Appendix G: Bird and Bat Conservation Strategy (BBCS)

Wisconsin Power and Light Company
Docket No. IP7145/WS-24-349

BENT TREE NORTH
BIRD AND BAT CONSERVATION STRATEGY

Bent Tree North Wind Energy Facility
Freeborn, Steele, and Waseca Counties,
Minnesota

Wisconsin Power and Light Company

07 NOV 2024

Version	Date	Purpose or Scope Changes
1	April 24, 2024	N/A
2	June 11, 2024	Project Boundary Updated
3	November 7, 2024	2024 Bat Studies and HCP status Updated

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Abbreviations List

Alliant	Alliant Energy
ADLS	*Aircraft Detection Lighting System*
ABMTRP	*Avian and Bat Mortality Tracking and Reporting Procedure*
AGL	above ground level
APP	Avian Protection Plan
Audubon	National Audubon Society
BBCS	Bird and Bat Conservation Strategy
Bent Tree	Bent Tree Wind Energy Facility
BGEPA	Bald and Golden Eagle Protection Act
BMPs	Best Management Practices
CAFO	concentrated animal feeding operation
CFR	Code of Federal Regulations
CI	confidence interval
CIA	Critical Issues Analysis
ECPG	*Eagle Conservation Plan Guidance*
ESA	Endangered Species Act
FAA	Federal Aviation Administration
HCP	Habitat Conservation Plan
HF	high frequency
IBAs	Important Bird Areas
INBA	Indiana bat
ITP	Incidental Take Permit
LF	low frequency
LBBA	little brown bat
MBS	Minnesota Biological Survey
MBTA	Migratory Bird Treaty Act
MDA	Minnesota Department of Agriculture
MET	meteorological
MNDOC	Minnesota Department of Commerce
MNDNR	Minnesota Department of Natural Resources
mph	miles per hour
MW	megawatt
NLEB	northern long-eared bat
NWI	National Wetlands Inventory
PCM	post-construction (fatality) monitoring
Project/Bent Tree North	Bent Tree North Wind Energy Facility

PUC	Public Utilities Commission of Minnesota
PWI	Public Waters Inventory
RD	rotor diameter
RSH	rotor-swept height
SBS	Sites of Biodiversity Significance
SGCN	Species of Greatest Conservation Need
SPUT	Special Purpose Utility
T&E	threatened and endangered
TRBA	tricolored bat
USC	US Code
USEPA	US Environmental Protection Agency
USFWS	US Fish and Wildlife Service
USFWS 2018 Guidelines	*Range-Wide Indiana Bat Summer Survey Guidelines*
USFWS 2024 Guidelines	*Range-Wide Indiana Bat and Northern Long-eared Bat Survey Guidelines*
WEGs	*Land-Based Wind Energy Guidelines*
WEST	Western EcoSystems Technology, Inc.
Westwood	Westwood Professional Services, Inc.
WMAs	Wildlife Management Areas
WPL	Wisconsin Power and Light Company

1.0 Introduction

Alliant Energy's (Alliant's) Wisconsin Power and Light Company (WPL) is committed to siting, designing, constructing, and operating renewable energy projects in an environmentally sustainable manner. This includes avoiding and minimizing impacts to birds and bats at their wind energy facilities.

The US Fish and Wildlife Service (USFWS) recommends following the *Land-Based Wind Energy Guidelines* (USFWS 2012), hereafter referred to as WEGs, for assessing wildlife risks at wind energy facilities, promoting communication between project proponents and the USFWS, and providing a practical approach for conserving species of concern.

This **Bird and Bat Conservation Strategy** (BBCS) is intended to summarize the voluntarily implemented studies/results assessing the potential environmental impacts that may result from construction and operation of the Bent Tree North (previously Bent Tree 2) Wind Energy Facility (Bent Tree North Wind Project, Bent Tree North, or Project). It also includes proposed post-construction monitoring (PCM) and mitigation measures suggested to address avian and bat risk at the Project. Coordination is ongoing with the USFWS Minnesota/Wisconsin Field Office and the Minnesota Department of Natural Resources (MNDNR) regarding the development of the Project[1]. Additionally, this BBCS was developed to support the application requirements for a Large Wind Energy Conversion System Site Permit anticipated to be issued by the Minnesota Public Utilities Commission, in accordance with the Chapter 216F, Minnesota Statutes (2018), and the application requirements for a Wisconsin Certificate of Authority (Wisconsin Statute § 201.03).

Wind energy is an increasingly important part of the US energy portfolio, with approximately 227,406 megawatts (MW) of capacity currently in place (American Clean Power 2023). Wind energy facilities provide a clean and environmentally friendly source of energy, significantly reducing US carbon emissions, sulfur dioxide emissions, nitrogen oxides emissions, and water use. As a local and renewable resource, wind reduces dependence on foreign energy sources, plays a key role in the US energy sector, and has become one of the most affordable energy sources on the market. In Minnesota, wind energy accounts for over 22% of the state's electricity generation (US Energy Information Administration 2022).

[1] Alliant has also coordinated with the USFWS Illinois/Iowa Field Office on a multi-project Habitat Conservation Plan (HCP) since 2019 for their wind projects in Iowa and Minnesota, and Bent Tree North was included in those discussions, as it is Alliant's intent to amend the HCP and incidental take permit to include the Project, once built.

2.0 Project Description

The Project area is approximately 26,046 acres in size and is located primarily in agricultural production in Freeborn, Steele, and Waseca counties, Minnesota (Figure 2-1). The Project is north of and adjacent to the existing 201-MW Alliant-owned Bent Tree Wind Energy Facility (Bent Tree), which became operational in 2011. The Project is proposing to include the construction and operation of 34 wind turbine generators with a Project nameplate capacity of 153 MW. The Project will also include associated infrastructure and facilities including a Project Substation, electrical collection lines, access roads, crane paths, and meteorological towers. The Project will also include rebuilding about 6 miles of an existing overhead 69 kilovolt (kV) transmission line, which will be constructed, permitted, and maintained by ITC Midwest.

Alliant is committed to complying with all environmental laws and regulations, including proactive efforts to minimize impacts to wildlife. Alliant integrates environmental requirements into all planning, decision-making, construction, operating, and maintenance activities that it performs as a part of its business. Employees must conduct work in a manner demonstrating Alliant's concern for preserving natural resources and protecting wildlife—acting in accordance with the company's Core Value of Responsibility.

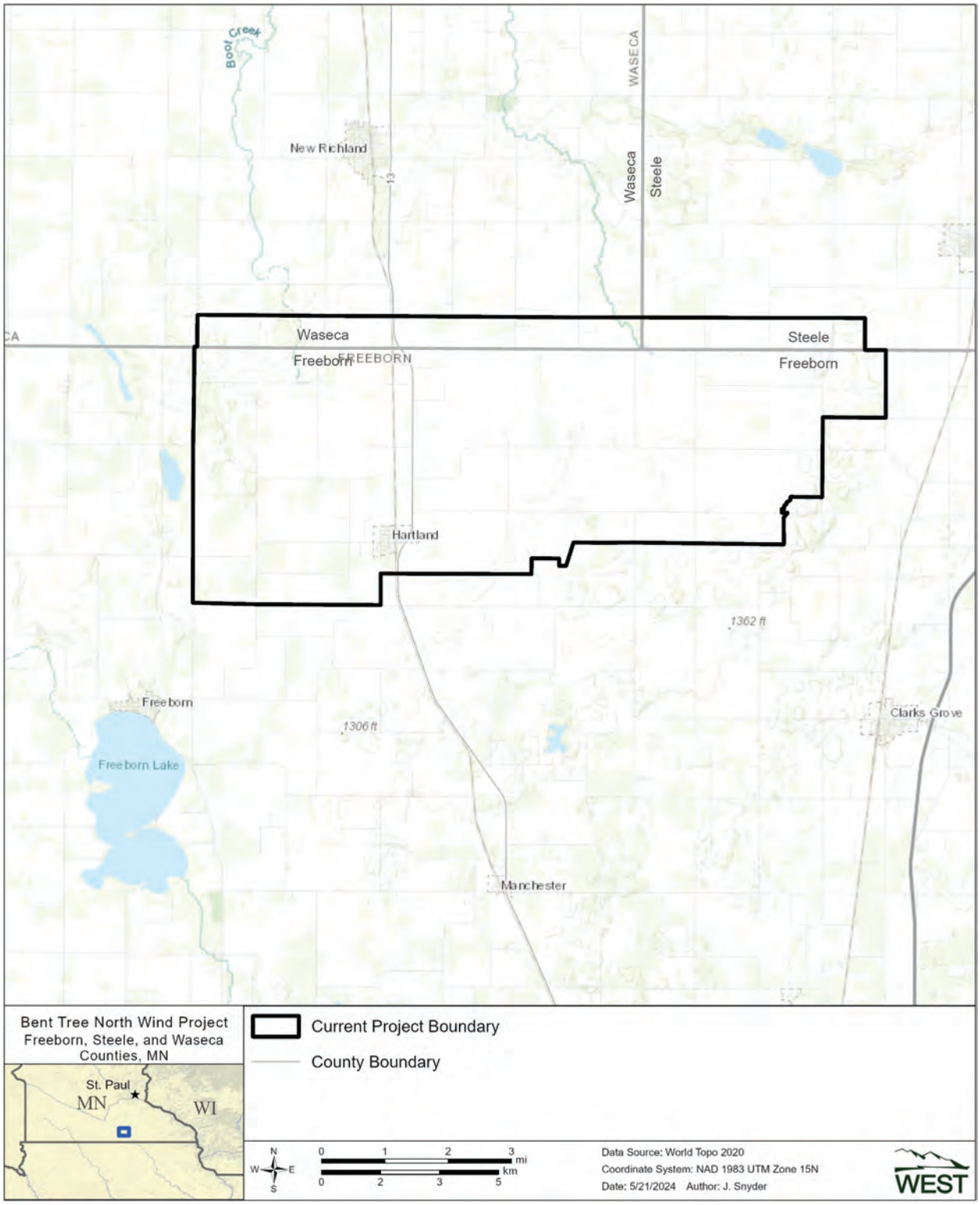

Figure 2-1. Location of the Bent Tree North Wind Project in Freeborn, Steele, and Waseca Counties, Minnesota.

3.0 Statement of Purpose

The purpose of this BBCS is to outline the baseline data collection and Project siting considerations, informed risk assessment, and operational actions that WPL will employ at the Project to:

- Comply with all pertinent state and federal avian and bat conservation and protection laws and regulations applicable to the Project
- Document adherence to the WEGs
- Identify, quantify, and analyze significant impacts to avian and bat resources
- Describe measures to avoid and minimize potential impacts to birds and bats during siting, construction, operation and maintenance, and decommissioning of the Project
- Implement various conservation, avoidance, minimization, and mitigation measures to address any unexpected significant impacts that could result from the operation of the Project
- Develop effective procedures to inform and guide management actions over the life of the Project

4.0 Regulatory Framework

The USFWS provides protection for migratory birds under authority of several laws including the Migratory Bird Treaty Act (MBTA) (16 US Code [USC] 703–712 [1918]), the Endangered Species Act (ESA) (16 USC 1531–1543 [1973]), and the Bald and Golden Eagle Protection Act (BGEPA) (16 USC 668–668d [1940]). This BBCS is prepared to demonstrate efforts to comply with the federal regulations mentioned above and in accordance with the WEGs. The WEGs indicate that adherence to regulations and communication with the USFWS would be viewed as "an appropriate means of identifying and implementing reasonable and effective measures to avoid the take of species protected under the MBTA and BGEPA." Additionally, the USFWS "will take such adherence and communication fully into account when exercising discretion" regarding the enforcement, when necessary, of the MBTA and BGEPA.

4.1 FEDERAL LAWS, REGULATIONS, POLICIES

Migratory Bird Treaty Act (MBTA)

The MBTA is the cornerstone of migratory bird conservation and protection in the US. The MBTA implements 4 treaties that provide for international protection of migratory birds. It is a strict liability statute, meaning that proof of intent, knowledge, or negligence is not an element of an MBTA violation. The statute's language is clear that actions resulting in a "taking" or possession (permanent or temporary) of a protected species, in the absence of a USFWS permit or regulatory authorization, are a violation. The MBTA states, "Unless and except as permitted by regulations … it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill … possess, offer for sale, sell… purchase … ship, export, import …transport or cause to be transported… any migratory bird, any part, nest, or eggs of any such bird …" 16 USC 703 (1918). The word "take" is defined by regulation as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect" 50 Code of Federal Regulations (CFR) 10.12 (1973). The USFWS maintains a list of all species protected by the MBTA at 50 CFR 10.13 (1973). This list includes over 1,000 species of migratory birds, including eagles and other raptors, waterfowl, shorebirds, seabirds, wading birds, and passerines.

Bald and Golden Eagle Protection Act (BGEPA)

Under authority of the BGEPA (16 USC 668–668d [1940]), bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) are afforded additional legal protection. The BGEPA prohibits the take, sale, purchase, barter, offer of sale, purchase, or barter, transport, export or import, at any time or in any manner of any bald or golden eagle, alive or dead, or any part, nest, or egg thereof (16 USC 668 [1940]). The BGEPA also defines take to include "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb," and includes criminal and civil penalties for violating the statute. The term "disturb" is defined as agitating or bothering an eagle to a degree that causes, or is likely to cause, injury to an eagle, or either a decrease in productivity or nest abandonment by substantially interfering with normal breeding, feeding, or sheltering behavior (50 CFR 22.3 [1974]).

In 2024, the USFWS revised the permit regulations for incidental take of eagles under 50 CFR 22. The Permits for Incidental Take of Eagles and Eagle Nests (2024 Eagle Rule; USFWS 2024a) included the creation of a general permit option (50 CFR 22 Subpart E § 22.250) for authorizing incidental take at a wind facility "that occur frequently enough for the Service to have developed a standardized approach to permitting and ensure permitting is consistent with the preservation standard." To be eligible for a general permit, a wind facility must 1) be in an area with relative

abundance below the seasonal thresholds identified by the USFWS for both eagle species, and 2) not have a golden eagle nest within 2 miles or a bald eagle nest within 660 feet of turbine blades or other turbine infrastructure (USFWS 2024a). Project proponents who desire to obtain incidental take authorization but are ineligible for a general permit may apply for a "specific permit" (50 CFR 22 Subpart E § 22.200) in much the same way as permits were issued under the 2016 Eagle Rule. However, the 2024 Eagle Rule also created a tiered process for specific permit applications (and associated permit fees) based on the level of complexity and anticipated processing times associated with an application. For all eagle incidental take permits, the USFWS continues to require implementation of all practicable avoidance and minimization measures to reduce the likelihood of take.

Endangered Species Act (ESA)

The ESA directs the USFWS to identify and protect threatened and endangered (T&E) species and their critical habitat, and to provide a means to conserve their ecosystems. Among its other provisions, the ESA requires the USFWS to assess civil and criminal penalties for violations of the ESA or its regulations. Section 9 of the ESA prohibits take of federally listed species. Take is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct" 16 USC § 1532 (1973). The term "harm" includes significant habitat alteration that kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR § 17.3 [1975]).

Projects involving federal lands, funding, or authorizations will require consultation between the federal agency and the USFWS, pursuant to Section 7 of the ESA. Projects without a federal nexus should work directly with USFWS to avoid adversely impacting listed species and their critical habitats.

4.2 STATE OF MINNESOTA REGULATIONS

The MNDNR has jurisdiction over wildlife and MNDNR lands in Minnesota. In addition, Minnesota's Endangered Species Statute (Minnesota Statutes, section 84.0895) prohibits take, import, transport, release, or sale of T&E species without a permit. While the MNDNR does not have siting authority over wind projects, wind projects that are 5 MW or larger generally require a site permit from the Public Utilities Commission of Minnesota (PUC). MNDNR provides comments on wind energy development during the PUC permitting process. MNDNR has finalized guidance to help wind energy developers understand and avoid impacts to wildlife in Minnesota (MNDNR 2011, Mixon et al. 2014).

4.3 GUIDANCE DOCUMENTS

This BBCS for the Project was prepared utilizing several documents specific to wind energy development. These documents provided guidance for decision making on risk analyses, study protocols, and results. These include:

- MNDNR *Guidance for Commercial Wind Energy Projects* (2011),
- MNDNR and Minnesota Department of Commerce (MNDOC) *Avian and Bat Survey Protocols for Large Wind Energy Conversion Systems in Minnesota* (Mixon et al. 2014),
- WEGs (USFWS 2012),
- 2013 *Eagle Conservation Plan Guidance* (ECPG; USFWS 2013), as amended,

- *Range-wide Indiana Bat and Northern Long-eared Bat Survey Guidelines* (USFWS 2024d, as amended),
- *Reducing Avian Collisions with Power Lines: The State of the Art in 2012* (Avian Power Line Interaction Committee 2012), and
- *Alliant Energy Avian Protection Plan* (APP; Alliant 2021).

5.0 Tier 1 and 2 – Site Evaluation and Characterization

Project development was initiated by Alliant in early 2017 within a 13,402-acre area in Freeborn County, Minnesota (Project Boundary [2017 – 2018]; Figure 5-1). The Project Boundary changed several times throughout the development process. The Project Boundary (2017 – 2018) was expanded to 28,597 acres in 2022 – 2023 (Project Boundary [2022 – 2023]; Figure 5-1). In early 2024, the boundary shifted north (slightly overlapping with both Steele and Waseca counties in addition to Freeborn County) and was reduced in size to 25,602 acres (Project Boundary [2024]). The boundary expanded slightly later in 2024, resulting in the final and current boundary encompassing 26,046 acres (Current Project Boundary; Figure 5-1).

The tiered approach recommended in the WEG is intended to provide an incremental evaluation of wildlife risk during the development process. As described in the WEG, the Tier 1 and 2 assessments evaluate potential issues that may need to be considered prior to development or operation of a project. Tier 1 studies provide a preliminary evaluation or screening of public data from federal, state, and tribal entities and offer early guidance to project proponents about sensitive wildlife resources found within the site. Tier 2 studies provide an evaluation of effects of the proposed Project on any federally listed, state-listed, and other sensitive species.

A Critical Issues Analysis (CIA) was developed for the Project in 2024 (Westwood 2024). The CIA was developed using a previous Project Boundary (the CIA Project Boundary [2023] shown in Figure 5-1) following recommendations in the WEG for Tiers 1 and 2 and recommendations in the ECPG for a Stage 1 Initial Site Assessment, which includes more detail on potential risks to eagles. The CIA identified sensitive species that may be impacted by development or operation of the Project, as well as all bat species that could occur in the region (Westwood 2024). Because the Project Boundary shifted during the development phase (Figure 5-1), the Tier 1 and 2 evaluation has been updated in this BBCS. Additionally, Alliant requested information and environmental review from the MNDNR and USFWS in February 2024. Alliant received an official species list for the Project from the USFWS Minnesota-Wisconsin Ecological Services Field Office on March 19, 2024 (USFWS 2024c). Alliant received Natural Heritage Information System (NHIS) data for the Project from the MNDNR on April 10, 2024 (MNDNR 2024d) and an update to the NHIS review for the Project was provided on April 12, 2024 for the 2024 Project Boundary (MNDNR 2024e). The following sections summarize the results of the Tier 1 and Tier 2 evaluation conducted for the Project.

