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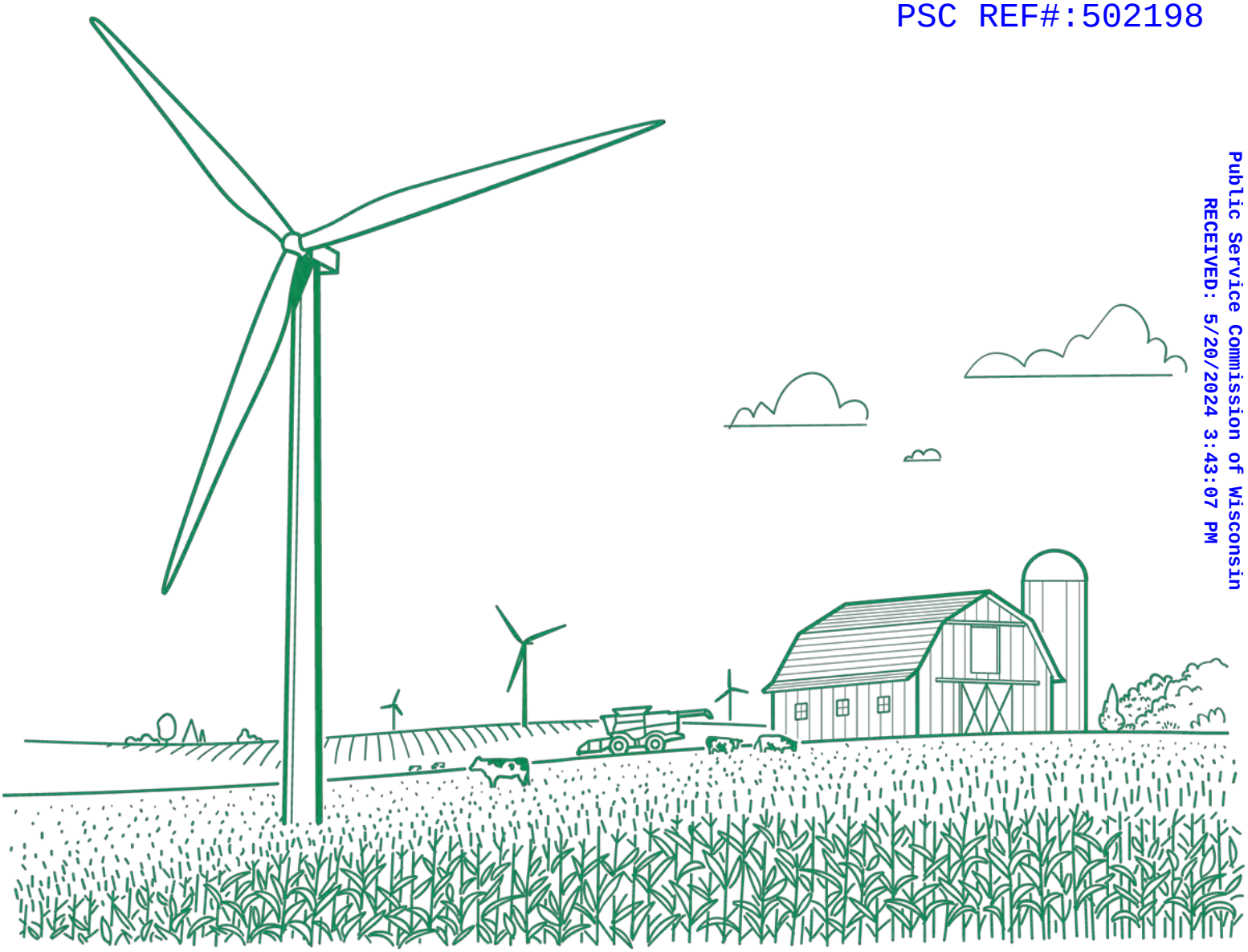

Badger Hollow Wind Farm LLC
Engineering Plan

Iowa and Grant Counties, Wisconsin

TABLE OF CONTENTS

EXHIBITS

ACRONYMS & ABBREVIATIONS

AC	Alternating Current
ADLS	Aircraft Detection Lighting System
ATC	American Transmission Company
BMP	Best Management Practices
CPCN	Certificate of Public Convenience and Necessity
ECSWMP	Erosion Control and Storm Water Management Plan
ERR	Endangered Resources Review
FAA	Federal Aviation Administration
Gen-Tie Line	Generator Transmission Tie Line
IPaC	Information for Planning and Consultation
kV	Kilovolt
MET	Meteorological
MISO	Midcontinent Independent System Operator
MW	Megawatt
NDR	Navigability Determination Request
NTIA	National Telecommunications and Information Administration
O&M	Operations and Maintenance
PSCW	Public Service Commission of Wisconsin
SCADA	Supervisory Control and Data Acquisition
USFWS	United States Fish and Wildlife Service
WBIC	Water Body Identification Code
WDNR	Wisconsin Department of Natural Resources
Wiscland	Wisconsin Land Cover Database
WWI	Wisconsin Wetland Inventory

1. Introduction

Badger Hollow Wind Farm LLC ("Badger Hollow Wind"), a subsidiary of Invenergy Wind Development North America LLC and an affiliate of Invenergy LLC (collectively "Invenergy"), is preparing an application for a Certificate of Public Convenience and Necessity ("CPCN") to the Public Service Commission of Wisconsin ("PSCW") to construct and place in service the Badger Hollow Wind Energy Center ("Project"), an electric generation facility with a generation potential of up to 118 megawatts ("MW") alternating current ("AC").

