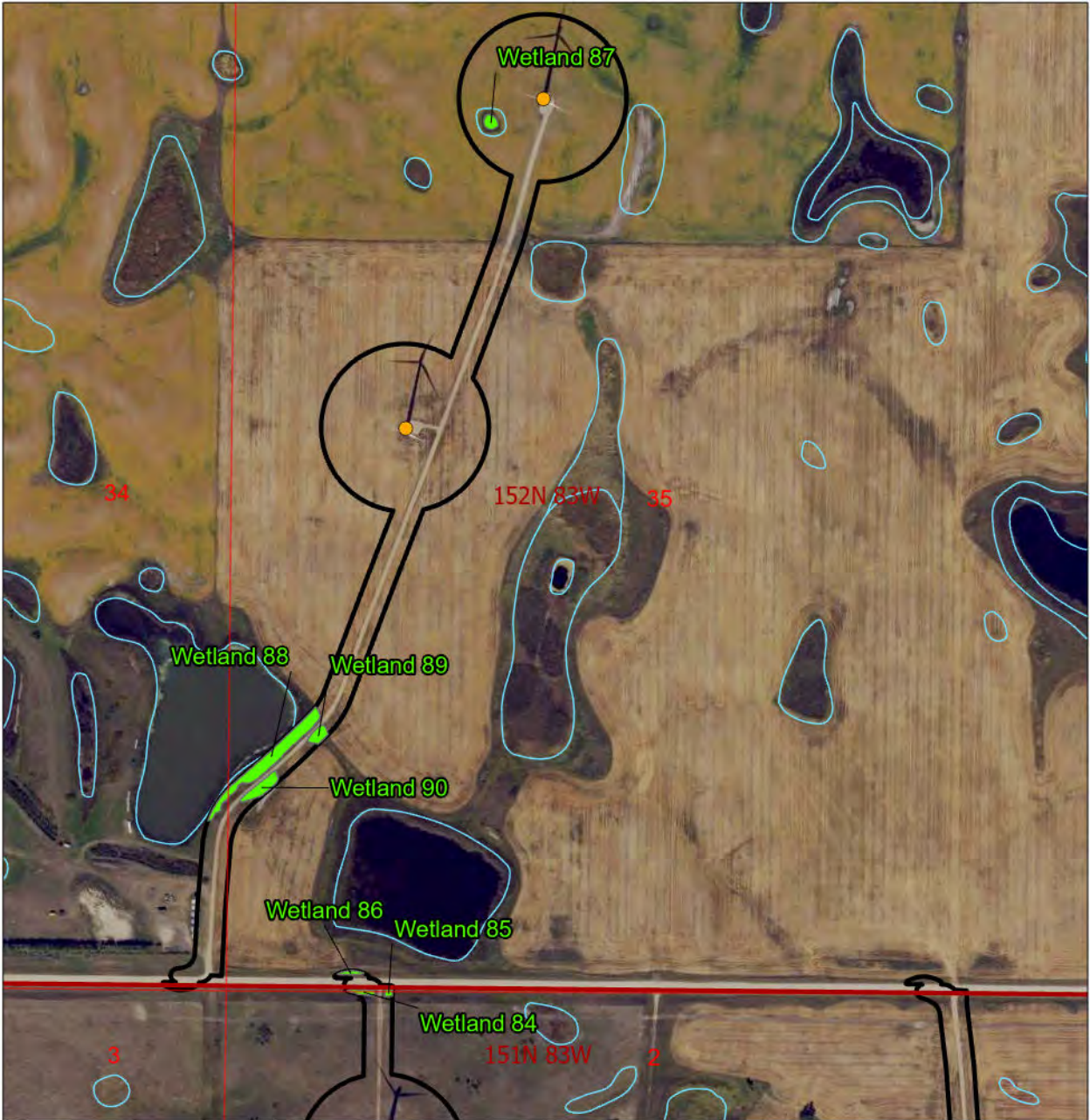
PrairieWinds 1 ND
Wetland / Waterbody Mapping

- Survey Area
- Waterbody
- Township
- Project Location
- Wetland
- Upland Point
- NWI Signature
- Section
- Turbine



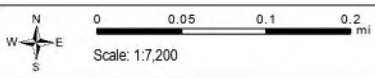
Data Source: 2024 USDA FSA Aerial Photograph