5.1 ECOREGIONS AND LAND COVER TYPES

The Project is located in the Eastern Iowa and Minnesota Drift Plains Level IV Ecoregion and the Western Corn Belt Plains Level III Ecoregion (White 2020). Land cover was historically dominated by a mix of tallgrass prairie, hardwood forest, and prairie pothole wetlands. The current land cover on the site is primarily cultivated crops (93.8%) followed by developed land (4.3%). The remaining land cover types include deciduous forest, emergent herbaceous wetlands, herbaceous land, hay/pasture, woody wetlands, mixed forest, open water, evergreen forest, and barren land, which together comprise less than 2.0% of the Project area (Figure 5-2). Topography in the Project area is relatively flat, with elevations ranging from 1,179–1,350 feet above mean sea level.

5.2 WETLANDS AND WATERBODIES

Because of limitations in satellite resolution used to generate National Land Cover Database data, the USFWS National Wetlands Inventory (NWI) estimates of wetland coverage within the Project are more reliable for large-scale project use, particularly for small or ephemeral wetlands.

According to the National Wetlands Inventory (NWI 2020) and the MNDNR Public Waters Inventory (PWI), the Project encompasses 492 acres of wetlands (Figure 5-3). Most wetlands are classified as freshwater emergent wetland (74.0%), followed by riverine (12.2%), freshwater forested/shrub wetland (10.3%), and freshwater pond (3.6%; Figure 5-3). The Le Sueur River is centrally located in the Project and Boot Creek flows through the western portion of the Project. Spicer Lake borders the Project to the west. Freeborn Lake is located 2.4 miles southeast from the Project (Figure 5-3).

5.3 FEDERAL, STATE, AND PRIVATE CONSERVATION LANDS

The Project is located on privately owned land. According to the US Geological Survey Protected Areas Database of the US (2022), there are no federally or state-owned lands within the Project (Figure 5-4). There are 10 state-owned Wildlife Management Areas (WMAs) located within 10.0 miles of the Project: Chapa-kak-say-za WMA, Dean Christensen Memorial WMA, Geneva WMA, Halls Lake WMA, Manchester WMA, Mueller WMA, Pogones Marsh WMA, Teal Marsh WMA, Wells WMA, and Young Bull WMA (Figure 5-4). Five federally owned Waterfowl Production Areas (WPA) are located within 10 miles of the Project: three neighboring parcels of land labelled Freeborn County WPA and two neighboring parcels of land both labelled Steele County WPA (Figure 5-4). A state-owned Saint Olaf Lake Aquatic Management Area (Waseca) is located approximately 3.0 miles norther of the Project. Additionally, there are four city owned lands (Oakwald Park, Shoreland Park, Shorewood Hills Park, and Snyder Fields) located within 10 miles south of the Project (Figure 5-4).

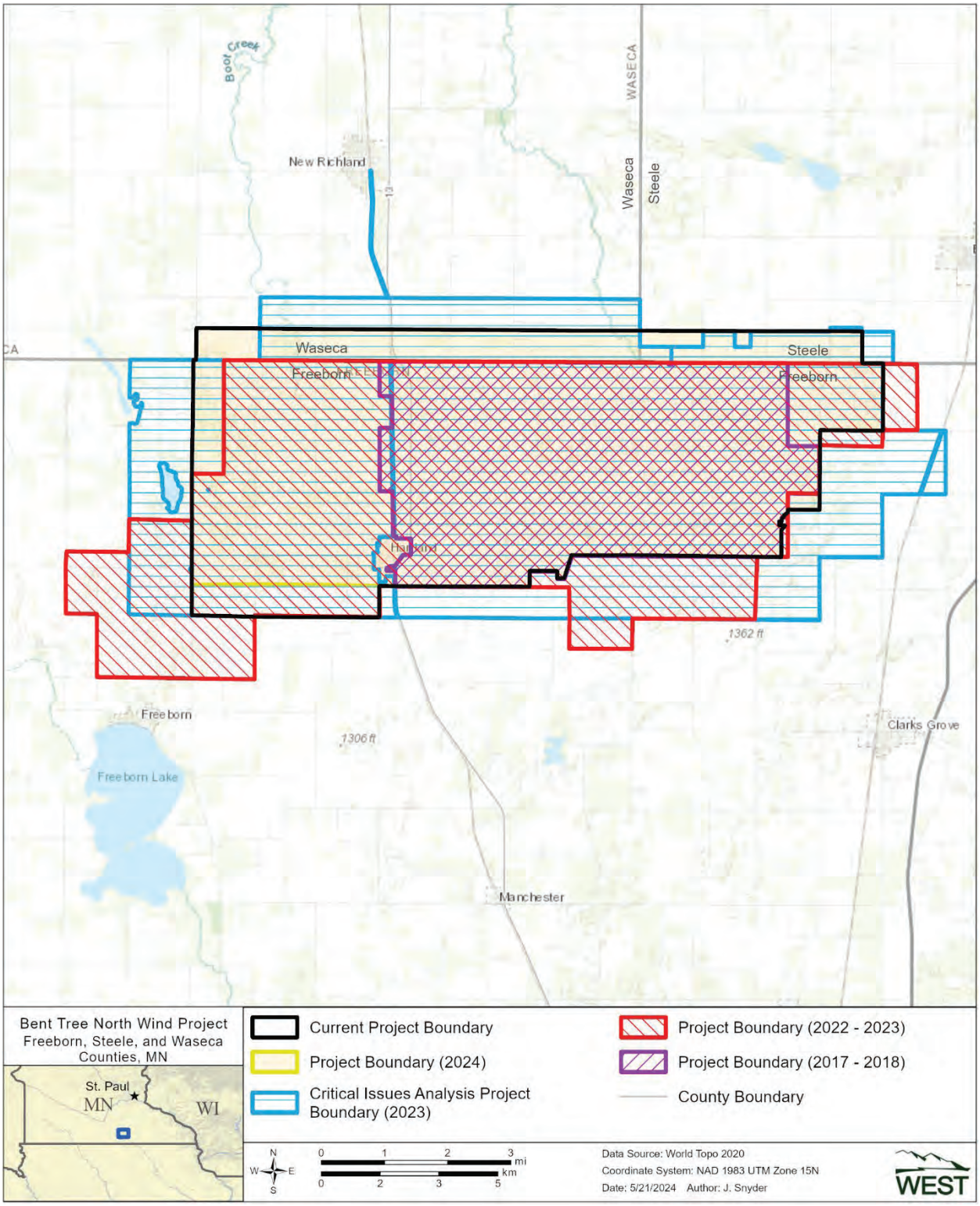

Figure 5-1. Boundary changes for the Bent Tree North Wind Project in Freeborn, Steele, and Waseca Counties, Minnesota.

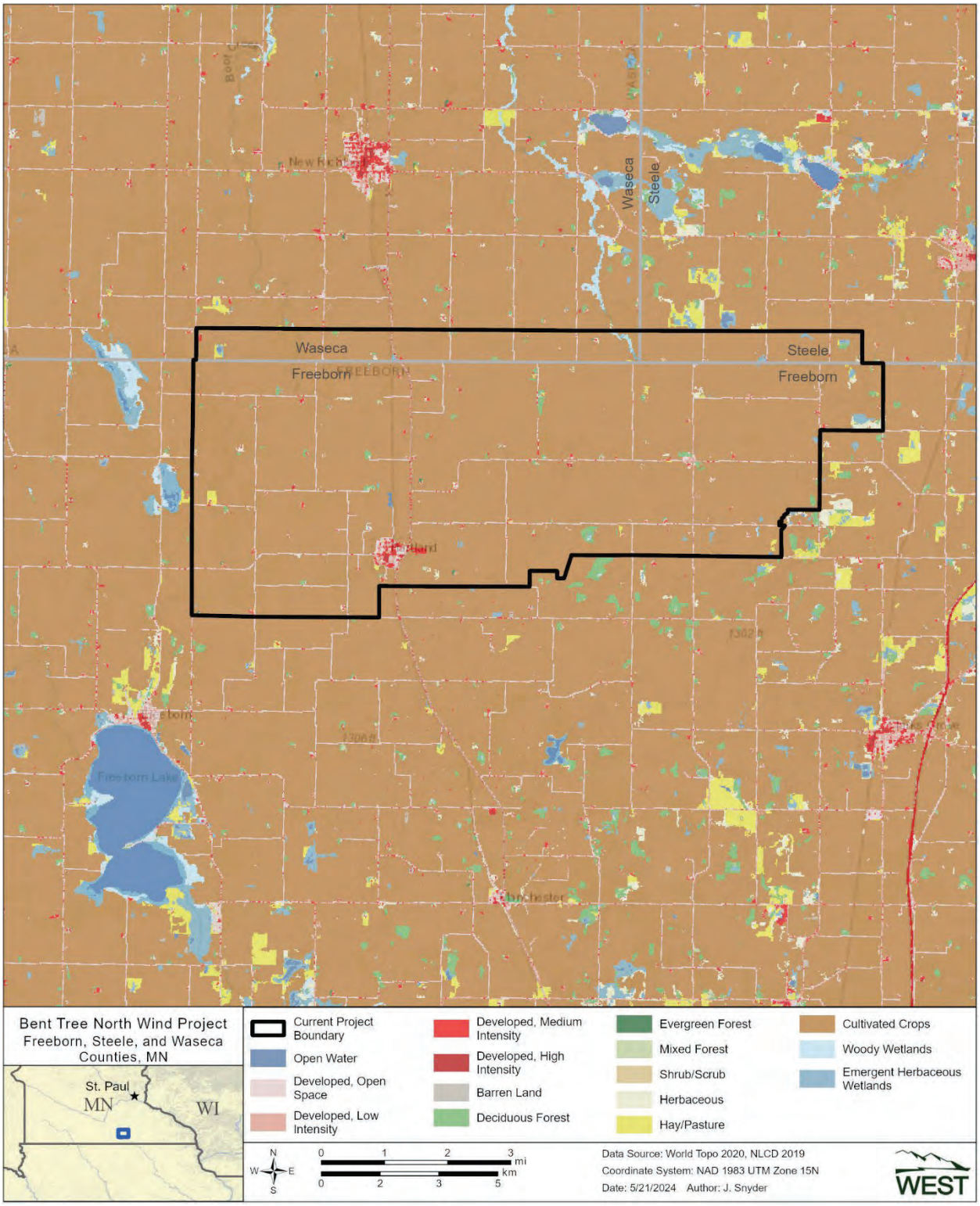

Figure 5-2. Land cover and composition within the Bent Tree North Wind Project in Freeborn, Steele, and Waseca Counties, Minnesota.

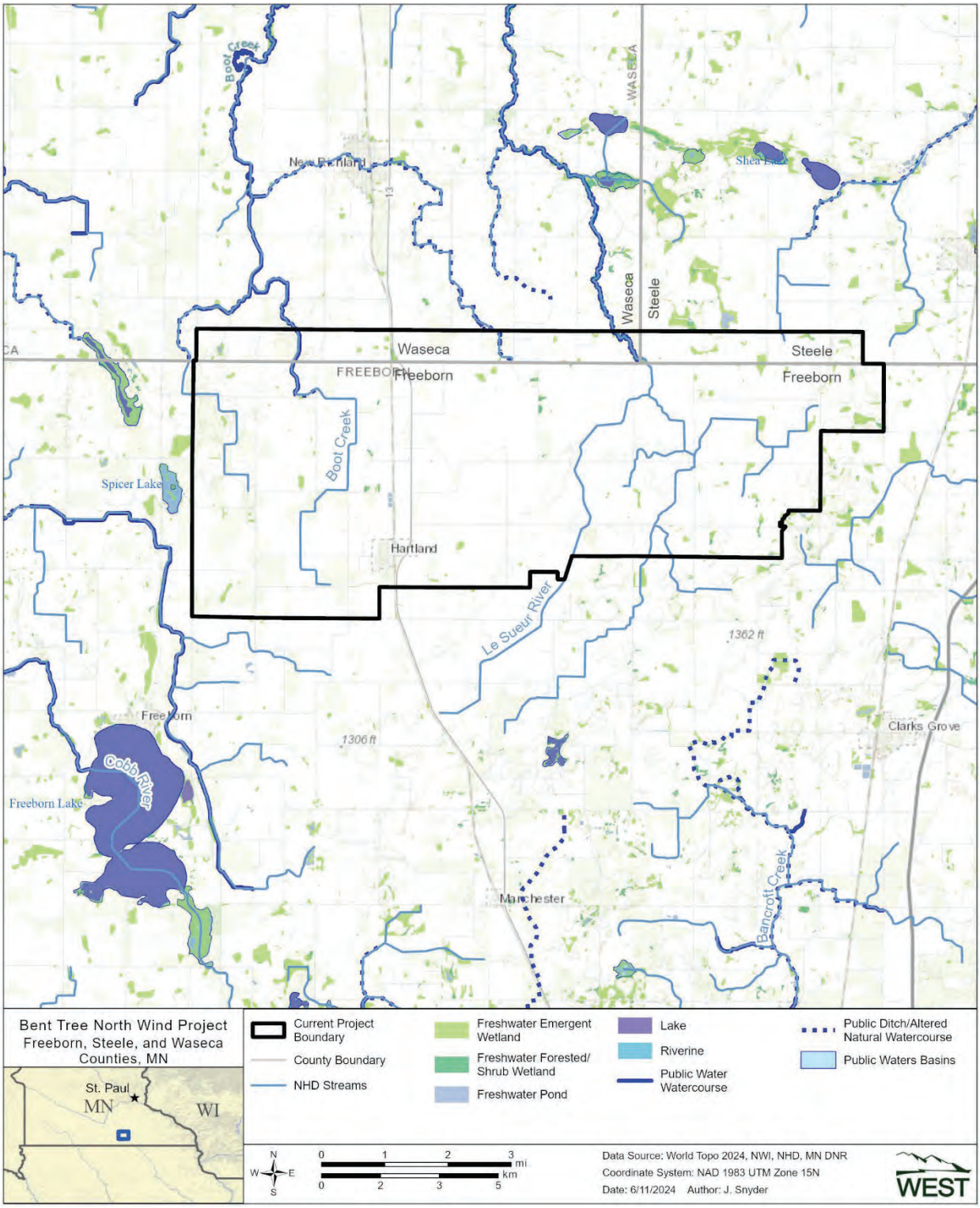

Figure 5-3. **National Wetlands Inventory (NWI) and Minnesota Department of Natural Resources Public Waters Inventory (PWI) wetlands types located in or near the Bent Tree North Wind Project in Freeborn, Steele, and Waseca Counties, Minnesota.**

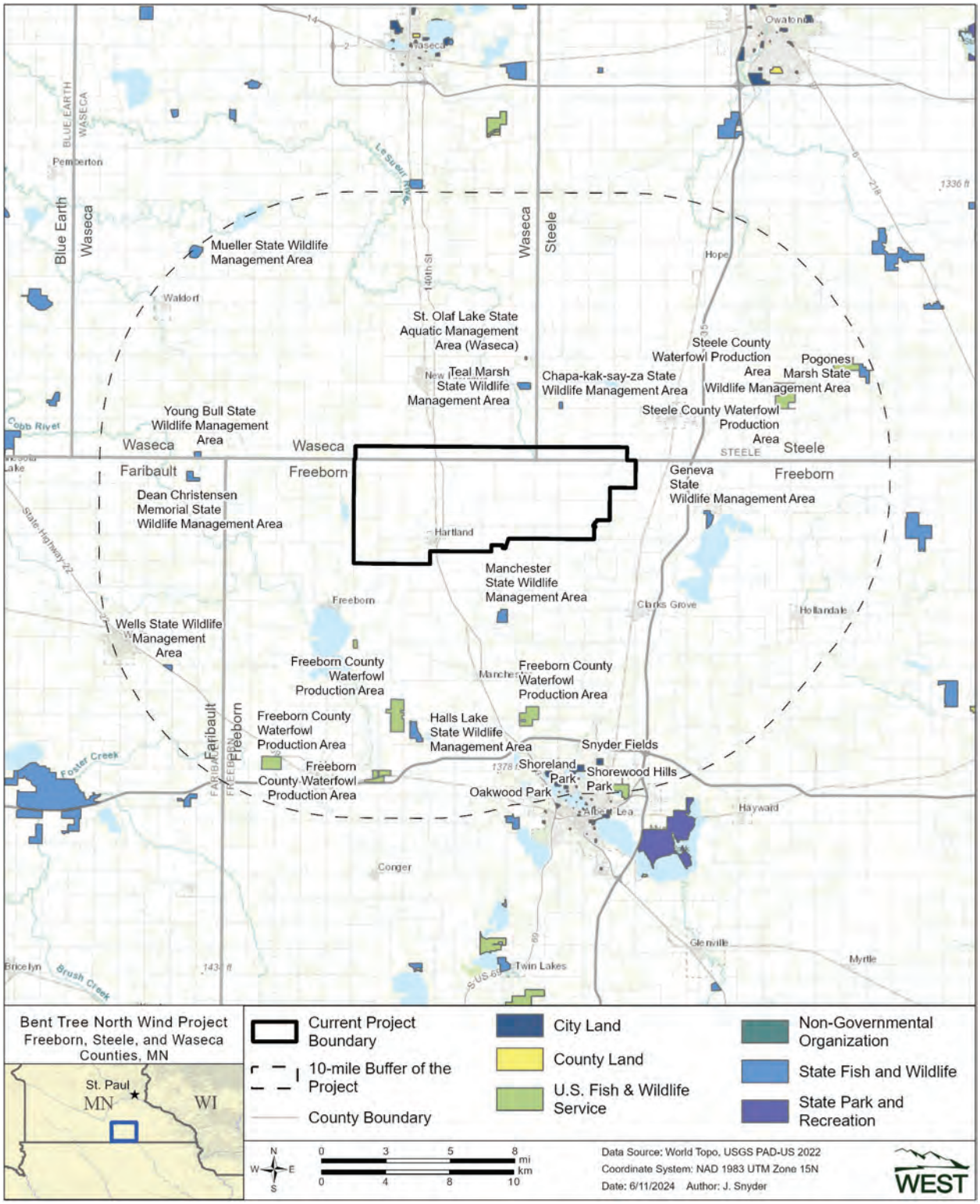

Figure 5-4. Federally, state, and city-owned and managed lands located in or near the Bent Tree North Wind Project in Freeborn, Steele, and Waseca Counties, Minnesota.