Invenergy is the world's leading privately held renewable energy company. Founded in 2001, Invenergy and its affiliate companies have a proven development track record of 202 large-scale energy projects representing over 30,000 MW of generation capacity.

In accordance with Wisconsin Statute § 196.491(3)(a)3a, Badger Hollow Wind is submitting this Engineering Plan ("EP") to the Wisconsin Department of Natural Resources ("WDNR") at least 60 days before Badger Hollow Wind will file a CPCN application with the PSCW. Badger Hollow Wind requests that within 30 days after receipt of this EP, WDNR provide a listing of all permits or approvals, which based on the information contained in this EP, appear to be required to construct the generation facilities. In accordance with Wisconsin Statute § 30.025(1s), Badger Hollow Wind will apply for all federal and state permits and approvals required.

All distances, dimensions, and descriptions below are estimates and subject to change based upon final engineering design and layout.

2. Description of the Project

2.1 Project Overview

The Project is located in the Towns of Clifton, Eden, and Linden in Iowa and Grant Counties, Wisconsin. The Project is expected to feature approximately 17 to 19 turbines ranging from 3.8 to 6.2 MW in nameplate capacity each. The aboveground portions of the Project will be built on approximately 31 acres within a 15,704-acre general Project Area ("Project Area") (**Exhibit 1**). The Project will include the following facilities ("Project Facilities"):

- Up to 19 wind turbines;
- Electrical collection and supervisory control and data acquisition ("SCADA") systems;
- A 34.5 kV to 345 kV collector substation ("Collector Substation");
- A 345 kV generator transmission tie line ("Gen-Tie Line");
- The existing 345 kV Hill Valley Substation ("Interconnection Switchyard");
- An operations and maintenance facility ("O&M Facility");
- Access roads;
- Up to two meteorological ("MET") towers;
- Up to two aircraft detection lighting system ("ADLS") towers; and
- Temporary construction areas, including crane paths, public road improvements, general construction laydown yard, staging areas, and a concrete batch plant, as needed.

Equipment and facilities will be designed and arranged for optimum use of the site, as well as to ensure efficient operability and maintainability. The preliminary Project Layout provided in

Exhibit 2 identifies 25 proposed turbine locations, of which up to 19 will be constructed depending on the nameplate capacity(s) of the turbine model(s) procured. During construction, temporary construction laydown yards and parking areas will be located on site.

2.2 Turbine Dimensions

Turbine dimensions for models currently under consideration for the Project are provided in **Table 2.2**.

Table 2.2 Turbine Dimensions

Turbine Model	Hub Height		Rotor Diameter		Tip Height	
	Feet	Meters	Feet	Meters	Feet	Meters
GE 3.8 - 154	321.5	98	505.2	154	574.1	175
GE 6.1 - 158	331.4	101	518.4	158	590.6	180
V 163 - 4.5	321.5	98	534.8	163	588.9	179.5
V 166 - 4.5	321.5	98	544.6	166	593.8	181
V 162 - 6.2	390.4	119	531.2	162	656	200

2.3 Turbine Foundations

Badger Hollow Wind plans to use a spread footing foundation design for the turbines. Except for approximately 12 inches that will remain aboveground to allow turbine towers to be bolted to the foundations, the foundations will be underground. Turbine foundations will be constructed from concrete and rebar to support the turbine structures. The final foundation designs will be engineered for the specific turbine model, soils, and subsurface conditions at each turbine location and stamped by a registered professional engineer.

2.4 Turbine Towers

Turbine towers will be self-supporting, tubular steel towers connected to the turbine foundations by anchor bolts. The towers will be painted a non-glare white, off-white, or gray to comply with Federal Aviation Administration ("FAA") regulations. Access to the turbines will be through a lockable steel door at the base of each tower. Within the tower, access to the nacelle will be provided by a ladder connecting platforms and equipped with a fall-arresting safety system.

2.5 Turbine Nacelles

Turbine nacelles will house the main mechanical components that transform the wind's kinetic energy into electricity. The nacelle will be connected to the tower by a yaw system. Motors power rotation of the yaw drive assembly which consists of a machine base frame mounted on a roller or sliding bearing that's attached to the tower via a bolted yaw ring. The rotation of the yaw drive allows for the turbine to be oriented into the direction of the wind to maximize energy production.

The main components inside the nacelles are the main shaft, gearbox, and generator. Mechanical and/or ultrasonic anemometers and weathervanes will be externally mounted at the rear of the nacelle to provide real-time wind speed and direction data to the controller. Based on the data collected, the turbine yaw system constantly rotates the nacelle, hub, and blades into the wind,

while the blade pitch system continuously adjusts the pitch of the blades to optimize the output of the generator based on wind speeds. The gearbox adjusts shaft speed to maintain generator speed in low and high wind speeds.