 Coordinate System: NAD 1983 UTM Zone 14N
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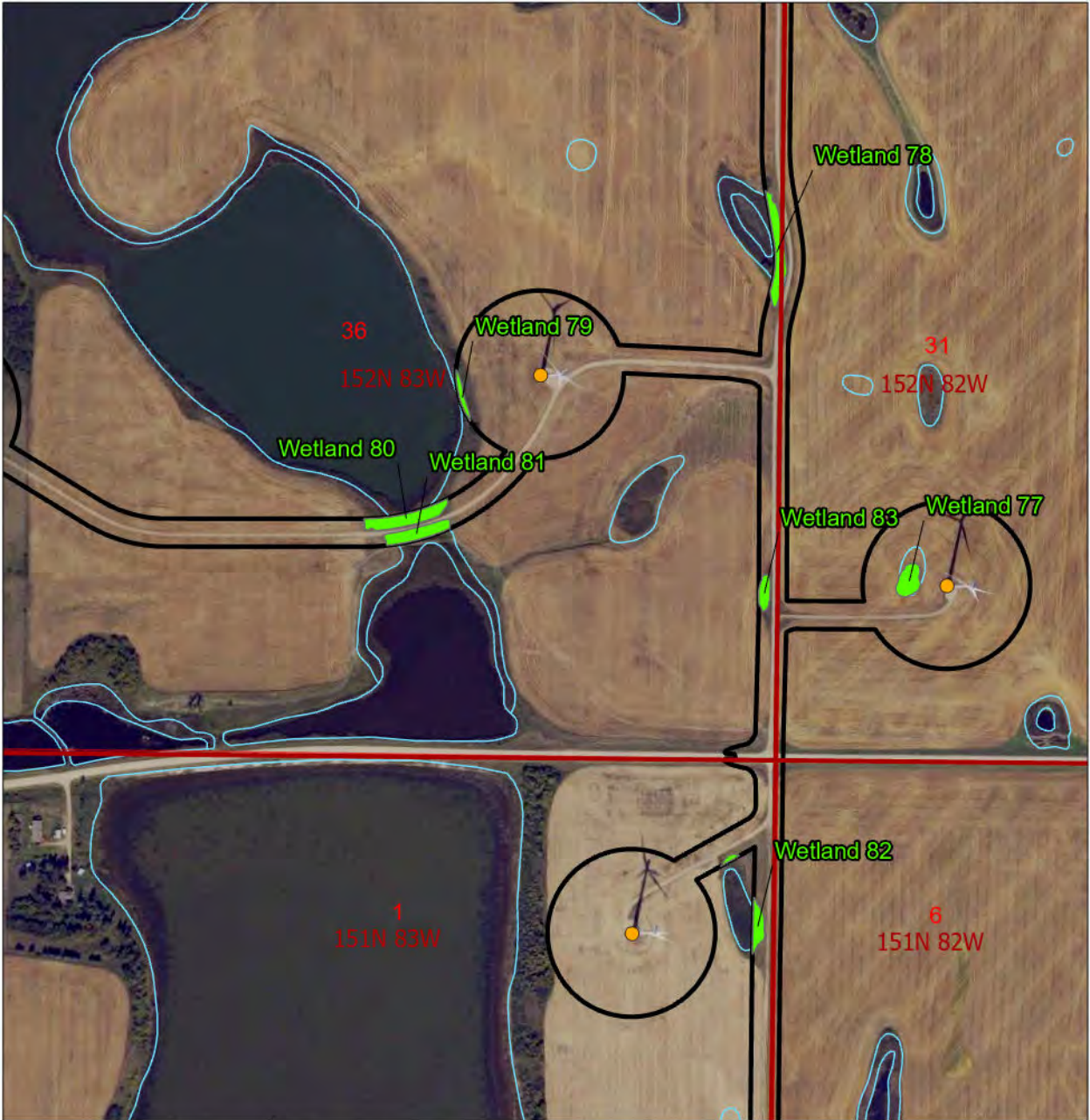
PrairieWinds 1 ND
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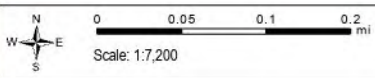
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