5.4 IMPORTANT BIRD AREAS

The National Audubon Society (Audubon) has identified Important Bird Areas (IBAs) that provide essential bird habitat on both a global and a continental (state) scale. No IBAs are located within 20 miles of the Project (Figure 5-5). The closest IBA is Elk Creek Marsh, located approximately 26 miles south of the Project in Iowa (Audubon 2024; Figure 5-5). Elk Creek Marsh IBA includes 2,911 acres surrounding Elk Creek and contains wetland and grassland areas that support a great blue heron rookery and other marsh nesting species (Iowa Audubon 2024). The Upper Minnesota River Valley IBA is located approximately 34 miles northeast of the Project (Figure 5-5). The Upper Minnesota River Valley IBA contains 176,697 acres, including numerous wildlife management areas and four state parks (Audubon 2013). The Minnesota River flows throughout the Upper Minnesota River Valley IBA and provides a diversity of habitats for migrating and nesting species, including a continuous band of flood plains, riparian areas, wooded and grassy hillsides, marshes and swamps. (Audubon 2013). The Swan Lake IBA is located approximately 40 miles northwest of the Project (Figure 5-5). This IBA covers 43,654 acres and includes the 10,000-acre Swan Lake, as well as three smaller lakes, Mud Lake, Middle Lake, and Little Lake (Audubon 2012). The Swan Lake IBA is considered to have ornithological significance as it the largest prairie pothole type wetland in the U.S. (Audubon 2012).

5.5 NATIVE PLANT COMMUNITIES

Review of the MNDNR native plant community data identified one native plant community type within the Project (Figure 5-6; MNDNR 2024a). There are 25 acres of the Mesic Prairie (southern) native plant community in the western portion of the Project bordering State Highway 13. Native prairie remnants provide some of the last and best quality remaining native prairie habitat in Minnesota (MNDNR 2024a). Additionally, there is an area of Southern Mesic Oak-Basswood Forest bordering the southern portion of the Project (Figure 5-6).

5.6 AREAS OF NATURAL SIGNIFICANCE IN MINNESOTA

Sites of Biodiversity Significance (SBS) in Minnesota have been systematically mapped and ranked by the MNDNR as part of the Minnesota Biological Survey (MBS). The survey has led to the development of geospatial databases that illustrate the highest quality native plant communities remaining in surveyed counties as well as SBS within Minnesota that can help with decision-making when planning development and conservation efforts. Biodiversity significance ranks include outstanding, high, moderate, and below. Sites with a rank of "outstanding" contain the rarest species and examples of the rarest native plant communities and/or the largest, most ecologically intact or functional landscapes. Sites with a rank of "high" contain very good quality occurrences of the rarest species, high-quality native plant communities or important functional landscapes. Sites with a rank of "moderate" contain occurrences of rare species, moderately disturbed native plant communities, and/or landscapes that have strong potential for recovery of native plant communities and characteristic ecological processes. Sites ranked "below" lack occurrences of rare species or do not meet MBS standards for other rankings.

The Project Site contains three SBS units (Figure 5-7; MNDNR 2024b). One area is classified as having "moderate" levels of biodiversity (located along State Highway 13 and includes the area designated as a Mesic Prairie native plant community, see Section 5.5) and two areas are classified as having "below" MBS standards (one area coincides with a freshwater emergent wetland located in the northeast portion of the Project and the other coincides with a stand of deciduous forest in the south-central portion of the Project). No areas classified as "high" or "outstanding" occur within the Project.

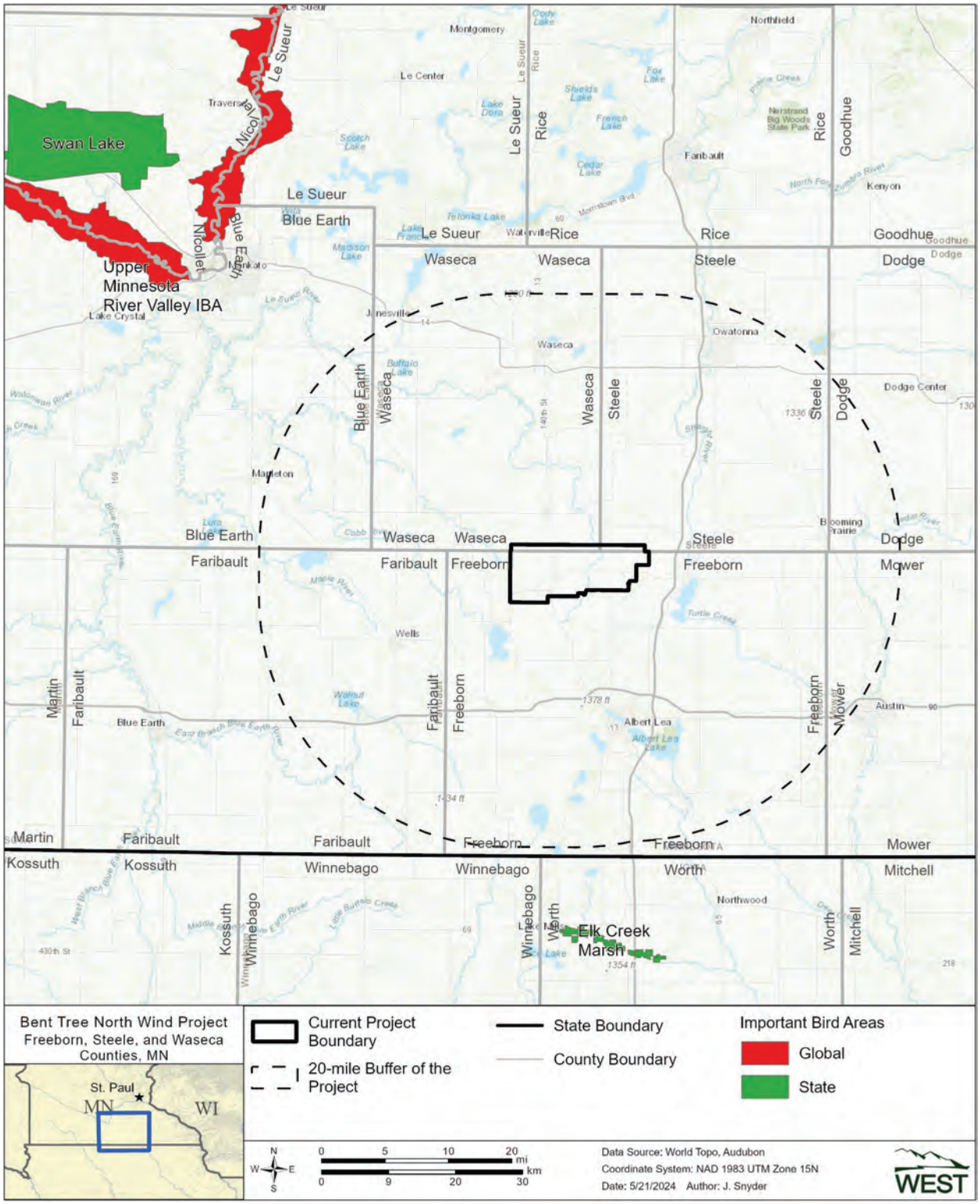

Figure 5-5. Important Bird Areas located in or near the Bent Tree North Wind Project in Freeborn, Steele, and Waseca Counties, Minnesota.

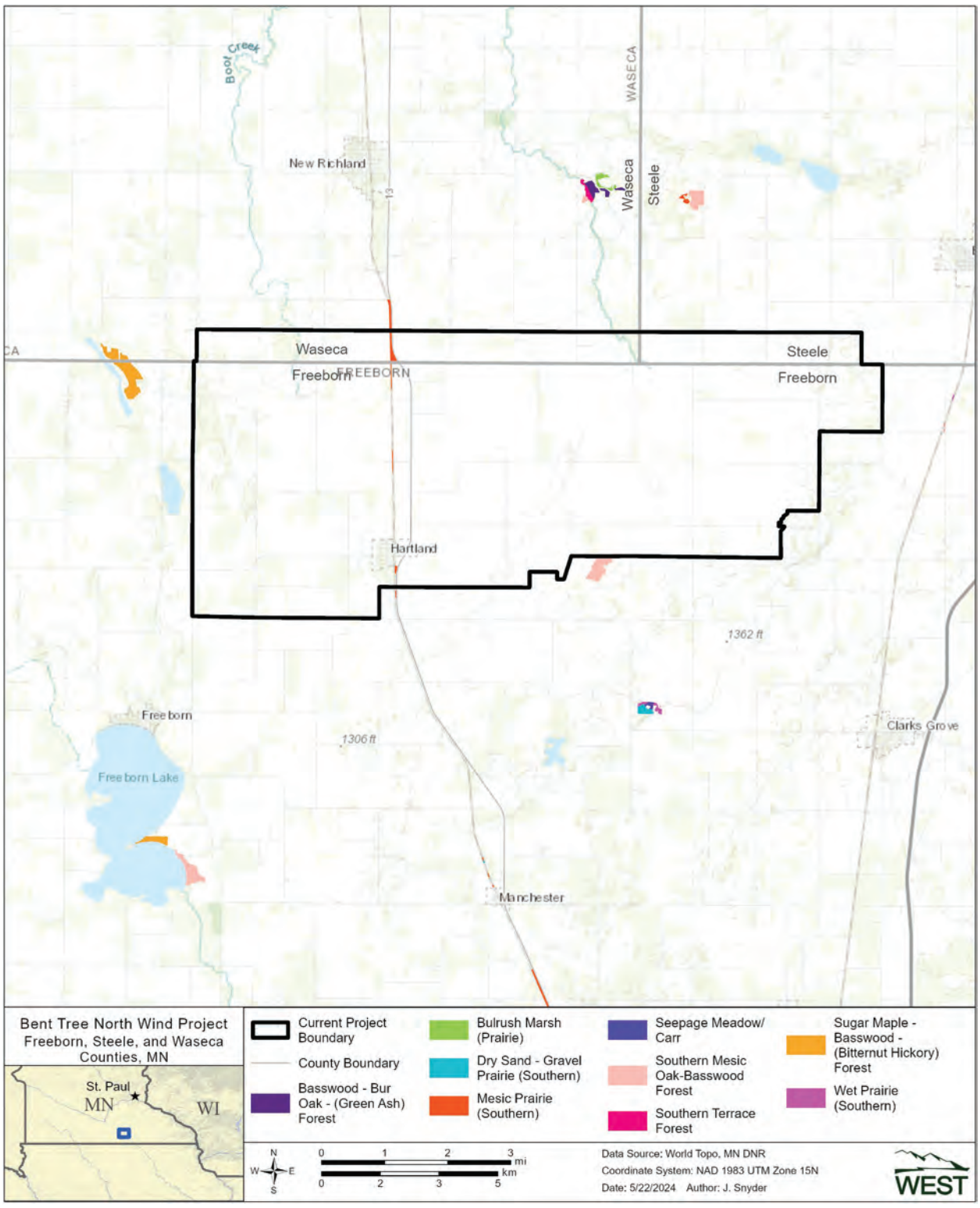

Figure 5-6. Native plant communities located in or near the Bent Tree North Wind Project in Freeborn, Steele, and Waseca Counties, Minnesota.

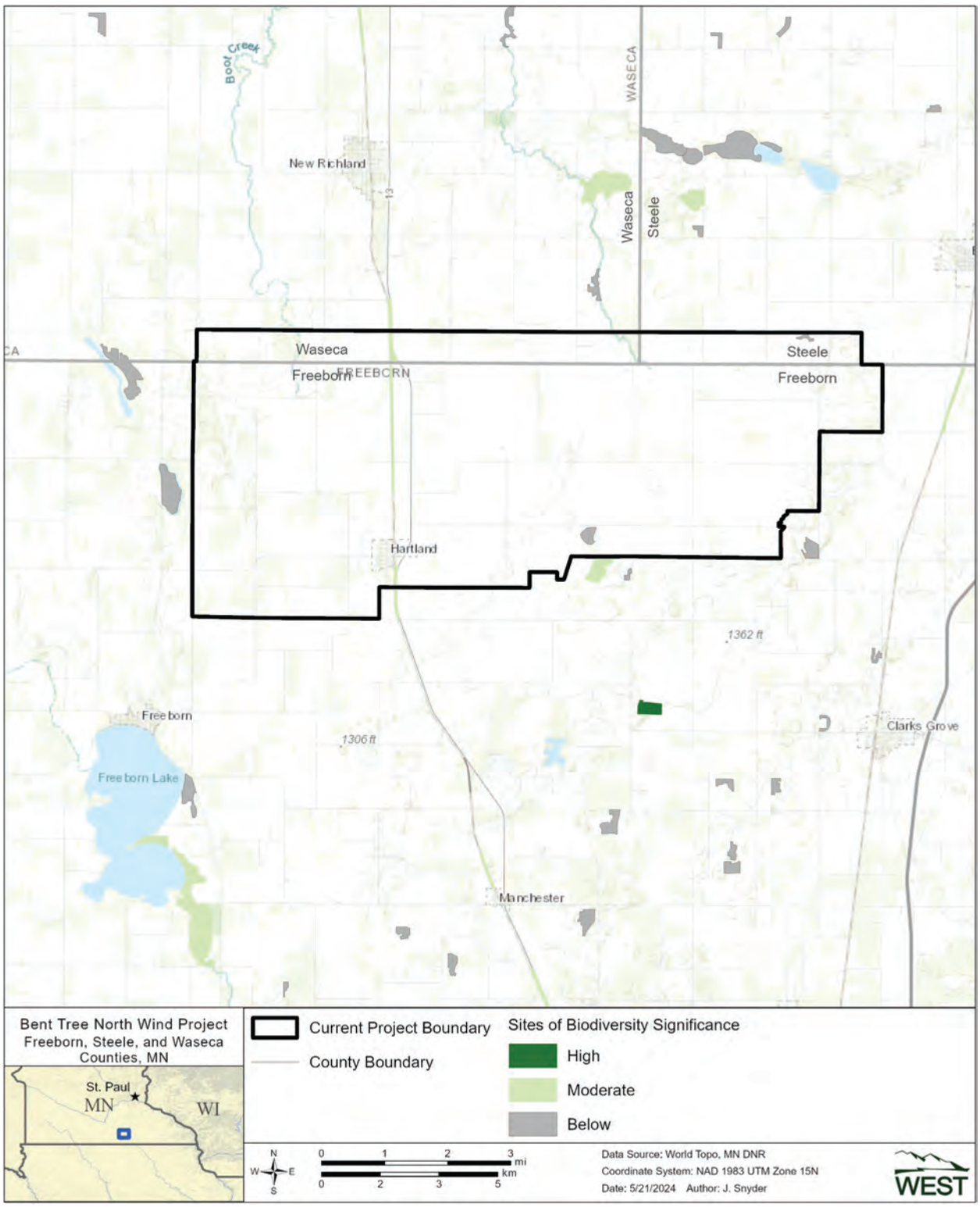

Figure 5-7. Sites of biodiversity significance located in or near the Bent Tree North Wind Project in Freeborn, Steele, and Waseca Counties, Minnesota.

5.7 FEDERALLY AND STATE-LISTED SPECIES

Twenty-six federally and state-listed species with potential to occur within or be impacted by the Project, have been identified through queries of the USFWS Information for Planning and Consultation database (2024b), MNDNR NHIS (MNDNR 2024c), and the MNDNR county lists through the Rare Species Guide (2022b). These include federally of state-listed endangered, threatened, or candidate species and bald and golden eagles protected under the BGEPA.

Seven federally protected species (two of which are also state endangered), one species that is a candidate species for listing under the ESA , and one species that is proposed for listing as endangered under the ESA were identified as possibly occurring within the Project area, including 3 birds, 2 plants, 2 mammals, and 2 insects (USFWS 2024c, MNDNR 2022b; Table 5-1). One of these species, although federally-listed, is not endangered, threatened, or protected under the BGEPA: and the whooping crane (*Grus americana*) is part of an experimental population in the Midwest and designated as non-essential. While most prohibitions on take do not apply to this non-essential population, some protections under the ESA do still apply, including a prohibition on the intentional take of any whooping crane in this population. No federally designated critical habitats occurred within the Project area (USFWS 2024c). Nineteen state-listed endangered or threatened species were identified in the MNDNR NHIS and MNDNR county lists with the potential to occur in Freeborn, Steele, or Waseca counties, including 10 plants, 4 mussels, 2 reptiles, 2 birds, and 1 fish (MNDNR 2022b, MNDNR 2024c; Table 5-1.).

Table 5-1. Federal-listed, candidates for listing or proposed for listing species and state-protected species with potential to occur and/or known occurrence within Bent Tree North Wind Project, Freeborn, Steele, and Waseca Counties, Minnesota.

SPECIES	MINNESOTA STATUS	FEDERAL STATUS	POTENTIAL OCCURRENCE WITHIN THE PROJECT[7]	REFERENCE
Plants				
Butternut	Endangered	–	Unlikely	MNDNR 2022b
Davis' sedge	Threatened	–	Unlikely	MNDNR 2022b
Edible valerian	Threatened	–	Occurs[2]	MNDNR 2024c
Hooded arrowhead	Threatened	–	Unlikely	MNDNR 2022b
James' sedge	Threatened	–	Unlikely	MNDNR 2022b
Minnesota fawnlily	Endangered	Endangered	Unlikely	MNDNR 2022b
Sullivant's milkweed	Threatened	–	Occurs[2]	MNDNR 2024c
Tuberous Indian plantain	Threatened	–	Occurs[2]	MNDNR 2024c
Western prairie fringed orchid	Endangered	Threatened	Unlikely	MNDNR 2022b
Wild quinine	Threatened	–	Unlikely	MNDNR 2022b
Animals				
Bald eagle[1]	–	BGEPA	Occurs[3]	USFWS 2024c
Blanding's turtle	Threatened	–	Unlikely	MNDNR 2022b
Ellipse mussel	Threatened	–	Unlikely	MNDNR 2022b

SPECIES	MINNESOTA STATUS	FEDERAL STATUS	POTENTIAL OCCURRENCE WITHIN THE PROJECT[7]	REFERENCE
Fluted-shell mussel	Threatened	–	Unlikely	MNDNR 2022b
Golden eagle	–	BGEPA	Possible	USFWS 2024c
Henslow's sparrow	Endangered	–	Possible	MNDNR 2022b
Loggerhead shrike	Endangered	–	Unlikely	MNDNR 2022b
Monarch butterfly[1]	–	Candidate	Possible[6]	USFWS 2024c
Mucket mussel	Threatened	–	Unlikely	MNDNR 2022b
Northern long-eared bat[1]	–	Endangered	Possible[2,4]	USFWS 2024c
Pugnose shiner fish	Threatened	–	Unlikely	MNDNR 2022b
Rusty patched bumble bee	–	Endangered	Possible	MNDNR 2022b
Spike mussel	Threatened	–	Unlikely	MNDNR 2022b
Tricolored bat[1]	–	Proposed Endangered	Likely[2,4,5,6,7]	USFWS 2024c
Whooping crane[1]	–	EXPN	Possible	USFWS 2024c
Wood turtle	Threatened	–	Unlikely	MNDNR 2022b

MNDNR = Minnesota Department of Natural Resources; USFWS = US Fish and Wildlife Service; BGEPA = Bald and Golden Eagle Protection Act of 1940; EXPN = Experimental population, non-essential

1. Identified in the Critical Issues Analysis (CIA) as having potential to occur within the Project through a previous IPaC request (Westwood 2024).
2. These species are known to occur within the Project area based on a Natural Heritage Information System query (MNDNR 2024c).
3. Known to occur within the Project area based on pre-construction avian use surveys (McDonald and Pickle 2018a; Pickle et al. 2023).
4. A presence/absence survey in 2018 and 2024 indicated probable absence of this species in the summer (Hyzy and McDonald 2019). However, it could migrate through the area in the spring or fall.
5. Calls that Kaleidoscope software identified as potential tricolored bat calls were recorded during the 2018 pre-construction general bat acoustic surveys, but these calls were not qualitatively reviewed to confirm presence (Hyzy and McDonald 2019). It is possible that the species occurs in the Project area during the spring, summer, and/or fall.
6. Species probability of occurrence within the Project was not reviewed in the CIA (Westwood 2024).