2.6 Turbine Hubs

Turbine hubs will connect the three rotor blades to the main shaft. The hubs will be mounted directly to the main shaft and house three electrically actuated hydraulic blade pitch systems. In addition to optimizing the output of the generator, the pitch systems act as the main braking system for the turbines. Braking under normal operating conditions will be accomplished by pitching the blades perpendicular to the wind. The turbine control system will automatically adjust the pitch of the blades and brake as necessary in high wind conditions. The control system will also alert the turbine when the wind is strong enough to begin turning the generator and producing electricity at the "cut-in" wind speed. The turbines will be equipped with a mechanical brake located at the output shaft of the gearbox to stop the hubs rotation in the event of a storm, fault, or maintenance. The braking system is designed to be fail-safe, allowing the rotor to be brought to a halt under all foreseeable conditions.

2.7 Turbine Rotor Blades

Turbine rotor blades will be connected to the hub and capture the kinetic energy from the wind. The rotor blades will be non-metallic and equipped with a sophisticated lightning protection system designed to conduct lighting from the receptors at the tip of each blade, down through the blade, hub, tower, and then finally dissipated via the earthing insulation system incorporated into the foundation.

2.8 Turbine Transformers

Electricity produced by the generators will be routed through insulated cables in the power rail to a safety switch then to a transformer which will increase the voltage to 34.5 kV. The transformer may be located internally to the turbine towers or externally at the base of the towers. After the voltage of the electricity is increased to 34.5 kV, it will be fed into the electrical collection system.

2.9 Electrical Collection and SCADA Systems

Electricity will be routed from the turbine transformers to the Collector Substation through an electrical collection system that aggregates the electricity of groups of turbines. The electrical collection system will be comprised of underground collector circuits and aboveground junction boxes as required for connections or splices. The electrical collection system will be designed for operation at 34.5 kV and terminate at the Collector Substation.

The Project will be monitored by a SCADA system that will provide telemetry, control, and communication among the turbines, Collector Substation, Gen-Tie Line, O&M building, ADLS, and transmission system enabling the Project to be monitored in real time by technicians as well as staff at a 24/7 off-site operations facility. The SCADA system will utilize fiber optic cables that will primarily be installed concurrently with the electrical collection system.

2.10 Collector Substation

The Collector Substation will increase the voltage from the electrical collection system to that of the transmission system at the point of interconnection (345 kV). The Collector Substation will be approximately 2 acres and include a main power transformer, a transformer containment area, control enclosure, overhead bus and associated structures, circuit breakers, disconnect switches, relay panels, surge arresters, battery banks, grounding system, and relaying, metering, and communication equipment. Fencing around the Collector Substation will likely be a chain link design 7 feet high topped with 1 foot of barbed wire to comply with the National Electric Safety Code.

2.11 Gen-Tie Line

The Gen-Tie Line will transmit electricity less than one mile from the Collector Substation to the point of interconnection at the Interconnection Switchyard. The Gen-Tie Line will be an overhead 345 kV transmission line of a three-phase, single-circuit, monopole design. The conductor will be sized to carry the electricity of the Project, and to meet any thermal stability, vibration resistance, or other specific technical criteria required. Fiber optic cable will run the length of the Gen-Tie Line for communications. The type of pole material will likely be weathered steel. The Gen-Tie Line will require a 150-foot-wide right-of-way. The Gen-Tie Line will terminate at the Interconnection Switchyard.

2.12 Interconnection Switchyard

The existing 345 kV Hill Valley Substation owned by American Transmission Company ("ATC") will serve as point of interconnection between the Project and the Midcontinent Independent System Operator ("MISO") regional transmission system. Badger Hollow Wind or ATC will make modifications and network upgrades as determined by the studies performed by MISO and ATC during the Generator Interconnection Process. These modifications will be constructed pursuant to the Generator Interconnection Agreement executed by MISO, ATC, and Badger Hollow Wind. The Gen-Tie Line, Collector Substation, and Interconnection Switchyard are related facilities to the Badger Hollow Wind generating facility and are essential to allowing the electricity produced by the Project to be transmitted onto the MISO regional transmission system.

2.13 O&M Facility

The O&M Facility will be approximately 2.5 acres and will include an O&M building, parking lot, storage area, and other associated facilities such as a drinking water well, aboveground water storage tanks, septic system, security gate, security system, lighting, and signage. The O&M building will house administrative and maintenance equipment and personnel. The O&M building will be the main working base for the Project's technicians and house the Project's control system hardware that provides real time data to technicians and staff at a 24/7 off-site operations facility. The O&M building will have workstations for the technicians to use to organize their days in the field, and a garage with tools and an inventory of parts and maintenance supplies. Fencing around the O&M storage area will likely be a chain link design 7 feet high topped with 1 foot of barbed wire. Security cameras will be installed at the O&M building. Doors to the O&M building and gates to the O&M storage area will be secured using a key control or badge reader system.

2.14 Access Roads

Where practicable, existing public roads, private roads, and field paths will be utilized to access the Project. Existing roads may require improvements before, during, or after construction. Where necessary, new access roads will be constructed and maintained to facilitate year-round access to the Project. Access roads connected to turbines, MET towers, and ADLS towers will be all-weather, gravel surfaced, and approximately 16 feet wide. Access roads connected to the Collector Substation and O&M Facility will be approximately 24 feet wide.