   Unlikely—The Project is outside the species' known range or suitable habitat appears absent in the Project area. The species may have restricted mobility and population size; however, the species may occur in the Project during migration or other times of the year.

   Possible—The Project is within the species' known range, but the Project contains limited suitable habitat; and/or the species is highly mobile and may occur year-round.

   Likely—The Project is within the species' known range and contains suitable habitat.

   Occurs—Records exist of the species' occurrence in the Project based on the sources described above or other survey data.

5.8 EXAMINATION OF EAGLE USE IN SOUTH CENTRAL/SOUTHEASTERN MINNESOTA

Minnesota is outside of the breeding range of the golden eagle, but a small number of individuals are found in the state during migration and over winter (Katzner et al. 2020, NatureServe 2022). Winter habitat in the Midwest includes reservoirs and wildlife refuges. Golden eagles are known to

utilize riparian corridors and the bluff country east of the Mississippi River (Katzner et al. 2020, MNDNR 2022a). A small winter population (approximately 130 golden eagles) occurs from November through March in the bluff country of southeastern Minnesota, northeastern Iowa, western Wisconsin, and northern Illinois (Goetzman 2014) and individual birds may migrate through the region (Katzner et al. 2020). The Project Area is approximately 59 miles west of Rushford, Minnesota, which has the highest concentration of golden eagle records in eBird for both Minnesota, Iowa, and Wisconsin from 2011 – 2022 (eBird 2023).

In Minnesota, bald eagles generally nest in large trees near lakes and rivers, historically in remote areas (MNDNR 2019b). Their nesting range has expanded from northern Minnesota and currently nesting occurs throughout much of Minnesota, including in the southern portion of the state (MNDNR 2019c). Bald eagles are also known to migrate and winter in the Mississippi River Valley in Minnesota and Iowa, but in much higher numbers than golden eagles (MNDNR 2019a). Although no estimate of the wintering population along the Mississippi River Valley exists, the area is considered important to significant numbers of migrating and wintering bald eagles (MNDNR 2019a).

6.0 Tier 3 – Field Studies to Document Site Wildlife and Habitat and Predict Project Impacts

Based on the results of the Tier 2 analysis and agency consultations, Tier 3 wildlife surveys were conducted for the Project. These scientifically rigorous studies targeted wildlife usage in the Project area. They were conducted in a manner consistent with the Tier 3 approach in the WEGs and the MNDNR and MNDOC Avian and Bat Survey Protocols for Large Wind Energy Conversion Systems in Minnesota to assess the potential risks of the Project. Analysis and results of the Tier 3 surveys are summarized below.

6.1 AVIAN SURVEYS

The Tier 3 analysis for the Project included avian use surveys from 2017 – 2018 and from 2022 – 2023, as well as raptor and eagle nest monitoring surveys. Surveys were focused on potential bird habitat in the Project area.

6.1.1 Avian Use Surveys (2017 – 2018)

Avian use surveys were conducted at the Project from October 2017 - September 2018 and included large bird/eagle use surveys, small bird use surveys, and songbird migration surveys (McDonald and Pickle 2018a). The fixed-point avian use survey methods were based on recommendations in Tier 3 of the WEGs (USFWS 2012), Appendix C of the ECPG (USFWS 2013), and the MNDNR and MNDOC Avian and Bat Survey Protocols for Large Wind Energy Conversion Systems in Minnesota (Mixon et al. 2014).

Large Bird/Eagle Use Surveys

Large bird/eagle use surveys were comprised of monthly surveys at 10 fixed points. Birds within 800-meters of the survey point and up to of 200 meters above ground level (AGL; Figure 6-1) were recorded. Surveys consisted of 60-minute counts where all large birds were recorded for the first 20 minutes, and only eagles were recorded for the remaining 40 minutes. Additional minute-by-minute data was collected for eagle observations based on recommendations in the ECPG and the Revisions to Regulations for Eagle Incidental Take and Take of Eagle Nests (USFWS 2016). Large birds were defined as waterbirds, waterfowl, rails and coots, grebes and loons, gulls and terns, shorebirds, diurnal raptors, owls, vultures, upland game birds, doves and pigeons, large corvids (i.e., ravens, magpies, and crows), and goatsuckers.

One hundred and twenty large bird use surveys were conducted over 12 visits. A total of 1,302 large individual birds representing 18 identifiable species were observed during the surveys. No federally or state-listed endangered or threatened species were observed during the surveys or incidentally. Three Species of Greatest Conservation Need (SGCN) were recorded in the fall including: northern harrier (*Circus hudsonius*; 2 observations), American kestrel (*Falco sparverius*; 1), and Franklin's gull (*Leucophaeus pipixcan*; 8; Appendix C in MNDNR 2015). The most abundant large bird species recorded were Canada goose (*Branta canadensis*; 589) and snow goose (*Anser caerulescens*; 460). Large bird use (observations/800-meter plot/20-minute survey) was highest during spring (8.20), followed by fall (2.30), summer (1.43), and winter (0.27). Overall, 81.2% of flying large birds were recorded within the rotor-swept height (RSH) (i.e., 25–150 meters AGL), 18.2% were below the RSH (< 25 meters AGL), and 0.6% were above the RSH (>150 meter AGL). Most flying diurnal raptors were recorded within the RSH (68.0%), while 24.0% were below the RSH and 8.0% were above the RSH.

Thirty-five bald eagle observations were recorded during the surveys. No golden eagles were observed during surveys or incidentally. Eagle use was highest during spring (0.60 observation/plot/60-minute survey), followed by fall (0.07), winter (0.03), and summer (0.01). Flight paths and perch locations of bald eagles showed activity in spring generally spread throughout the Project area, with several flights observed along the Le Sueur River in the north-central Project area.

Small Bird Use Surveys

Small bird use surveys consisted of counts at the same 10 survey points used for large bird/eagle use surveys (Figure 6-1). Surveys were conducted once a month and consisted of 10-minute counts with a 100-meter radius plot centered on the survey point. The 10 survey points were sampled twice a month during spring migration (March through May) and fall migration (September through November). Small birds were defined as passerines (excluding large corvids), kingfishers, swifts and hummingbirds, woodpeckers, and cuckoos.

A total of 1,228 individual small birds representing 40 identifiable species were observed during the surveys. No federally or state-listed T&E species were observed during the surveys or incidentally. Six SGCN were recorded, including sedge wren (*Cistothorus platensis*; 5 observations), bobolink (*Dolichonyx oryzivorus*; 8), dickcissel (*Spiza americana*; 9), field sparrow (*Spizella pusilla*; 1), red-headed woodpecker (*Melanerpes erythrocephalus*; 3), and eastern meadowlark (*Sturnella magna*; 5). More than half of the small bird observations were attributed to 4 species: red-winged blackbird (*Agelaius phoeniceus*; 36.6% of observations), cliff swallow (*Petrochelidon pyrrhonota*; 14.3%), song sparrow (*Melospiza melodia*; 9.4%), and common grackle (*Quiscalus quiscula*; 8.3%). Mean small bird use (observations/100-meter plot/10-minute survey) was highest in summer (9.03), followed by fall (7.72), spring (7.08), and winter (2.30). Overall, 36.8% of flying small birds were recorded within the RSH, 63.2% were below the RSH, and 0% were above the RSH.

Songbird Migration Surveys

Songbird migration surveys consisted of 6 survey points that were different than the locations used for large bird/small bird use surveys (Figure 6-2). The songbird migration survey plot locations were sited to be located on/adjacent to areas with potential habitat for SGCN and federally or state-listed avian species. Songbird migration surveys were conducted twice per month during the fall (October – November 2017, September 2018) and spring (March – May 2018). Surveys consisted of 10-minute counts conducted from a half hour before sunrise to 4 hours after sunrise. A 100-meter plot radius was used for songbird migration surveys.

A total of 1,156 observations representing 36 small bird species were documented over the course of 72 fixed-point songbird migration surveys. No federally or state-listed T&E species were observed during the surveys or incidentally. Four SGCN were recorded including: grasshopper sparrow (*Ammodramus savannarum*; 4), red-headed woodpecker (1), eastern meadowlark (1), and brown thrasher (*Toxostoma rufum*; 1). Four species accounted for more than 70% of observations: red-winged blackbird (37.0%), common grackle (15.6%), song sparrow (12.5%), and cliff swallow (8.3%). Mean small bird use (observations/100-meter plot/10-minute survey) was highest in fall (16.11), followed by spring (16.00). More than 80% of flying small birds were recorded within the RSH, 18.4% were below the RSH, and 0% were above the RSH.

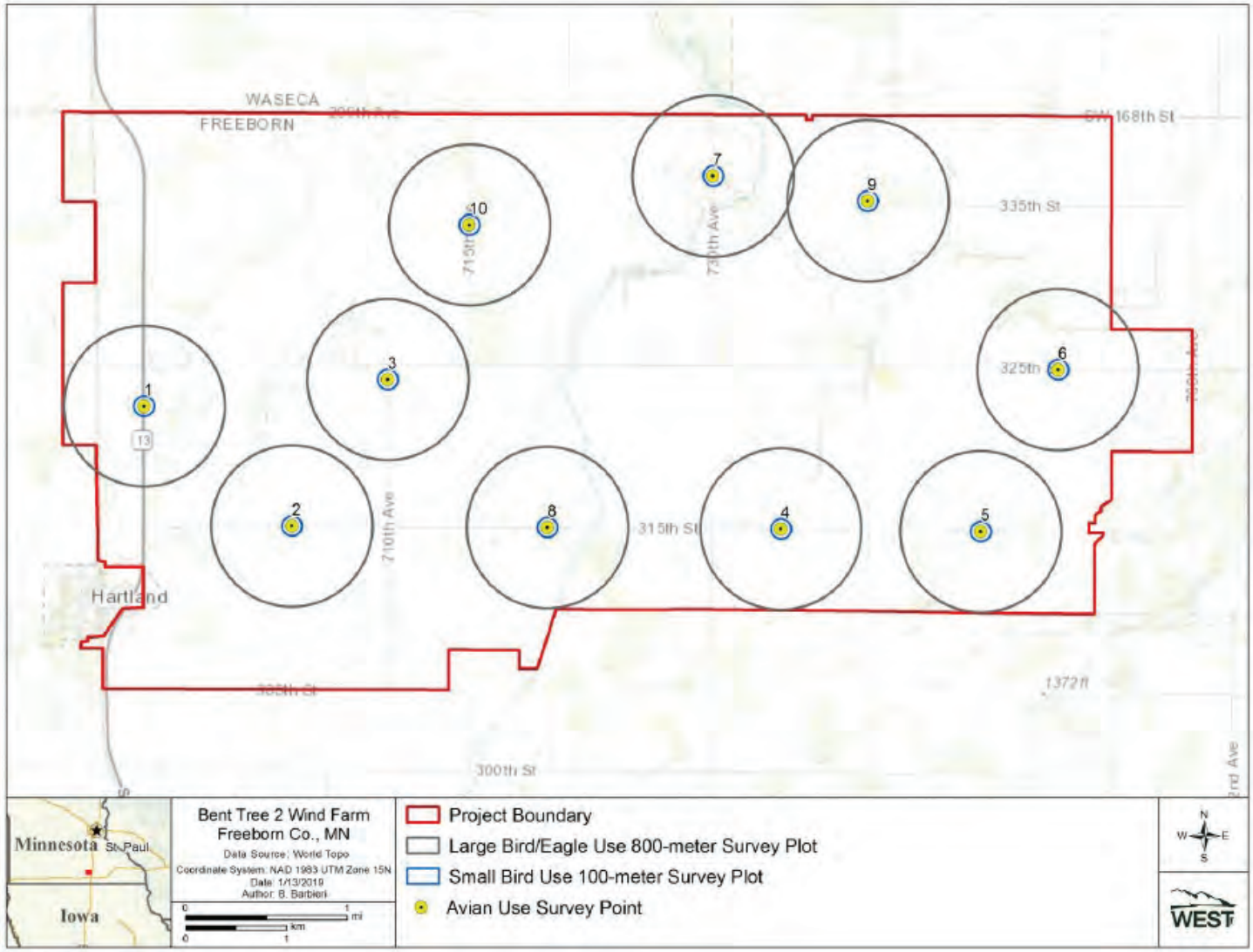

Figure 6-1. **Large bird/eagle use survey locations and small bird use survey points for the Bent Tree North Wind Project in Freeborn County, Minnesota, from October 2017 – September 2018 (McDonald and Pickle 2018a).**

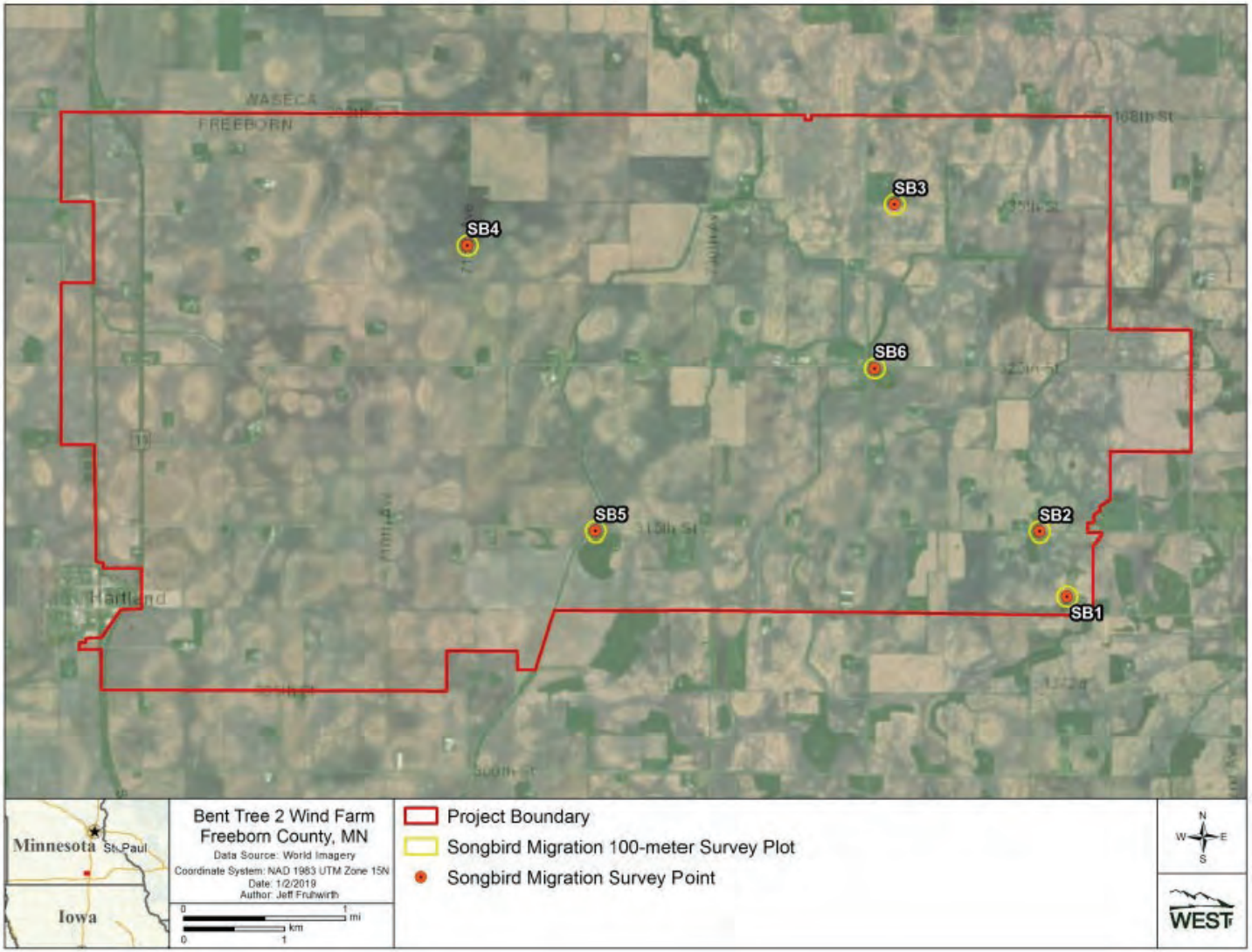

Figure 6-2. Songbird migration survey locations for the Bent Tree North Wind Project in Freeborn County, Minnesota, from October 2017 – September 2018 (McDonald and Pickle 2018a).

6.1.2 Avian Use Survey (2022 – 2023)

Avian use surveys were conducted at the Project from June 22, 2022 – May 26, 2023 (Pickle et al. 2023). The fixed-point avian use survey methods were the same as the 2017-2018 avian use surveys, with the exception that no songbird migration surveys were conducted. Monthly surveys were conducted at 18 surveys points; 10 of the survey points were originally used during surveys conducted from 2017 – 2018 at the Project (Figure 6-3).

Large Bird/Eagle Use Surveys

During large bird use surveys for the Project, 3,192 individual large birds representing 28 identifiable species were observed during 215 large bird surveys. No federally or state-listed T&E species were observed during the surveys or incidentally. Two species designated as both MNDNR SPC and Minnesota SGCN were observed: Franklin's gull (215 observations), and trumpeter swan (*Cygnus buccinator*; 17; MNDNR 2013). Two additional species designated as Minnesota SGCN were observed: American kestrel (29) and northern harrier (13; MNDNR 2015). Waterfowl (1,153 observations; mostly Canada goose and greater white-fronted goose [*Anser albifrons*] in spring) and doves/pigeons (860; mostly rock pigeon [*Columba livia*] and mourning dove [*Zenaida macroura*]) were the most abundant large bird types observed. Large bird mean use was highest in spring (25.41 observations/800-meter radius plot/60-minute survey), followed by winter (16.36) and fall (14.50), and the lowest mean use was recorded in summer (2.91). Mean large bird flight heights ranged from 5 meters for upland game birds to 209 meters for gulls/terns. Overall, 63.9% of large bird observations were flying within the RSH.

Thirty-four bald eagle observations were made during surveys, and 12 additional observations were documented incidentally. No golden eagles were observed during surveys or incidentally. Bald eagle mean use was highest in the spring (0.26 observations/800-meter plot/60-minute survey), followed by winter (0.21) and fall (0.13). No bald eagles were observed in the summer. Twenty-six bald eagles were observed flying within the RSH with the highest eagle exposure minutes in March (51 exposure minutes, 2.8 exposure minutes/survey hour) and April (40 exposure minutes, 2.2 exposure minutes/survey hour). The seasonal increase of bald eagles observations in the spring is attributed to a pair of bald eagles nesting near Point 5 in 2023, rather than sustained large congregations of bald eagles within the Project.

Small Bird Use Surveys

A total of 2,044 individual small birds representing 48 identifiable species were observed during 215 small bird surveys. No federally or state-listed T&E species were observed during the surveys or incidentally. Eight species designated as Minnesota SGCN were observed, including common nighthawk (*Chordeiles minor*; 3 observations), yellow-headed blackbird (*Xanthocephalus xanthocephalus*; 4), dickcissel (10), black-billed cuckoo (*Coccyzus erythropthalmus*; 1), bobolink (3), red-headed woodpecker (11), grasshopper sparrow (2), and upland sandpiper (*Bartramia longicauda*; 2; MNDNR 2015).

The species most observed during the surveys include Lapland longspur (*Calcarius lapponicus*; 338) and tree swallow (314). The high number of individuals were due to several large flocks observed in the fall. Small bird mean use varied widely by season and was highest during migration seasons, with the highest use documented in fall (19.61 observations/100-meter plot/10-minute survey), followed by spring (10.02), summer (6.09), and winter (2.15).

6.1.3 Raptor Nest Survey (2018)

An aerial raptor nest survey was conducted to record bald eagle and other raptor nests in and near the Project area in 2018 (McDonald and Pickle 2018b). Surveys were conducted in accordance with guidance provided in the ECPG (USFWS 2013) and the USFWS *Interim Golden Eagle Technical Guidance* (Pagel et al. 2010). The aerial raptor nest survey was conducted from a helicopter on March 22 and 23, 2018, between 8:00 and 18:30 hours. Potential raptor nest habitat was surveyed by flying meandering transects from 0.25 – 1.0 miles apart, flying at speeds of approximately 46 miles per hour (mph).

Eighteen nests were observed and included 6 active bald eagle nests within 10 miles of the Project area, 7 raptor nests within 1.0 miles of the Project area, and five additional large raptor nests outside the 1.0-mile buffer that were consistent in size and shape with bald eagle nests (Figure 6-4). The nearest active bald eagle nest to the Project area was located 5.0 miles east of the Project area, along Geneva Lake (Nest ID 1532 in Figure 6-4). The nearest large raptor nest that was consistent in size and shape with a bald eagle nest was located 0.9 miles northwest of the Project area (Nest 1785 in Figure 6-4). Four of the raptor nests within the 1.0-mile buffer were occupied/active red-tailed hawk nests (*Buteo jamaicensis*) and three of these were unidentified raptor nests. Only 1 nest (unidentified raptor) was located within the Project (Nest ID 1791 in Figure 6-4). Because no active bald eagle nests were documented within 2 miles of the Project, no follow up ground-based nest-monitoring was conducted at the Project in 2018.

6.1.4 Raptor Nest Survey (2022)

Raptor nest surveys were conducted within the Project area and a 1-mile buffer from May 2 – 5, 2022 to determine if eagle or other raptor nests were present within and near the Project (Westwood Professional Services, Inc. [Westwood] 2022). Surveys were conducted from public roads within the Project and 1-mile buffer. All stick nests were mapped and photographed. Forested areas outside of the Project and 1-mile buffer were visually scanned while passing for incidental sightings of nests.

A bald eagle nest was identified on May 4, 2022, within the Project; one eagle was perched on a branch next to the nest and a second eagle was observed in a nearby tree (Figure 6-5). Four other raptor nests were observed outside of the Project area but inside the 1-mile buffer. All four were confirmed or presumed to be red-tailed hawk nests, and two appeared to be in-use based on an adult present in incubating position. Additionally, two bald eagles, unassociated with a nest, were incidentally observed within the Project and 1-mile buffer on May 2 and 5, 2022 (Figure 6-5). Ten red-tailed hawks and 8 American kestrels were also observed in or adjacent to the Project and 1-mile buffer over four days of surveys.

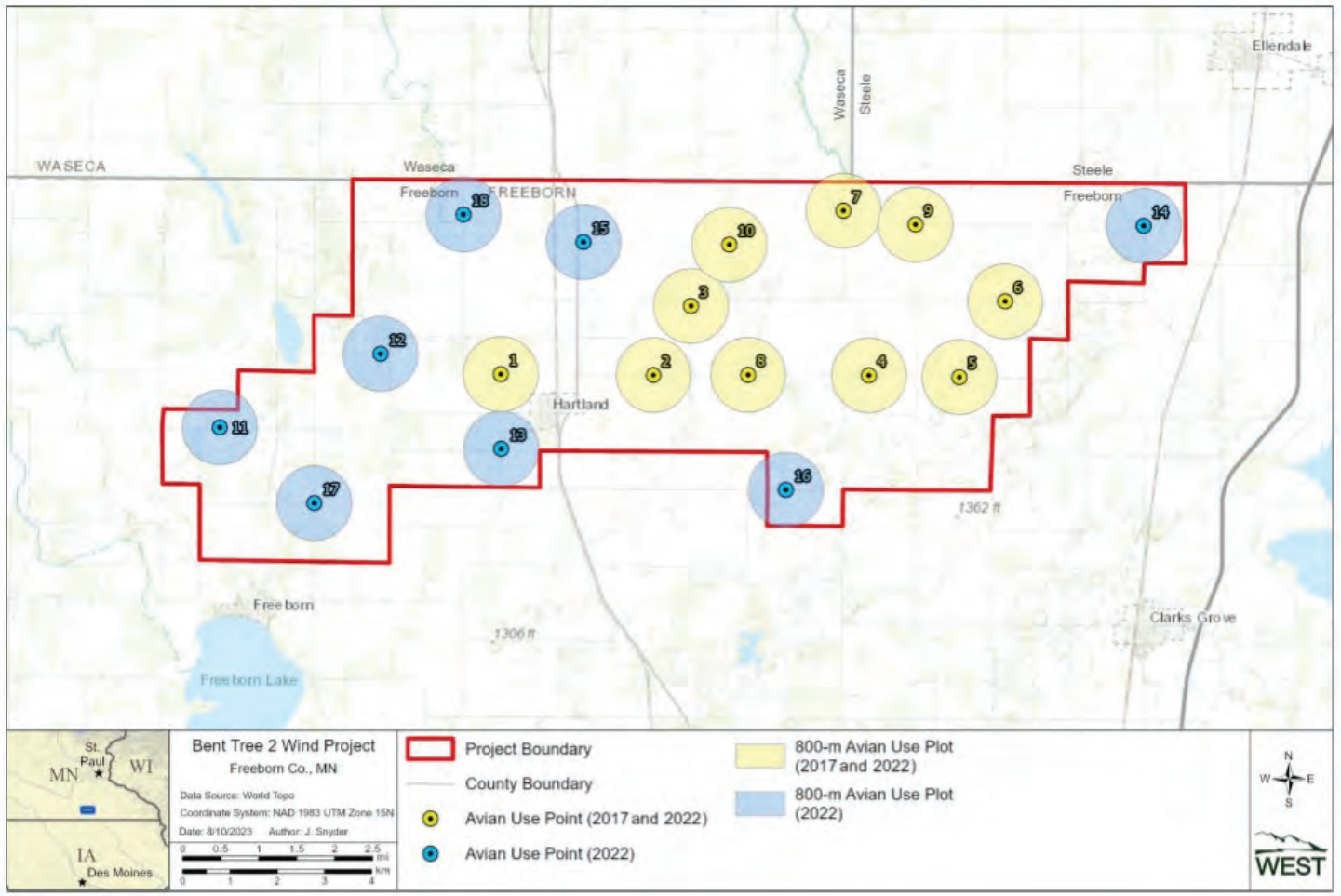

Figure 6-3. **Fixed-point survey locations used during the 2022 avian use surveys at the proposed Bent Tree North Wind Project in Freeborn County, Minnesota, from October 2022 – September 2023 (Pickle et al. 2023).**

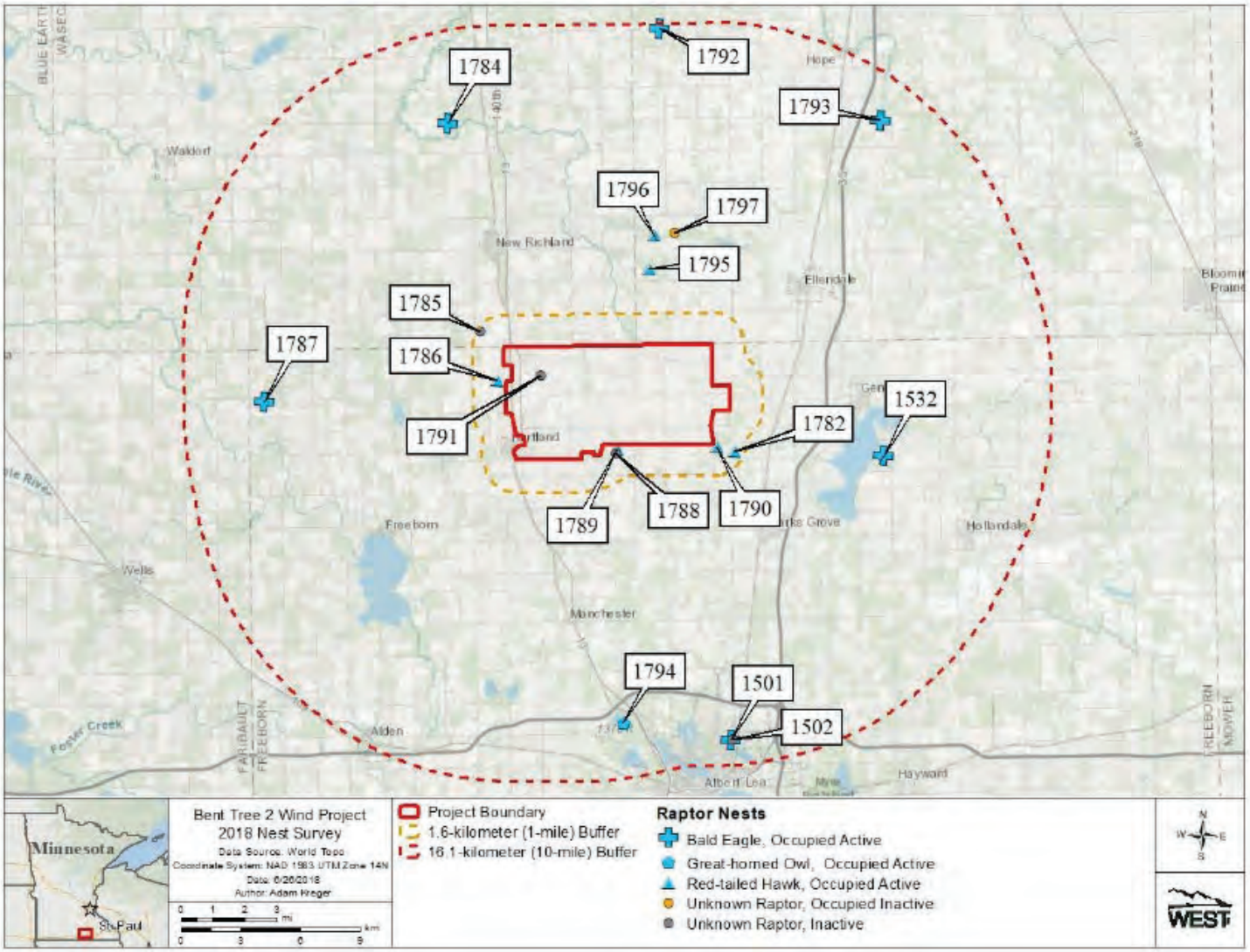

Figure 6-4. Locations of raptor nests observed near the Bent Tree North Wind Project, Freeborn County, Minnesota, in March 2018 (McDonald and Pickle 2018b).

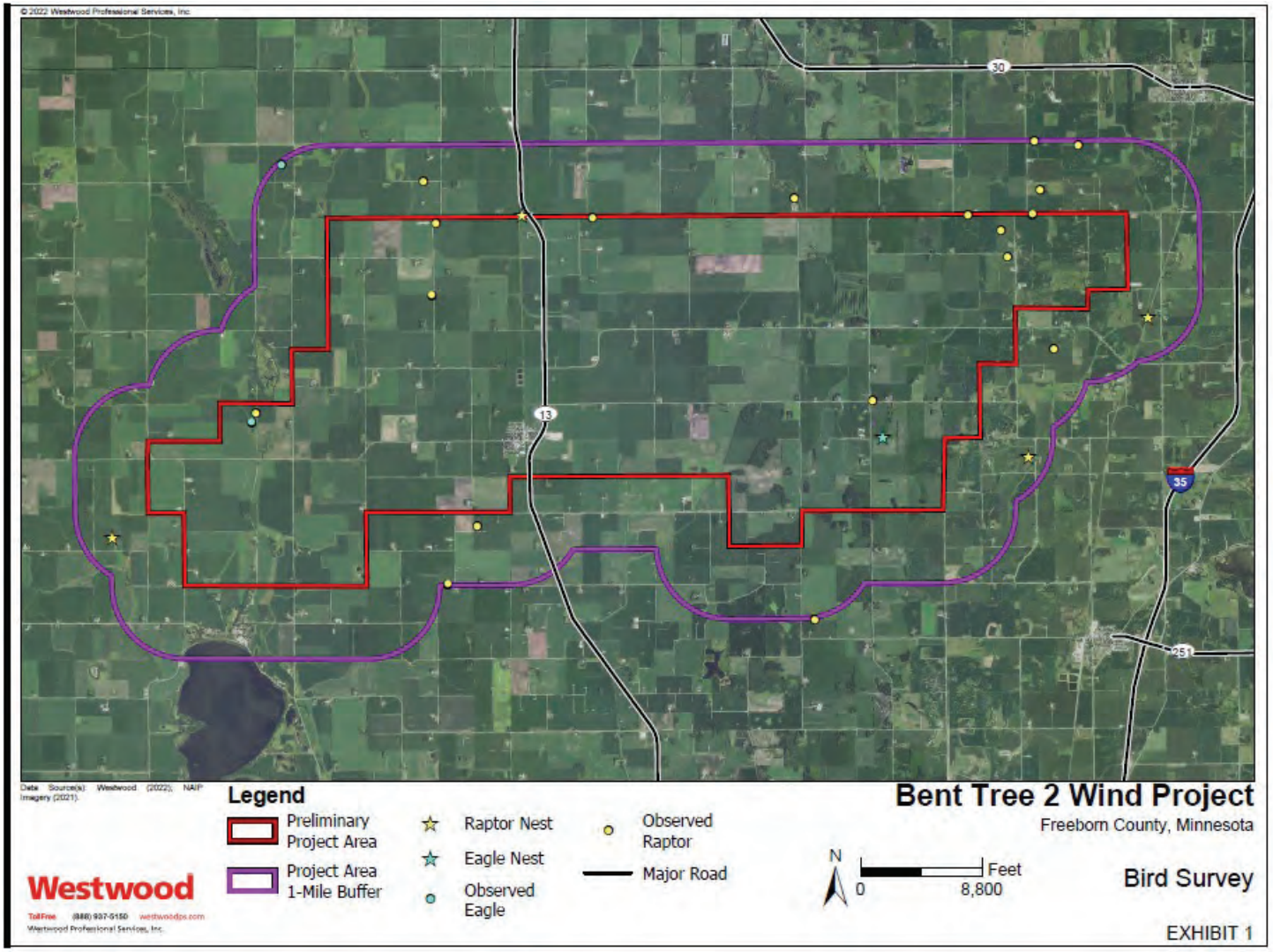

Figure 6-5. **Locations of bald eagle and raptor nests observed near the Bent Tree North Wind Project, Freeborn County, Minnesota, from May 2 – 5, 2022 (Westwood 2022).**

6.1.5 Bald Eagle Nest Monitoring (2022)

Bald eagle nest monitoring surveys were conducted at a bald eagle nest (Nest ID 23829; Figure 6-6) first documented on May 4, 2022 (Westwood 2022). Two surveys were conducted at Nest 23829 on June 2 and 7, 2022, to determine whether the nest was an active bald eagle nest and would warrant monitoring throughout the breeding season (Tuma and Voth 2022). The nest was confirmed to be an inactive bald eagle nest during these checks (Figure 6-6). The nest was in good condition, but no greenery or wash was observed to indicate recent tending, and no bald eagles were observed during either status check.

6.1.6 Eagle Nest Survey (2024)

An eagle nest survey was conducted within the Project and surrounding two-mile buffer (collectively the Project area and buffer are referred to as the Survey Area; Patterson and Tuma 2024; Figure 6-7). The objective of the eagle nest survey was to identify and record the location and status of all nests consistent in size and structure with bald eagle nests within the Survey Area. Recommendations from the USFWS WEGs (USFWS 2012), the USFWS ECPG (USFWS 2013), and the USFWS Updated Eagle Nest Survey Protocol (USFWS 2020) were followed.

Two experienced WEST biologists conducted the ground-based eagle nest survey on March 1 – 2, 2024. The survey was conducted early in the season prior to deciduous tree leaf-out to aid in detection of nests. Conducting the survey early in the season also ensured the search effort coincided with the period when eagles were likely incubating eggs or tending young and was based on chronology for nesting eagles in the region (Pagel et al. 2010, USFWS 2013). Species, nest condition, nest size, nest status, and nest substrate were recorded at each nest location to the extent possible. If an inactive nest consistent in size and structure with an eagle nest was observed, the biologists monitored the nest for four hours, or until occupancy was confirmed.

Three eagle nests were observed within the Survey Area (Figure 6-7). Two nests (nests 30604 and 23829) were located within the Project area and an additional nest (Nest 30605) was within the two-mile buffer. Nest 30605 within the two-mile buffer was an occupied active bald eagle nest with one adult incubating. Nest 30604 was an occupied active bald eagle nest with two adult bald eagles at the nest, including one in incubation position. Nest 23829 was located 0.2 miles southwest of Nest 30604 and was considered an occupied inactive alternate nest of Nest 30604 based on its condition and proximity to an occupied active nest.