Access roads will be constructed to maintain existing stormwater flow patterns on the surface and comply with the construction performance standards in Wis. Admin. Code § NR 151.11. The locations of new driveway entrances from public roads, as well as access road routing to turbines, will be designed to avoid or minimize crossings of existing wetlands and waterways, and in coordination with local road authorities. Waterway culvert crossings and at-grade low water crossings of shallow drainage paths, will be installed along access roads, as necessary.

2.15 MET Towers

Badger Hollow Wind previously installed three temporary MET towers, of which two are currently operational. Up to two additional MET towers may be installed to acquire wind data to confirm turbine performance. The MET towers will be self-supporting with heights not to exceed the hub height of the turbines. MET towers will be marked and lit as specified by the FAA. Final MET tower locations will depend on the final location of the turbines and specifications of the turbine manufacturer and financing parties.

2.16 ADLS Towers

The Project will comply with FAA marking and lighting standards to promote aviation safety. Turbine nacelles will be equipped with red lights to provide nighttime visibility to pilots. If approved by the FAA, an ADLS will be installed to minimize illumination time of the lights. An ADLS is an automated radar-based system that monitors airspace and activates lighting when an aircraft is detected at or below 1,000 feet above turbine tip height and approaching within 3 miles of a turbine location. When an aircraft exits the detection zone, the ADLS will turn the lights off. Up to two ADLS towers may be installed.

ADLS towers are up to 200 feet tall and are equipped with a Doppler X-band radar mounted to the top of the tower. The size of the tower and its foundation design will depend on the tower location and proximal topography. An outdoor cabinet containing ADLS equipment will be located at the base of the tower. The ADLS will be powered by the nearest turbine or local distribution line; a generator may be installed for back-up power. If the system is shut down due to an event such as a power outage, turbine lighting will switch to default operational mode, which involves regular lighting per FAA requirements. Equipment at the base of the ADLS towers will be enclosed by fencing, with a footprint of approximately 25 by 35 feet.

3. Construction

3.1 Overview

On-site construction activities are expected to take approximately 18 months and are anticipated to commence as early as the second quarter of 2025. Employees hired during construction will include skilled labor, such as foremen, carpenters, iron workers, electricians, millwrights, and heavy equipment operators, as well as unskilled laborers. Typical construction equipment such as scrapers, scarifiers, pile drivers, excavators, water trucks, batch plants and mobile batch plants, bulldozers, rollers, telehandlers, dump trucks, concrete and boom trucks, high reach bucket trucks, watering trucks, motor graders, compactors, skid steer loaders, small, medium, and large cranes, backhoes, loaders, all-terrain forklifts, SPMT trailers, and wheeled or truck-mounted auger or drill rigs will be used during construction. Construction activities for the Project are described below.

3.2 Mobilization and Site Preparation

The first step in construction will be to survey, stake, and prepare workspaces for clearing. Erosion control measures will be installed in accordance with the Project's Erosion Control and Stormwater Management Plan ("ECSWMP") and applicable permit conditions. Environmentally sensitive areas will be marked off using colored flagging or tape to signify them as avoidance areas. Workspaces will then be cleared and graded, as necessary, to provide construction access and the safe movement of equipment and personnel. An approximately 20-acre temporary general construction laydown yard will be developed and include construction trailers with administrative offices, employee parking, water service, power service, tool sheds, storage containers, and a laydown area for equipment and material delivery and storage. The general construction laydown yard may also include a temporary concrete batch plant to prepare foundations and supply any other concrete need on site.

Appropriate safety measures will be implemented before excavation begins, including notification through the Wisconsin One-Call system to ensure third-party utilities are properly marked. During construction activities, dust control measures will be conducted to manage dust along roads, the general construction laydown yard, and other construction workspaces.

Water and sanitary facilities will be established to support the construction crews on site. Water will be provided from off-site facilities, and sanitary facilities will be provided in the form of portable latrines. Some construction workspaces and the general construction laydown yard will be fenced as needed to prevent access by wildlife or unauthorized personnel.

3.3 Access Roads, Crane Paths, and Public Roads

Access roads will be constructed to connect the Project to public roadways, turbine sites, substation, Meteorological Tower, and major project features. Access roads will be utilized to access each turbine location, the Collector Substation, O&M Facility, MET towers, and ADLS towers. During construction, access roads connected to turbines may need to be temporarily widened to approximately 50 feet, with a potential limit of disturbance up to 150 feet, to accommodate transportation of the turbine erection crane and other large construction equipment.

Access roads will be constructed by first removing a layer of topsoil and organic material. The subgrade will then be compacted and constructed according to civil design requirements. Subgrade work will likely include cement stabilization, geotextiles, or other treatments as needed to create a suitable base. A layer of road base will be installed and compacted. Temporary culverts and field approaches will be installed where needed to maintain adequate access and drainage during construction. Temporary culverts can also be temporarily installed to allow proper water flow under wider crane paths. The project team can then remove these culverts and restore contours as required by design. Following completion of construction, the temporary portions of access roads will be restored by removing the gravel, decompacting the subsoil, replacing the stored topsoil, and seeding in accordance with landowner or local agency requests.