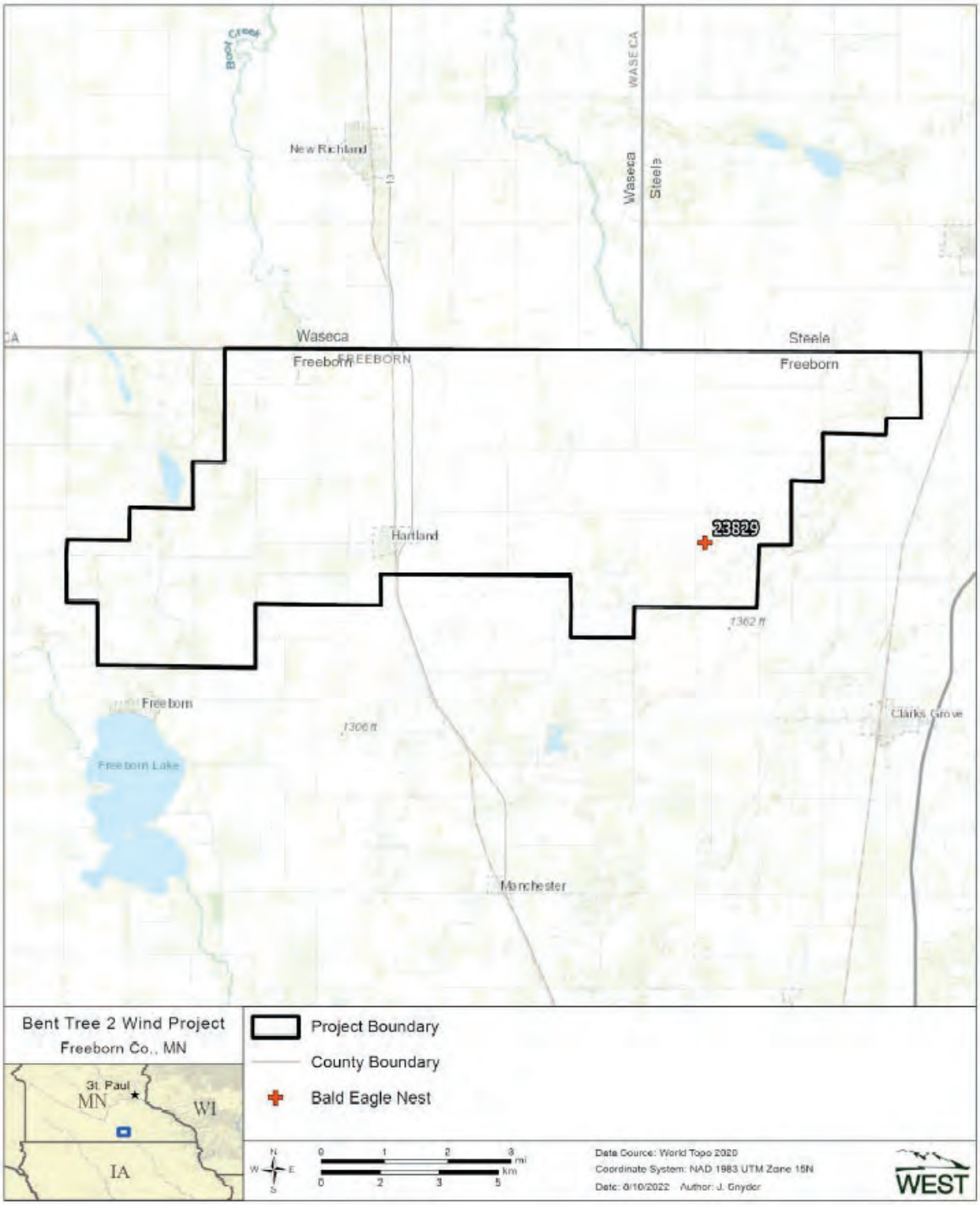

Figure 6-6. Location of the bald eagle nest observed May and June 2022 within the Bent Tree North Wind Project in Freeborn County, Minnesota (Tuma and Voth 2022).

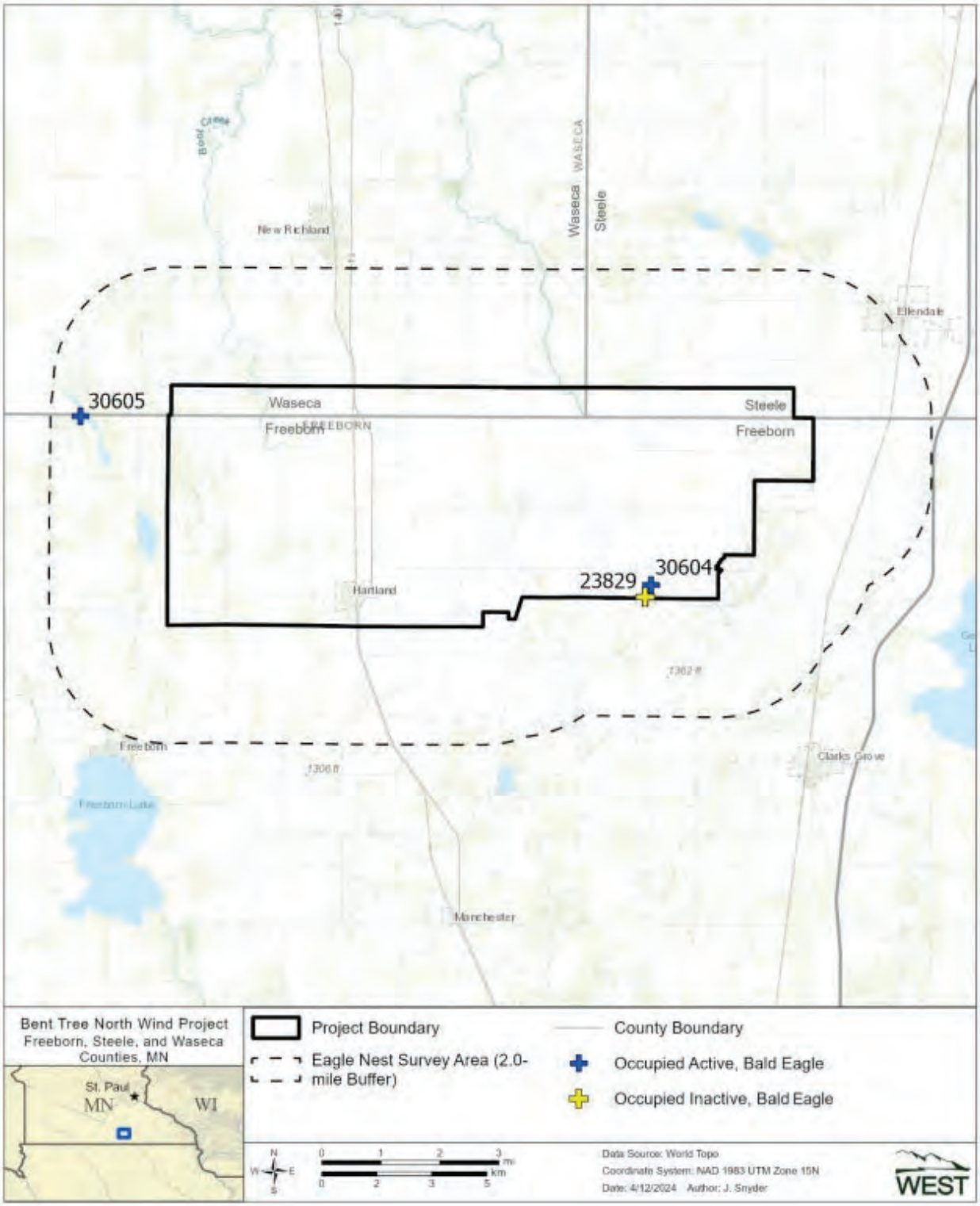

Figure 6-7. Location of bald eagle nests documented within the proposed Bent Tree North Wind Project in Freeborn, Steele, and Waseca counties, Minnesota, from March 1 – 2, 2024 (Patterson and Tuma 2024).

6.2 BATS

The Project conducted a northern long-eared bat (NLEB; *Myotis septentrionalis*) habitat assessment, a NLEB presence/probable absence acoustic survey, and general bat activity acoustic surveys in 2018, and a NLEB and tricolored bat (TRBA; *Perimyotis subflavus*) habitat assessment and summer presence/probable absence survey in 2024. These surveys were conducted to help assess potential impacts of the Project on bats. The surveys were conducted in accordance with guidance provided in the WEGs (USFWS 2012), the current at the time USFWS bat survey guidance (USFWS 2018, USFWS 2024d), and the *Avian and Bat Survey Protocols for Large Wind Energy Conversion Systems in Minnesota* (Mixon et al. 2014).

6.2.1 2018 Northern Long-eared Bat Habitat Assessment

The Project is within the range of the NLEB, which was federally listed as a threatened species at the time of the assessment, but is now federally listed as an endangered species (87 Federal Register 73488, 88 Federal Register 4908). The NLEB is under threat primarily due to population declines from white-nose syndrome. The desktop assessment was used to better understand potential use of the Project area by the NLEB and evaluated the availability of suitable NLEB habitat within and near the Project area (WEST 2018).

The desktop habitat assessment followed the Phase 1 survey recommendations found in the USFWS *Northern Long-eared Bat Interim Conference and Planning Guidance* (USFWS 2014) and 2018 *Range-Wide Indiana Bat Summer Survey Guidelines* (USFWS 2018 Guidelines; USFWS 2018). USFWS guidance called for NLEB surveys to adhere to Indiana bat (INBA; *Myotis sodalis*) survey guidelines. Because the Project location is well north of the known range of the INBA, the assessment only focused on the NLEB.

Forested habitat within the Project area predominately occurs as small (less than 15 acres) fragmented patches that would not be considered suitable summer habitat for NLEBs in the absence of connectivity with commuting/travel corridors. There are 60.5 acres of forested habitat within Project area that are included in the connected habitat buffer. Two relatively large (more than 50 acres) forested areas occur within the 2.5-mile buffer and connect to smaller habitat patches that extend within the Project area. The largest expanse of potentially suitable summer NLEB habitat occurs in the south portion of the Project area where a suitable habitat patch size of more than 50 acres located within the 2.5-mile buffer area abuts the Project boundary. If NLEBs occur in the Project area during summer, they would most likely be found in forested habitat within the connected habitat buffer.

6.2.2 2018 Northern Long-eared Bat Presence/Probable Absence Acoustic Surveys

NLEB summer presence/probable absence acoustic surveys were conducted at the Project to assess potential impacts of the Project on the NLEB (Hyzy and McDonald 2019). The acoustic surveys followed USFWS 2018 Guidelines (USFWS 2018), which are also applicable to NLEB, per the *Northern Long-Eared Bat Interim Conference and Planning Guidance* (USFWS 2014).

The desktop habitat assessment identified 60.5 acres of connected forested habitat within the Project area (WEST 2018), which required a minimum of 8 detector nights to meet USFWS 2018 Guidelines (USFWS 2018). Acoustic surveys were conducted from June 9 – 12, 2018, at 2 sites within the Project area with 2 detector locations (stations) at each site for a total of 4 acoustic survey stations (Figure 6-8). Detectors were placed in suitable habitat for NLEB, including forest edges, small clearings, and forest-canopy openings, near water sources and/or forested riparian edges.

The 4 survey stations resulted in 8 detector nights, meeting the requirement of at least 8 detector-nights per site. A total of 2,318 bat call sequences were recorded. The average number of bat calls per detector night was 290. Kaleidoscope software identified potential NLEB calls at 2 stations during the nights of June 11 and 12. However, due to the nature and quality of the calls, biologists concluded that the 6 potential NLEB calls did not have characteristics indicative of NLEB; 5 of the potential NLEB calls were re-labeled as unidentified high-frequency calls and 1 was labeled as a probable little brown bat (LBBA; *Myotis lucifugus*) call. These results indicate probable absence of NLEB within the Project during the summer season.

6.2.3 2018 General Bat Activity Report

General bat activity surveys were conducted at the Project from March 28 – October 31, 2018, to document bat activity patterns at 2 different levels and spatially within the Project area (Hyzy and McDonald 2019). One station was place at a meteorological (MET) tower, with 1 microphone at ground level ('ground station'; approximately 1.5 meters AGL) and another within the rotor-swept zone ('raised station'; approximately 45 meters AGL; Figure 6-9). The MET tower station was located in cultivated croplands, which is the dominant land cover type and is representative of potential turbine locations within the Project area (representative stations). A second detector was placed near forested habitat, offering a potentially attractive foraging area for bats (bat feature station; Figure 6-9).

The survey resulted in 622 detector-nights. Bat activity was higher at the representative ground station than at the representative raised station; however, activity at the bat feature station was 10 times greater than the representative ground station. Weekly acoustic activity at representative stations was relatively low from April through June, but was greater between July and September, peaking from September 4 – 12 (38.00 bat passes per detector-night). The peak in activity observed from September 4 – 12 was primarily driven by low frequency (LF) bats recorded at the representative ground station.

Of the total bat passes identified at representative stations, Kaleidoscope software classified 81.0% as LF (e.g., big brown bats [*Eptesicus fuscus*], hoary bats [*Lasiurus cinereus*], and silver-haired bats [*Lasionycteris noctivagans*]), and classified 19.0% of bat passes as high frequency (HF; e.g., TRBA, eastern red bats [*Lasiurus borealis*], and *Myotis* species). Hoary bats and silver-haired bats were more frequently detected by the Kaleidoscope software at the raised representative station, while big brown bats were more frequently detected at the ground representative station. LBBAs and eastern red bats were the next most frequently detected species by the Kaleidoscope software, being recorded on 33.4% and 30.1% of detector-nights, respectively. Calls identified by the Kaleidoscope software as potential TRBA were only detected on 8.2% of detector-nights, mainly at the bat feature station. NLEB was the least-detected species by the Kaleidoscope software (3.4% of detector-nights) and were only recorded at the bat feature station. A qualified bat biologist reviewed all calls classified as NLEB and did not identify any high-quality calls recorded as part of the general acoustic survey that could be confirmed as NLEB.

6.2.4 2024 Northern Long-eared Bat and Tricolored Bat Habitat Assessment

The 2024 NLEB and TRBA habitat assessment provided an update to the 2018 habitat assessment (WEST 2018) using the most recent USFWS guidance (USFWS 2024d) and updated Project boundary (see Project Boundary [2024] in Figure 5-1). The Project is within the range of the NLEB, a federally endangered species (87 Federal Register 73488, 88 Federal Register 4908), and the TRBA, which was proposed for listing as an endangered species on September 13, 2022, with a final determination expected in 2024 (USFWS 2022a, USFWS 2022b). The purpose of this desktop

assessment was to identify potentially suitable summer habitat for NLEB and TRBA within the Project Boundary (2024) and a 1,000-ft buffer (collectively, Assessment Area) to help inform siting decisions, provide more information regarding bat habitat in the vicinity of the project, and support decisions on the potential need and level of survey effort for summer presence/probable absence surveys.

This assessment was completed in accordance with Phase I of the USFWS 2024 *Range-Wide Indiana Bat and Northern Long-eared Bat Survey Guidelines* (USFWS 2024 Guidelines; USFWS 2024d), which was approved for temporary use for TRBA surveys until formal guidance is released for this species. Because the Project location is well north of the known range of the INBA, the assessment only focused on the NLEB and TRBA.

The Assessment Area contains approximately 827 acres (335 hectares) of potentially suitable TRBA habitat, of which approximately 659 acres (267 hectares) occurs within the Project. The Assessment Area contains approximately 274 acres (111 hectares) of potentially suitable NLEB habitat, of which approximately 194 acres (78 hectares) occurs within the Project. Majority of the forested areas within the Project are small, fragmented patches associated with homesteads or shelterbelts, but there are some larger forested patches (greater than 10 ac) scattered throughout the Project that connect to forested areas within the Assessment Area (Figure 6-10). One forested patch (9.9 acres [4.0 hectares]) within the Project was conservatively included as potentially suitable NLEB habitat in order to account for potential discrepancies in digitizing and/or aerials.

6.2.5 2024 Northern Long-eared Bat and Tricolored Bat Presence/Probable Absence Acoustic Surveys

Summer presence/probable absence acoustic surveys were conducted at the Project in 2024 to assess potential impacts of the Project on NLEB and TRBA. The acoustic surveys followed the most recent USFWS guidance (USFWS 2024d). The USFWS 2024 Guidelines may be used for TRBA presence/probable absence surveys using the NLEB level of effort for the 2024 field season (USFWS 2024d). While no published guidance currently exists for the LBBA, the results of these surveys will help inform future planning for this species until formal survey guidance is released.

The desktop habitat assessment identified 194 acres of suitable NLEB habitat and 659 acres of suitable TRBA habitat within the Project area (based on the 2024 bat habitat assessment, section 6.2.4). Using the suitable TRBA acreage to calculate the minimum level of effort required by the USFWS 2024 Guidelines, six acoustic sites (12 detector locations) were proposed for survey, for a minimum of 84 valid detector nights (USFWS 2024d). Acoustic surveys were conducted from June 7 – June 24 and July 26 – July 29, 2024, at 12 detector locations within the Project area (Figure 6-10). The standard survey approach of deploying two detector locations (for 7 nights each) at each survey site (14 detector-nights total) was not always possible because of land access issues. Therefore, eight of the 12 detectors deployed were paired at survey site locations, and 4 detector locations were deployed individually in order to meet the minimum number of valid detector-nights required by the USFWS 2024 Guidelines (Figure 6-10). Detectors were placed in suitable habitat for NLEB and TRBA, including forest edges, small clearings, and forest-canopy openings, near water sources, and along forested riparian edges.

The 12 detector locations resulted in 100 valid detector-nights, surpassing the minimum of 84 valid detector nights required for the Project to meet the USFWS 2024 Guidelines. A total of 30,204 call files were identified to species by the automated classification software (Kaleidoscope). Kaleidoscope identified 62 potential NLEB calls and 196 potential TRBA calls. Qualified acoustic analysts reviewed all files flagged as potential NLEB and TRBA and recorded any other bat species

observed during this process. All calls identified by Kaleidoscope as potential NLEB and TRBA calls were reclassified as noise, unidentified high-frequency calls, or another species. During call labeling, qualified acoustic analysts confirmed the presence of big brown bat, hoary bat, silver-haired bat, eastern red bat, and LBBA. These results indicate probable summer absence of NLEB and TRBA within the Project.