Large construction cranes will be utilized to erect the turbines. Temporary crane paths approximately 100 feet wide on participating land will be utilized between turbine locations to facilitate cross-country movement of the turbine erection crane. Where cranes are required to travel cross-country, cribbing, bedding, or mats will be placed to support the weight of the crane, minimizing impacts to the underlying ground. The cribbing, bedding, or mats will be removed immediately following passage of the crane, to be re-used ahead of the crane or elsewhere in the Project Area. Following completion of construction, crane paths will be restored by decompacting the soil and seeding in accordance with landowner or local agency requests.

Public roads may require improvements to allow for the safe and efficient access of trailers carrying turbine components and construction equipment to the Project Area. Badger Hollow Wind is in the process of identifying the optimal haul route to the Project Area and where existing road improvements may be required.

3.4 Wind Turbines

Badger Hollow Wind will initiate the construction of the turbines by clearing, removing, and stockpiling the topsoil and subsoil at each turbine site. Topsoil and subsoil will be stored separately in a semicircle around the turbine foundations. Turbine foundations will be constructed by excavating an approximately 100-foot-diameter hole, placing reinforcing steel and pouring concrete into the excavation. Next, the subsoil will be replaced over most of the concrete foundation followed by the topsoil, leaving only the pedestal of the foundation above surface grade.

Badger Hollow Wind will clear, grade, and develop an up to 250-foot radius construction workspace around each turbine site, including a 100 by 100-foot crane pad area extending from the access road to the turbine location that will be used to erect the turbine. The construction workspace will be used to lay down turbine components and maneuver the turbine erection crane during turbine assembly. Turbine components will be transported to the Project Area by semi-truck and then assembled by the turbine erection crane. The typical assembly process includes the following steps:

1. The tower sections are assembled and bolted to the foundation.
2. The hub and nacelle are mounted on the yaw ring attached to the top tower section.

3. The rotor blades are connected to the hub via anchor bolts, then connected to the main shaft protruding from the nacelle.

Each turbine will require approximately 4 to 5 days to erect. Once installed, Badger Hollow Wind will mark and light the turbines to comply with FAA requirements. Following completion of construction, the construction workspace around each turbine will be restored by decompacting the subsoil, replacing the topsoil, and seeding in accordance with landowner or local agency requests.

3.5 Electrical Collection and SCADA Systems

To install the electrical collection and SCADA systems, Badger Hollow Wind will trench, plow, or where needed, directionally bore the collector circuits and fiber optic cables underground. Directional boring will be used in locations where circuits and cables cross wetlands, waterways, and sensitive environmental features. Trenching and plowing are anticipated to be the primary methods of installation. Where trenching is appropriate, topsoil and subsoil will be excavated and segregated prior to installation. After installation, subsoil will be backfilled followed by topsoil to preserve soil stratification and continued agricultural use, as appropriate. Collector circuits will be installed at least 48 inches below ground surface and buried with marking tape and tracer wire. Badger Hollow Wind will register the appropriate underground facilities with the Wisconsin One-Call system. All equipment and structures will be appropriately grounded. Electrical equipment will be inspected, tested, and commissioned prior to being connected to the transmission system.

3.6 Collector Substation

The Collector Substation will require civil and grading work to prepare for construction and create positive drainage for the facility. Grounding, conduit, foundations, and base aggregate will be installed prior to above-ground construction of bus work and installation of major electrical equipment. All associated safety, electrical, and controls equipment will be installed using applicable utility standards. Pre-operational testing will begin once the system(s) are energized. Once the Project is fully operational, all systems will be rechecked and final site civil work completed.

3.7 Gen-Tie Line

Construction of an overhead transmission line generally follows a sequence of pre-construction surveying, right-of-way clearing, mat placement (if necessary), foundation installation, structure assembly and erection, conductor, optical ground wire (if applicable), and shield wire installation, ground rod installation, and site restoration and demobilization.

Transmission structures will either be secured using concrete foundations or directly embedded and backfilled with crushed rock or native soils. Transmission structures that are considered medium angle, heavy angle, or dead-end structures will have concrete foundations. Concrete foundation installation involves excavating and placing temporary steel casing, rebar, concrete and anchor bolt cages. The base of concrete foundations typically projects 1 to 2 feet above surface grade. Tangent and light angle structures may be placed on poured concrete foundations or directly embedded. Direct embedding involves drilling or digging a hole for each structure, filling the hole partially with crushed rock, and then setting the structure on the top of the rock

base. The area around the structure is then backfilled with crushed rock or soil once the structure is set. Any excess soil from the excavation will be spread and leveled near the structure. Foundations may vary from approximately 3 to 8 feet in diameter and 20 to 30 feet or more in depth, both dimensions will depend on soil conditions observed during final geotechnical investigation.

For the medium angle, heavy angle, and dead-end structures, after the concrete foundation is set and properly cured, the structure will be assembled on the ground, erected, and then bolted to the foundation. For larger structures, the bottom section is bolted to the foundation independently and the upper structures are attached from the top down using a crane. For tangent and light angle structures, if the structure is placed on a poured concrete foundation assembly and erection will follow the same process as medium angle, heavy angle, and dead-end structures. If the structure is directly embedded, the structure will be assembled on the ground then installed into the hole prepared for the structure. Following completion of construction, construction workspaces will be restored by decompacting the subsoil, replacing the topsoil, and seeding in accordance with landowner or local agency requests.

3.8 O&M Facility

The O&M Facility will require civil and grading work to prepare for construction and create positive drainage for the facility. Construction of the O&M building will be similar to that of a small-scale commercial building, adhering to the same building codes and safety regulations. Gravel aggregate will be installed to create the O&M storage area, which will house the equipment necessary to operate and maintain the Project. A drinking water well and septic system will be installed if connection to a local water supply is not feasible.

3.9 MET Towers

MET towers will be erected using a crane and bolted to 10 by 10-foot concrete foundations. A 150-foot radius temporary construction workspace will be required for installation of each MET tower. Badger Hollow Wind will paint MET towers to meet applicable regulations and best practices to improve visibility.

3.10 ADLS Towers

ADLS towers will be erected using a crane, depending on the final height of the towers. Foundation sizing will also depend on the final height of the towers. A 150-foot radius temporary construction workspace will be required for installation of each ADLS tower. A validation aircraft will be flown after installation to confirm design performance and operational safety of the ADLS.

3.11 Site Stabilization, Protection, and Reclamation

The existing topography within the Project Area can be described as flat to gently rolling hills with some streams and drainages present. Surface elevations within the Project Area range from 974 to 1,224 feet above mean sea level (**Exhibit 3**). Slopes within the Project Area are generally within the 0 to 6 percent range with minor areas of steeper slopes up to 30 percent. The Project will be designed to use the existing topography to the maximum extent practicable to maintain existing drainage patterns and minimize grading. An ECSWMP will be developed during final

engineering and document compliance with Wis. Admin. Code §§ NR 151.121 through 151.128. The ECSWMP is anticipated to consist of a combination of silt fences, filter socks, silt fence rock outlets, temporary diversion swales, rock checks, sediment traps, and/or temporary sediment basins. Silt fences and filter socks will be implemented in smaller drainage areas with low-velocity flow. Larger drainage areas with higher velocity sheet flow will use a combination of silt fence rock outlets, temporary diversion swales, sediment traps, and sediment basins. Vegetative buffers and additional silt fences will be implemented near sensitive areas (i.e. wetlands, etc.). Final best management practices ("BMP") will be determined during final engineering.

3.12 Waste Materials Management

The primary waste generated at the Project during construction, operation, and maintenance will be nonhazardous solid and liquid wastes. Badger Hollow Wind will prepare a Spill Prevention, Control, and Countermeasure Plan complying with all EPA and state law requirements. This plan will address waste and hazardous materials management, including BMP for storage, spill response, transportation, and handling of materials and wastes.

Non-sanitary wastewater generated during construction and operation will include stormwater runoff and equipment wash-down water. This wastewater is typically nonhazardous and will be handled consistent with WDNR permits. Any wastewater deemed hazardous by chemical quality will be handled and disposed of in accordance with WDNR permits and other applicable regulations.

4. Operations and Maintenance

Badger Hollow Wind will manage operations and maintenance of the Project. The Project will have a full-time staff of turbine technicians, a facility manager, and administrative personnel as necessary. On-site operations and maintenance activities include routine inspections, regular preventive maintenance, and unscheduled maintenance and repair to Project Facilities.

All major components of turbines will undergo routine maintenance in accordance with the schedules established by the original equipment manufacturer. Examples of such activities include lubrication filter replacements, gear oil changeouts, adding coolant, greasing, and applying paints or coatings for corrosion control. Over the life of a turbine, some mechanical components may also require repair or replacement. Badger Hollow Wind will maintain a database for tracking each turbine's operational history.

Other operations and maintenance activities include snow removal, regrading, and gravel replacement on access roads, routine electrical inspections, and the application of herbicides to control noxious and invasive weeds. Badger Hollow Wind will also conduct routine preventative maintenance testing of on-site emergency power generators and maintain fuel levels of on-site propane and fuel tanks.

As described in Section 2.9, the Project will be monitored by a SCADA system that will provide telemetry, control, and communication among the turbines, Collector Substation, Gen-Tie Line, O&M building, ADLS, and transmission system enabling the Project to be monitored in real time

by technicians as well as by staff at a 24/7 off-site operations facility. O&M staff will be on-site during normal working hours to monitor operations and conduct maintenance activities.

Badger Hollow Wind will communicate regularly with local first response agencies and coordinate training meetings in accordance with the Project's Emergency Response Plan. Should any aspect of the Project construction or operations present unfamiliar situations for first responders, Badger Hollow Wind will arrange for adequate professional training to address those concerns.

5. Decommissioning

At the end of commercial operations, Badger Hollow Wind will be responsible for removing all Project Facilities to a depth of 48 inches below grade. Participating landowners will not be responsible for decommissioning costs. Restored areas will be seeded to stabilize exposed soil or de-compacted and returned to agricultural use in accordance with the lease and easement agreements. Access roads will be removed at the discretion of the landowner(s). Some Project Facilities, such as the O&M Facility, Collector Substation, and Gen-Tie Line may remain in use or be repurposed after the end of the useful life of the wind energy generating facility. Project facilities that remain in use or can be repurposed will not be removed during decommissioning.