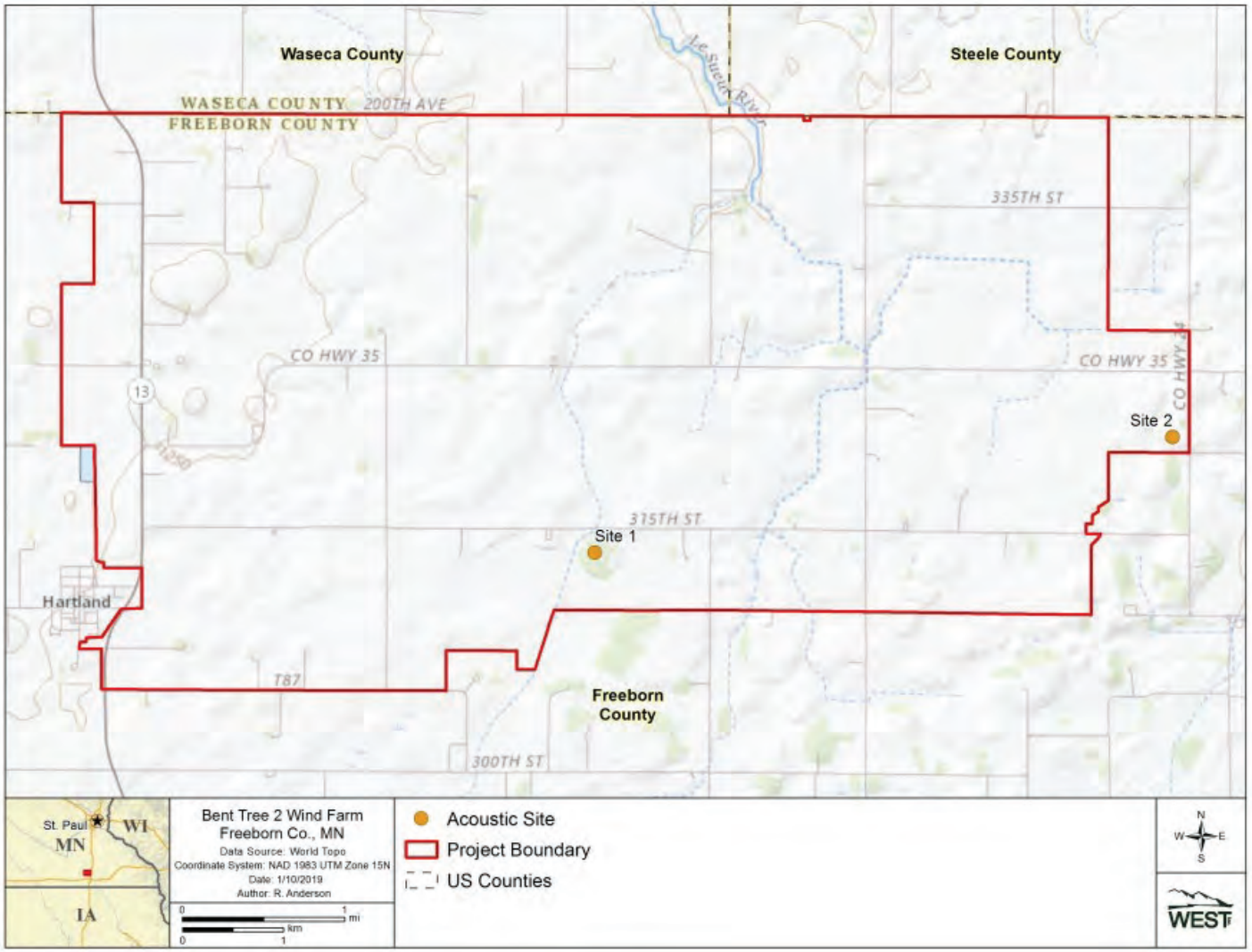

Figure 6-8. Location of northern long-eared bat presence/probable absence acoustic survey sites in the Bent Tree North Wind Project, Freeborn County, Minnesota, from June 9 – 12, 2018 (Hyzy and McDonald 2019).

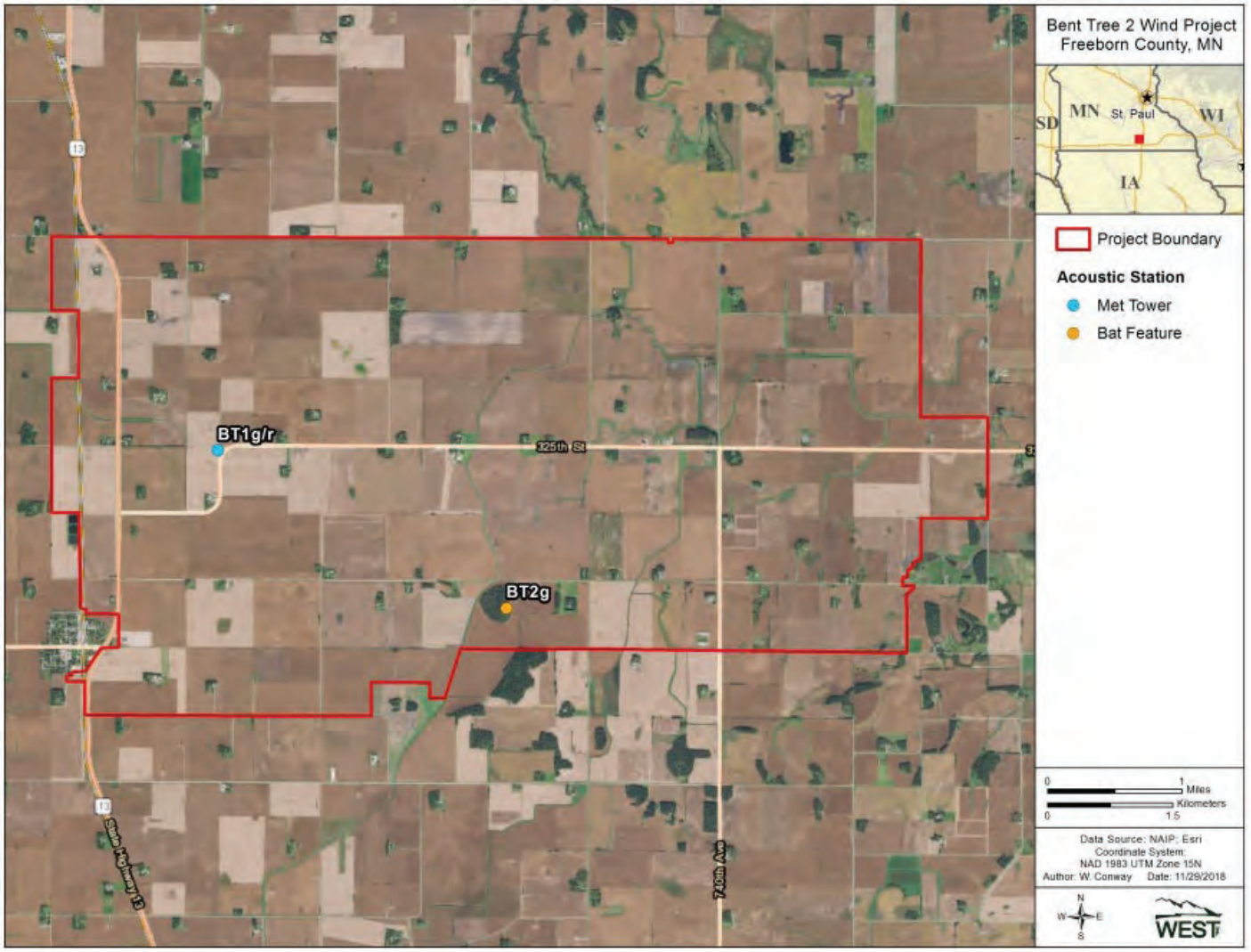

Figure 6-9. Location of general bat activity stations within the Bent Tree North Wind Project, Freeborn County, Minnesota, from March 28 – October 31, 2018 (Hyzy and McDonald 2019).

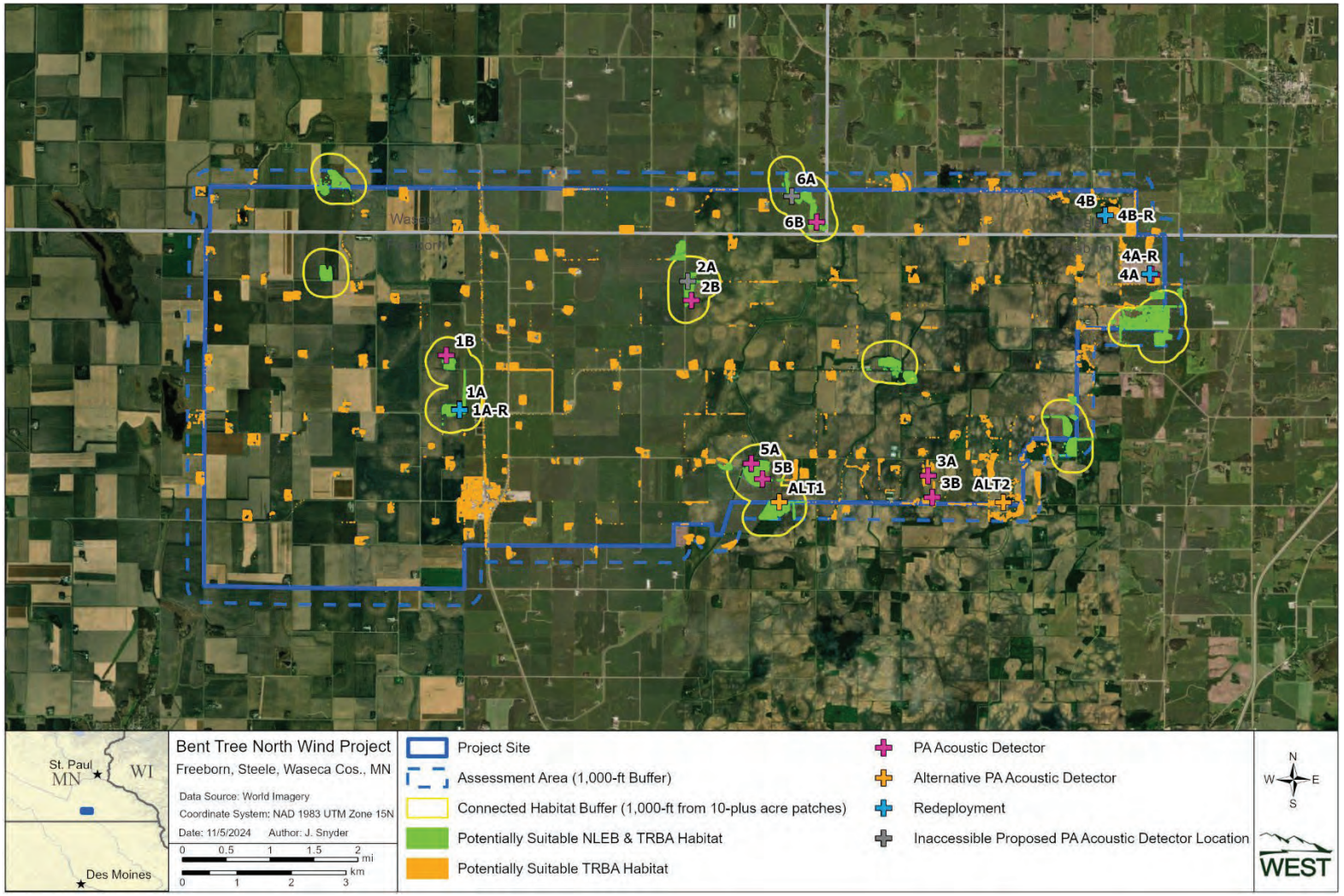

Figure 6-10. Potential habitat and 2024 acoustic sites for the northern long-eared (NLEB) and tricolored bat (TRBA) within and near the proposed Bent Tree North Wind Project in Freeborn, Steele, and Waseca counties, Minnesota, in 2024.

6.3 BASELINE FATALITY MONITORING DATA AT ADJACENT PROJECT

6.3.1 Post-construction Fatality Monitoring at the Bent Tree Project

As noted above, Alliant owns and operates an adjacent wind project in the area: Bent Tree Wind Energy Facility (Bent Tree). Bent Tree sits just to the south of Bent Tree North; Bent Tree consists of 122 1.65 MW turbines with an 82-meter rotor diameter (RD) and became operational in 2010. Alliant contracted WEST to conduct one year of PCM studies at Bent Tree from July 1 – October 16, 2020 (Pickle and O'Neil 2021) to inform the risk management approach at the Project as part of Alliant's multi-site, multi-species Habitat Conservation Plan (HCP; see Section 6.4.1 for additional information). The results of this study are summarized below as potentially relevant indicators of the level of fatalities expected at the Bent Tree North after project construction is completed.

At Bent Tree, road and pad searches were conducted at 50% of the Project's 122 turbines within 100 feet twice per week during four visits in the summer and 27 visits in the fall. A total of 1,842 road and pad searches were conducted across 31 visits at 61 turbines. Thirty-eight bat carcasses were found, comprising 4 species; 18 hoary bats, 8 eastern red bats, 8 silver-haired bats, and 4 big brown bats (MNDNR species of concern) found during carcass searches or incidentally on site. Fifteen bird carcasses were found at Bent Tree, comprising 9 identifiable species: 3 unidentified large birds, 2 unidentified sparrows, 2 killdeer (*Charadrius vociferus*), 1 downy woodpecker (*Dryobates pubescens*), 1 magnolia warbler (*Setophaga magnolia*), 1 mourning dove, 1 ring-necked pheasant (*Phasianus colchicus*), 1 rock pigeon, 1 American white pelican (*Pelecanus erythrorhynchos*; MNDNR species of concern), 1 Canada goose, and 1 red-tailed hawk found during carcass searches or incidentally on site. No federally or state-listed T&E bat or bird species were documented during the surveys. The big brown bat and American white pelican are listed as species of special concern in Minnesota.

The overall adjusted fatality rates, presented as fatalities/MW/study period with 90% confidence intervals (CIs) using GenEst (a generalized estimator of fatality; Dalthorp et al. 2018), were: 9.92 (90% CI: 4.50–33.09) for bats, 0.40 (90% CI was not calculated with sample sizes of 5 or fewer) for small birds, and 0.35 (90% CI: 0.14–0.62) for large birds. Because this study focused on the fall bat migration period (defined for this study as July 15 – October 16), it is most appropriate to compare the bat fatality rates documented during the fall season in this study to other studies that have available fall (vs. full year or full bat active season) bat fatality rates. The Project's fall season bat fatality estimate (9.56 bats/MW/fall) is within the lower end of the range (6.92–66.23 bats/MW/fall) of nearby Iowa facilities with recent PCM data that estimated bat fatalities per MW in the fall season (Alliant and MidAmerican Energy Company wind energy facilities).

Additionally, eagle PCM surveys were conducted at Bent Tree from February 8 to May 15, 2020. All turbines were visually searched by conducting eagle scans from the turbine pad in the 4 cardinal directions. The searcher visually scanned 360 degrees within a 150-meter radius circle centered on the base of the turbine, using binoculars. Eagle scans were discontinued once crop height became too high (greater than 20 centimeters) to search. No eagle fatalities have been recorded at the Project either during this PCM survey or incidentally by O&M staff.

Based on fatality data from the spatially adjacent Bent Tree project, no significant adverse impacts are anticipated from Project operations following construction. While the RD and hub height will differ between the Project (112 m hub height and 136 m rotor diameter) and Bent Tree (80 m hub height and 82 m rotor diameter), the bird and bat species found as fatalities will likely be composed of the same general species (non-listed and found relatively commonly as fatalities) as those

documented at Bent Tree and in the region. The project-specific fatality rates at Bent Tree North will be documented as part of the post-construction monitoring (Section 8.0).

6.4 RISK ASSESSMENT DECISIONS

6.4.1 Habitat Conservation Plan

WPL determined there is potential risk (associated primarily with migration) at the Project to the following federally listed (or soon to be listed) bat species: NLEB, LBBA, and TRBA. Since these species of concern have potential to occur within WPL's Iowa and southern Minnesota wind energy facilities, WPL has elected to take a programmatic approach to address potential risk to these species. The proposed effort, which initially includes 9 Alliant wind facilities, is a multi-site, multi-species HCP that includes avoidance, minimization, and mitigation actions taken for the benefit of included species.

Alliant proactively considers future environmental compliance requirements and proposed regulations in their planning, decision-making, construction, and ongoing operations activities. The HCP will allow Alliant to seek an Incidental Take Permit (ITP) from the USFWS, addressing how unintentional impacts to, or "incidental take" of select avian and bat species of concern will be avoided, minimized, and mitigated throughout the operating lives of all the Iowa/Minnesota wind energy facilities in Alliant's fleet. HCP coordination with the USFWS has concluded, with Alliant receiving an ITP for the initial 9 facilities on October 25, 2024. . As noted in the HCP, it is Alliant's intent to amend the permit to include the Project in the overall Alliant incidental take coverage, once built.

In addition to pursuing the HCP, Alliant currently follows best industry practices for management of wildlife around their wind energy facilities. Examples of such practices include feathering blades during low wind speeds to minimize risk to bats, installing permanent MET towers that don't require guy wires (i.e., non-wired towers), implementing a corporate APP (see Appendix A), and reporting wildlife mortality to regulatory agencies.

6.4.2 Eagle Take Coverage

Pre-construction surveys conducted for the Project determined there is risk for bald eagles at the Project. Alliant proactively considers future environmental compliance requirements and proposed regulations in their planning, decision-making, construction, and ongoing operations activities. Alliant is currently assessing options for eagle permits to ensure compliance with BGEPA. To be eligible for a general eagle take permit under the USFWS 2024 eagle rule, a wind facility must 1) be in an area with relative abundance below the seasonal thresholds identified by the USFWS for both eagle species, and 2) not have a golden eagle nest within 2 miles or a bald eagle nest within 660 feet of turbine blades or other turbine infrastructure (USFWS 2024a). The Project meets both of these criteria based on the proposed turbine locations and the 2024 eagle nest surveys.

7.0 Project Impact Avoidance and Minimization Measures

Alliant has applied the following Best Management Practices (BMPs) during Project siting, construction, and operations.

7.1 PROJECT SITING AND DESIGN MEASURES

Efforts were taken during the development of the Project to avoid, minimize, and mitigate adverse effects on bird and bat species through siting, environmental studies, engineering, construction, and operation. Described below are the measures taken by Alliant during the siting process to avoid and minimize impacts.

- Turbines will be sited to adhere to protective setbacks from natural resource areas and riparian corridors.
- Alliant will minimize, to the extent practicable, the area disturbed by pre-construction site monitoring and testing activities and installations.
- Alliant will minimize the amount of land impacted by the Project.
- The Project will be sited primarily in existing cropland and has shown to have a moderate risk to eagles and low risk to other birds and bats overall.
- Turbines will be sited more than 1,000 feet from suitable summer habitat for NLEB and (as assessed during the 2024 habitat assessment) and as much as possible from the smaller patches of potential TRBA habitat to minimize risk to roosting bats.
- Turbines will be sited more than 660 feet from known bald eagle nests, and will minimize the number of turbines sited within 1.0 mi of bald eagle nests to the extent feasible. Furthermore, the construction footprint will be designed so that no construction activity will occur within 660 ft of documented bald eagle nests.
- To reduce avian collisions, low and medium voltage connecting power lines associated with the wind energy development Project will be placed underground.
- Alliant will avoid placing wind turbines and associated facilities in Waterfowl Production Areas, State Wildlife Management Areas, Scientific and Natural Areas, or county parks.
- Alliant will avoid placing wind turbines and associated facilities in wetlands.
- Alliant will prepare a prairie protection and management plan, if applicable.
- The Project is located approximately 34 miles southeast of the Upper Minnesota River Valley Important Bird Area and outside key migratory corridors for birds, consistent with the USFWS recommended siting guidelines (2003, 2012) for the avoidance of migrating birds and bats.
- Tubular towers will be used at the facility to reduce the ability for birds to perch, and, therefore, reduced risk of collision.
- Alliant will mark the towers as required by the Federal Aviation Administration (FAA), with no lights on the towers other than what is required by the FAA.
- Lighting will be minimized to the extent practicable at the Project. An Aircraft Detection Lighting System (ADLS) will be utilized to reduce the frequency of blinking lights at night and downward projecting lights or motion sensor activated lights will be installed as practicable to minimize attractants to birds/bats.

- The Project will utilize the existing operations and maintenance facility for the adjacent Bent Tree project; lighting at both the operation and maintenance facility and substation will be minimized and lights will be hooded downward and directed to minimize horizontal and skyward illumination.
- In general, the length and number of access roads will be minimized to the extent possible in the Project design, and existing roads will be used, where feasible.
- The existing operations and maintenance building employs timer and motion lighting as well as manual lights, which will be extinguished unless responding to an emergency.
- The use of high-intensity lighting, steady burning, or bright lights, such as sodium vapor, quartz, halogen, or other bright spotlights, will be minimized.
- All internal turbine nacelle and tower lighting will be extinguished when unoccupied to avoid attracting prey for nocturnal birds or bats.
- MET towers will be free standing; 1 tower will be permanent.

7.2 CONSTRUCTION MEASURES

Efforts that will be taken to avoid and minimize impacts during construction are described in this section. These efforts include applying the following BMPs, fulfilling any environmental obligations assumed during development, and complying with regulatory requirements.

- Restoration activities will use native seed mixes in coordination with the appropriate state and federal agencies.
- Alliant will develop an Erosion Control Plan prior to construction and used appropriate erosion control measures in construction and operation to eliminate or minimize runoff into water bodies.
- Alliant will require construction personnel to avoid driving through or otherwise disturbing areas outside designated construction areas.
- Alliant will utilize and upgrade existing roads and farm drives, wherever possible, to minimize surface disturbances to active agricultural, wetland, and stream areas, and avoid bird nests.
- Tree removal will conducted if at all possible between November 1 and April 14, outside of the spring staging season, pup season, and fall swarming season for NLEB in Minnesota (USFWS 2024e) Soil compaction from construction equipment will be alleviated with appropriate methods. Rutted areas will be restored to pre-construction conditions.
- Disturbed areas will be reseeded and restored to original conditions within 1 year of construction.
- Alliant will clear and disturb the site only to the extent necessary to provide suitable access for construction, safe operation, and maintenance.
- Alliant will implement measures to protect and segregate topsoil from subsoil in cultivated lands unless otherwise negotiated with the affected landowner.
- Alliant will implement measures to minimize soil compaction.
- Alliant will not locate temporary equipment staging areas on lands under its control unless negotiated with landowner, and avoided locating temporary staging areas in wetlands or native prairie.

- Alliant will remove all waste and scrap during construction, and properly disposed of it upon completion of each task. Personal litter, bottles, and paper deposited by site personnel will be removed on a daily basis.
- Alliant will restore the area after turbine construction.
- Alliant will comply with all laws applicable to the generation, storage, transportation, clean-up, and disposal of hazardous wastes generated during construction.
- Alliant will restrict herbicide use to those herbicides and methods of application approved by the Minnesota Department of Agriculture (MDA) and the US Environmental Protection Agency (USEPA).

7.3 OPERATIONS MEASURES

The following measures will be implemented at the Project to avoid and minimize potential impacts to birds and bats.

- Alliant is committed to avoiding and minimizing impacts from its facilities to wildlife. Accordingly, Alliant drafted an APP in 2021, which specifies the standards to be employed on its power lines and wind energy facilities company-wide.
- As specified in the APP, Alliant will conduct bird nest management in and around its wind farms, as necessary.
- Road-killed animals or other carcasses (excluding eagles and other migratory birds) detected incidentally (e.g., while travelling to/from the site or during daily job functions) by Project personnel on roads within the Project area will be removed to avoid attracting raptors and scavenging birds to the Project site.
- Work with landowners to emphasize proper livestock carcass disposal methods to minimize anthropogenic feeding opportunities for bald eagles within the Project area.
- Alliant has implemented an *Avian and Bat Mortality Tracking and Reporting Procedure* (ABMTRP) (Appendix B) in its wind facilities and will do so at this Project.
- To reduce vehicle collision risk to wildlife, 15 mph speed limits will be enforced while travelling on access roads.
- As part of the site orientation, all visitors and contractors will be trained to avoid harassing or disturbing wildlife.
- Wildlife habitat enhancements or improvements such as rock or brush piles for small mammals, bird nest boxes, nesting platforms, wildlife food plots, etc., will not to be created or added to the Project facilities, except as necessary to manage risk to existing wildlife populations, because these wildlife habitat enhancements could result in increased wildlife use of the facility, which may result in increased levels of wildlife injury or mortality.
- Garbage and waste disposal will be properly managed on the Project site to avoid attracting wildlife by providing supplemental food. Trash generated at the facility should be covered and removed once per week, and the site will develop a Waste Management Plan to handle waste disposal.
- To reduce fire hazard from vehicles and human activities, vehicles will undergo periodic inspections. Additionally, a site emergency action plan will be developed that specifically

addresses the risk of grass and brush fire and will provide appropriate cautions and measures to be taken in the event of a wildfire.

- To minimize danger to water and wildlife resources from spills, annual spill prevention, control, and countermeasure and bulk oil handling trainings will be conducted annually, and all federal and state regulations will be followed. Spill kits will be located onsite, and employees will be trained in their use.
- Alliant will implement the adaptive management programs in this BBCS and provide effective avoidance, minimization, and mitigation of impacts to non-listed birds and bats.
- Through the HCP amendment process, Alliant will implement Project-specific conservation and mitigation measures for NLEB, LBBA, and TRBA that would also benefit other non-listed bat species.

7.4 EAGLE RISK MANAGEMENT

WPL will apply the following BMPs during Project siting/operation to help minimize risk to eagles.

- Electrical collection lines will be buried underground to avoid potential electrocution of eagles.
- Tubular towers will be used at the facility to reduce the ability for eagles to perch and/or nest, thereby reducing the risk of collision.
- Permanent MET towers at the Project site will be un-guyed (i.e., self-supporting) to reduce risk of collision.
- Letters will be sent to landowners in the Project area requesting that they minimize food sources for raptors by properly disposing of livestock carcasses, as found necessary.
- Road-killed animals or other carcasses (excluding eagles and other migratory birds) detected incidentally (e.g., while traveling to/from the site or during daily job functions) by Project personnel on access roads within the Project area will be removed promptly to avoid attracting eagles and other raptors to the Project site.
- To reduce vehicle collision risk to wildlife, 15 mph speed limits will be enforced on access roads. This will reduce the amount of roadkill potentially attractive to eagles.
- Garbage and waste disposal will be properly managed on the Project site to avoid creating attractive nuisances for wildlife by providing them with supplemental food. The trash cans will be covered and removed on a routine basis.

7.5 LISTED BAT RISK MANAGEMENT

WPL will apply the following measures during Project operations to avoid and minimize risk to listed bats:

- WPL has voluntarily committed to feathering turbine blades up to the manufacturer's cut-in speed (3.0 meters per second) from April 1 through October 31, nightly when temperature exceed 50 degrees Fahrenheit.
- As it is Alliant's intent to amend their multi-site wind ITP to include Bent Tree North (see Section 6.4.1, above) which may extend the curtailment period for the Project; as part of the amendment process, the risk level for NLEB, LBBA, and TRBA will be assessed and the Project

would implement a minimization regime that is commensurate with the risk. Furthermore, as part of the HCP, ongoing monitoring to assess risk to these listed bat species would occur.

7.6 TREE REMOVAL WILL CONDUCTED IF AT ALL POSSIBLE BETWEEN NOVEMBER 1 AND APRIL 14, OUTSIDE OF THE SPRING STAGING SEASON, PUP SEASON, AND FALL SWARMING SEASON FOR NLEB IN MINNESOTA (USFWS 2024E) DECOMMISSIONING

In the event of decommissioning at the end of the Project life, wind turbine generators and other Project infrastructure would be removed, and the site would be restored to as near its original condition, as possible. The following decommissioning BMPs, as outlined in the WEGs and the PUC site permit for the Project, will be implemented during the decommissioning process:

- Decommissioning methods should minimize new site disturbance and removal of existing vegetation, to the extent practicable.
- Upon expiration of this Permit, or upon earlier termination of operation, Alliant should dismantle and remove from the site all towers, turbine generators, transformers, overhead and underground cables, foundations, buildings, and ancillary equipment to a depth of 4 feet.
- Alliant will, to the extent possible, restore and reclaim the site to its pre-Project conditions consistent with the site lease agreements, the agricultural impact mitigation plan, and regulatory requirements, as applicable
- If topsoil is removed during decommissioning, it will be stockpiled and used as topsoil when restoring vegetation. Once decommissioning activity is complete, topsoil will be restored to assist in establishing and maintaining pre-construction vegetation, to the extent possible, consistent with landowner objectives.
- Soil restoration activities will be stabilized and re-vegetated with seed mixes appropriate for the soil conditions and adjacent habitat, and of local seed sources, where feasible, consistent with landowner objectives.
- Surface water flows should be restored to pre-disturbance conditions, including removal of stream crossings, roads, and pads, consistent with storm water management objectives and requirements.
- Surveys should be conducted by qualified biologists to detect populations of invasive species, and comprehensive approaches to preventing and controlling invasive species should be implemented and maintained as long as necessary.
- After decommissioning, erosion control measures should be installed in all disturbance areas where potential for erosion exists, consistent with storm water management objectives and requirements.
- Fencing should be removed unless the landowner will be utilizing the fence.
- Petroleum product leaks and chemical releases will be remediated prior to completion of decommissioning.

8.0 Tier 4 – Post-construction Studies to Estimate Impacts

Tier 4 of the WEGs addresses PCM surveys that are designed to assess whether predictions of fatality risk and direct and indirect impacts to species of concern were correct.

8.1 FATALITY MONITORING

WPL will conduct PCM surveys following construction to assess and monitor for potential direct impacts to birds and bats. The PCM study will address Tier 4 of the WEGs and also will be consistent with the *Avian and Bat Survey Protocols for Large Wind Energy Conversion Systems in Minnesota* (Mixon et al. 2014). At least two years of bird and bat PCM will be conducted, the details of which will be developed through coordination with the MNDNR and MNDOC Energy and Environmental Review & Analysis Unit. Any eagle-specific PCM protocols will be developed through coordination with the USFWS and the Project's eagle permitting approach. Searcher efficiency and carcass removal trials will be completed during each survey season to capture seasonal variations and aid in determining estimated bird and bat fatality rates for the Project.

After each year of monitoring is completed, a mortality analysis will be conducted that evaluates species, number, location, and distance from the nearest turbine for each recovered bird or bat. At a minimum, the mortality analysis will consider the following:

- Number of annual mortalities per turbine and estimate of facility-wide fatality rates; and
- Comparison to existing public data on bird and bat mortality at projects with similar habitat types and study methodology.

The survey results will be provided to the USFWS, MNDOC, and MNDNR no later than March 15 of the year following the surveys.

9.0 Implementation of the BBCS

The monitoring and reporting measures detailed in the BBCS have been created based on industry standards and the perceived risks to the Project. This document can be altered or modified with the incorporation of supplemental information during future operation of the Project.

9.1 TRAINING ONSITE PERSONNEL

Training employees during the operation and maintenance phase of the Project ensures compliance with all regulations and requirements of the Project. Alliant has provided education to employees about wildlife laws and permit requirements with specific emphasis on bats and raptors. Employees received training from the operational supervisor or designated individual, along with materials to assist them in how to appropriately respond when a wildlife incident occurs.

9.2 INCIDENT REPORTING

Incident monitoring reporting is conducted for the Project based on the ABMTRP (see Appendix B), which is currently under revision by WPL. The purpose of the ABMTRP is to implement a method to track and report avian mortality at WPL-owned and operated wind farms. The Operations Manager or designee will be responsible for compliance with the ABMTRP and any subsequent agency coordination resulting from an incident. Injured raptors will be reported to the nearest wildlife rehabilitation office.

Upon discovery of a wildlife incident, the ABMTRP will be followed. If an injured animal or bird is found, site personnel will inform the Alliant Environmental Services Department and report the incident to the nearest wildlife rehabilitation center, per the ABMTRP protocols. The following steps will be taken for avian and bat fatalities found at the facility:

- Site personnel will wear goggles, gloves, and dust masks when handling bird and bat carcasses.
- Bird and bat carcasses will be left in-situ, though they may need to be briefly handled for measurements/photographs.
- Photos will be taken of the carcass, its relation to the nearest structure, and distinguishing characteristics. If possible, measurements of the bat forearm will be taken. Other important photos for bats include tragus (appendage in front of the ear) and dentition.
- Site personnel will attempt to identify the species using an identification guide.
- If the bird has bands or tags, they will be removed and sent to the Alliant Environmental Services Department, who will contact the appropriate agency.
- Any bird or bat fatality will be reported to the Alliant Environmental Services Department. If the bird is a raptor or is banded, it will be reported to USFWS.
- A Bird/Bat Mortality Reporting Form will be completed for any bird/bat mortality and submitted to the Site Manager, Site Operations and Maintenance Manager, and the Environmental Services Department.
- Upon completion of the Bird/Bat Mortality Reporting Form and final reporting requirements to the appropriate wildlife agencies, all agency correspondence, reports, and photos are to be placed into the company's long-term electronic file storage system.

- Federally listed T&E species carcasses will not be retained without proper permits or permission from USFWS.
- Injured raptors (e.g., eagles, hawks, owls) will be reported to the nearest wildlife rehabilitation center for consideration of care.

In addition to the ABMTRP, Alliant will notify the PUC, USFWS, and the MNDNR within 24 hours of the discovery of any of the following: (a) Five or more dead or injured birds or bats at an individual turbine location within a 5-day reporting period; (b) twenty or more dead or injured birds or bats across the entire facility within a 5-day reporting period; (c) one or more dead or injured federally listed species, including species proposed for listing; or (d) one or more dead or injured bald or golden eagle(s).

9.3 SPUT PERMIT

Alliant has amended their existing MBTA Special Purpose Utility (SPUT) Permit originally obtained to support PCM survey activities that initiated in the fall of 2019 at the English Farms Wind Farm. The first amendment extended the permit coverage to all Alliant wind energy facilities subject to PCM surveys in 2020. The second amendment extended permit coverage to all Alliant wind energy facilities subject to PCM surveys in 2021. Finally, the SPUT permit was renewed in 2022 for an additional 3 years.

The original SPUT permit issued to English Farms Wind Farm (Permit Number: MB48291D-0) became effective July 16, 2019, with an expiration date of March 31, 2022. The first amendment became effective February 4, 2020, and the second amendment became effective April 22, 2021, with the same expiration date for both amendments (March 31, 2022). The SPUT was then renewed and became effective April 1, 2022, with an expiration date of March 31, 2025 (Permit Number: MB48291D-3). Alliant intends to amend the permit again to include Bent Tree North, once constructed.

The SPUT permit allows the permittee and designated sub permittees to collect, transport, or possess MBTA-listed avian species for using such carcasses for PCM survey activities such as searcher efficiency and carcass persistence trials (bias correction factors). The permit extends to bald and golden eagle carcasses from turbine strikes which, once properly documented, may be moved to on-site freezers, though the USFWS must be contacted prior to repurposing any eagle carcasses for PCM surveys. A copy of this permit may be available by contacting the Key Owner/Operator Contacts noted in Section 10.5. Annual reporting requirement apply.

9.4 CONCLUSIONS AND ADAPTIVE MANAGEMENT

Extensive studies within the Project area and select buffered distances have been performed during the development phases. The Project is not expected to have any significant adverse impacts to species of concern and is not anticipated to have higher fatality rates than other wind generation projects that are operational in the vicinity.

WPL has composed this BBCS as a proactive measure to evaluate and manage wildlife risk for the Project and to document the framework for responding to wildlife fatalities, should they occur. BMPs and other measures prescribed through the permitting process have been implemented to avoid and minimize impacts. A complete list of adaptive management triggers and measures is outlined in Table 9-1. Modifications to the implementation of practices, monitoring, reporting, and administration could occur if circumstances warrant a re-evaluation of specific parameters and would be done in consultation with the USFWS and state agencies, as needed.

Table 9-1. Adaptive Management Triggers and Responses

TRIGGER	RESPONSE
Positive identification of a federal-listed endangered or threatened species carcass by a qualified biologist	• Notification to the US Fish and Wildlife Service (USFWS) • Coordination with the USFWS to determine next steps
Positive identification of a state-listed endangered or threatened species carcass by a qualified biologist	• Notification to the Minnesota Department of Natural Resources (MNDNR) and Public Utilities Commission of Minnesota (PUC) • Coordination with the MNDNR to determine next steps as found necessary
Discovery of any of the following: (a) Five or more dead or injured birds or bats at an individual turbine location within a 5-day reporting period; (b) twenty or more dead or injured birds or bats across the entire facility within a 5-day reporting period; (c) one or more dead or injured federally listed species, including species proposed for listing; or (d) one or more dead or injured bald or golden eagle(s).	• Notification to the USFWS, MNDNR, and PUC • Coordination with the agencies to determine next steps

9.5 KEY OWNER/OPERATOR CONTACTS

Questions pertaining to this Bird and Bat Conservation Strategy should be directed to:

Alan Arnold
Environmental Renewables Program Manager
alanarnold@alliantenergy.com
Direct: (319) 786-4476
Mobile: (319) 551-6483

9.6 USFWS/PROJECT COMMUNICATIONS SUMMARY

Table 9-2. Key Agencies – Project Communication Summary (update as needed)

DATE	FROM	TO	TYPE	CORRESPONDENCE
January 2024 - Ongoing	Alliant	US Fish and Wildlife Service Illinois-Iowa Field Office	Coordination	Discussions of including the Project in Alliant's multi-project HCP
February 2024	Alliant	US Fish and Wildlife Service Minnesota-Wisconsin Field Office	Letter: request for agency feedback on project development	Letter received on March 19, 2024 (USFWS 2024c)
February 2024	Alliant	Minnesota Department of Natural Resources, Natural Heritage Information System	Letter: request for agency feedback on project development	Letter received on April 10, 2024 (MNDNR 2024d) and updated on April 12, 2024 (MNDNR 2024e)
March 14, 2023	Alliant	US Fish and Wildlife Service Minnesota-Wisconsin Field Office	Meeting	Introductory meeting to provide a project overview and summary of survey results
March 18, 2024	Alliant	Minnesota Department of Natural Resources	Meeting	Introductory meeting to provide a project overview and summary of survey results

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Appendix A. Alliant Energy Avian Protection Plan

Appendix B. Avian and Bat Mortality Tracking and Reporting Procedure