6. Existing Environment

6.1 Land Cover Types

Land cover within the Project Area was mapped and described using data and descriptions from the 2016 Wiscland 2.0 Land Cover Database ("Wiscland"), which combines ground level mapping, satellite imagery, and United States Department of Agriculture data in a product produced jointly by the WDNR, UW-Madison, and the State Cartographer's Office. A total of seven land cover types were identified and mapped within the Project Area (**Exhibit 4**). The majority of the Project Area is comprised of Agriculture (73.8 percent) or Grassland (24.3 percent). Urban/Developed, Forest, Barren, Open Water, and Wetland comprise the remaining land cover types within the Project Area (**Table 6.1**). Field reconnaissance conducted from October 27 to 28, 2022 recorded land cover types and extent that were generally consistent with Wiscland data.

Table 6.1 Wiscland Land Cover Types within the Project Area (Wiscland 2016)

Land Cover Type	Acres	Percent of Total
Agriculture	11588.3	73.8
Grassland	3808.9	24.3
Urban/Developed	211.6	1.3
Forest	71.4	0.5
Barren	9.8	0.1
Open Water	8.5	0.1
Wetland	5.3	0.0
Total	**15,703.8**	**100.0**

6.2 Wetlands and Riparian Areas

According to the Wisconsin Wetland Inventory ("WWI"), a total of 27.07 acres of wetlands are mapped within the Project Area (WDNR, 2021) (**Exhibit 5**).

According to the WDNR 24K Hydrography Dataset (WDNR, 2021) 58 segments totaling 50.61 linear miles of Waterbody Identification Code ("WBIC") flowlines are mapped within the Project Area and include portions of named streams Sudan Branch, Livingston Branch, Pecatonica River, Platte River, and Little Platte River (**Exhibit 5**) (**Table 6.2a**). No waterbodies were identified within the Project Area from the WDNR 24K Hydrography Dataset, but the WWI indicated several wetlands classified as open water within the Project Area.

Table 6.2a WBIC Flowlines within the Project Area

Feature Type	Miles	Number of Features
WBIC Flowlines	50.61	58
Total	**50.61**	**58**

The approximately 15,704-acre Project Area was assessed via a desktop evaluation to identify potential wetlands and waterways not captured in mapping resources. In these areas, a desktop wetland delineation was performed using available public resources, including the WDNR Surface Water Data Viewer, and multiple years of historical aerial imagery. Desktop-delineated features were assigned one or more Eggers and Reed Classifications. Two-hundred eight wetlands and wetland complexes totaling 540.47 acres were desktop-delineated within the Project Area and consisted of wet meadow (102), seasonally flooded basins (61), shallow marsh (40), floodplain forest (19), shrub-carr (4), and shallow open water (3) wetland types. These features are summarized in **Table 6.2b** and depicted in **Exhibit 5.** A total of 3.14 linear miles of additional waterways were desktop-delineated that are not already represented by the WBIC flowlines in **Table 6.2a**. Fourteen waterway segments totaling 5.12 acres were desktop delineated (**Table 6.2b**).

Field water resource delineations are planned for 2024 for participating portions of the Project Area. The data from the field delineations will supersede the desktop-mapped information and be used in final engineering design and assessment of Project impacts.

Table 6.2b Desktop-Delineated Features within the Project Area

Eggers and Reed	Classification Acres	Number of Features
Fresh Wet Meadow	369.04	102
Shallow Marsh	77.19	40
Seasonally Flooded Basin	42.17	61
Floodplain Forest	38.0	19
Shallow Open Water	8.98	3
Shrub Carr	5.09	4
Desktop-delineated waterways (beyond WBIC flowlines)	5.12 (3.14 linear miles)	14 segments
Total	**545.59**	**243***

Table 6.2b Desktop-Delineated Features within the Project Area		
Eggers and Reed	**Classification Acres**	**Number of Features**
*A total of 229 Eggers and Reed classes among 208 desktop-delineated wetlands and wetland complexes and 14 segments of desktop-delineated waterways.		

6.3 Federal and State Listed Species

The Project Area was evaluated for the potential presence of federally or state-listed species and their habitats. Federally protected species include those characterized by the United States Fish and Wildlife Service ("USFWS") under the authority of the Endangered Species Act of 1973 (16 United States Code [USC] 1531–1544) as threatened or endangered, as well as those proposed for listing (i.e., candidate species). Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act enforced by the USFWS (16 U.S.C. 668-668c). The WDNR also maintains a list of threatened and endangered species for Wisconsin. Laws and regulations pertaining to state-listed endangered or threatened species are contained in Wisconsin State Statute 29.604 and Administrative Rule Chapter NR 27.

6.3.1 Federally Protected Species

An USFWS Information for Planning and Consultation ("IPaC") response dated October 19, 2022 identified six federally listed, candidate or proposed for listing species as potentially occurring within the Project Area. The species identified include the federally endangered northern long-eared bat (*Myotis septentrionalis* [formerly listed threatened]) and Hine's Emerald Dragonfly (S*omatrochlora hineana*); federally threatened Mead's milkweed (*Asclepias meadii*) and Northern Wild Monkshood (*Aconitum noveboracense*); candidate species Monarch butterfly (*Danaus plexippus*) and the non-essential experimental population of Whooping Crane (*Grus americana*). Candidate species and species proposed for listing are not afforded regulatory protections; however, these species may require further review if they are listed. Non-essential experimental population designations are assigned to populations deemed unnecessary for the continued existence of the species (USFWS, 2016). Regulatory restrictions are reduced for non-essential experimental populations. Badger Hollow Wind is in the process of renewing the IPaC to receive an updated list of required and recommended actions for the Project.

There are no designated critical habitats identified within the Project Area for any federally protected species.

Based on a review of the WDNR Natural Heritage Inventory portal, no known bald or golden eagle nests are located within the Project Area; however, based on two years of raptor nest surveys, there is one bald eagle nest within the Project Area that was active in both 2022 and 2024.

6.3.2 State-Protected Species

A WDNR Endangered Resources Review ("ERR") response dated December 15, 2022 (ERR Log # 22-830) identified required actions for one state-endangered and two state-threatened species. Required actions include time of year restrictions, presence/absence surveys and implementation of erosion and runoff prevention measures. Recommended actions for three state-endangered, one state-threatened, and six special concern plants species, one reptile species of concern and one raptor species were included in the response. Recommended actions include

surveys and habitat assessments for plant species and time of year restrictions and surveys for the reptile species and raptor species. Two species and three communities had no follow-up actions and additional recommendations were provided regarding wildlife friendly erosion control matting.

Badger Hollow Wind is in the process of renewing the ERR to receive an updated list of required and recommended actions for the Project.

6.4 Special Management Areas

A desktop evaluation was conducted using the United States Geological Survey (2023) Protected Areas Database of the United States (PADUS, 2023) to document special biological resource management areas such as conservation easements and state or federal lands managed for biodiversity within the Project Area and an associated 2-mile buffer. Results of this effort indicated that no public lands were identified within the Project Area. One natural area, the Pecatonica River Woods State Natural Area is located within the 2-mile buffer southeast of the Project Area (**Exhibit 1**). WDNR Public Access Lands also shows the Headwaters Little Platte River State Habitat Area and the Headwaters Little Platte River State Bank Easement Area within the 2-mile buffer southwest of the Project (**Exhibit 1**).

7. Permits and Approvals

All potentially required federal- and state-level permits and approvals that may be necessary for the construction of the Project are identified in **Table 7**. Permits to be applied for will be determined based on Badger Hollow Wind's final engineering following issuance of a Final Decision in the CPCN proceeding. In addition to the permits identified in **Table 7**, Badger Hollow Wind may apply for local permits to facilitate cooperation with local governments. In the event local permits are withheld or delayed, installation and utilization of the facility may nevertheless proceed under Wisconsin Statute § 196.491(3)(i).

Table 7 Preliminary Permits and Approvals

Agency	Permit/Approval	Notes
Federal		
Federal Aviation Administration	FAA Determinations	Required for any proposed construction over 200 feet above ground level.
United States Department of Commerce – National Telecommunications and Information Administration	NTIA Letter of Concurrence	No interference with federal communication systems anticipated.
United States Army Corps of Engineers	Section 401 Water Quality Certification	Impacts to jurisdictional water resources will be avoided and minimized to the extent practicable. The final Project footprint will be evaluated to determine the appropriate authorization for unavoidable impacts.

Table 7 Preliminary Permits and Approvals		
Agency	**Permit/Approval**	**Notes**
United States Army Corps of Engineers	Section 404 Wetland Permit	Impacts to jurisdictional water resources will be avoided and minimized to the extent practicable. The final Project footprint will be evaluated to determine the appropriate authorization for unavoidable impacts.
United States Army Corps of Engineers	Section 10 Waterway Permit	Impacts to jurisdictional water resources will be avoided and minimized to the extent practicable. The final Project footprint will be evaluated to determine the appropriate authorization for unavoidable impacts.
United States Fish and Wildlife Service	Endangered Species Act Review	Consultation is required if the Project has a federal nexus or otherwise may impact federally listed species or designated critical habitats. Endangered Species Act Review includes potential for Incidental Take Permit.
State		
Public Service Commission of Wisconsin	Certificate of Public Convenience and Necessity	Required for construction of a large electric generating facility.
Wisconsin Department of Natural Resources	Wetland Fill Permit (Wis. Stat. Ch. 281)	Impacts to wetland resources will be avoided and minimized to the extent practicable. Field delineations within the final Project footprint will be performed to determine the presence and extent of wetland resources, quantify potential impacts, and determine the appropriate authorization for unavoidable impacts.
Wisconsin Department of Natural Resources	Construction Affecting Navigable Waterways (Wis. Stat. Ch. 30)	Impacts to jurisdictional water resources will be avoided and minimized to the extent practicable. The final Project footprint will be evaluated to determine the appropriate authorization for unavoidable impacts.
Wisconsin Department of Natural Resources	Wisconsin Pollutant Discharge Elimination System Pit/Trench De-Watering (Wis. Stat. Ch. 283)	Required for point-source discharge of any pollutants into the waters of the State.
Wisconsin Department of Natural Resources	Wisconsin Pollutant Discharge Elimination System Construction	Required for land disturbance or construction activities that disturb one or

Table 7 Preliminary Permits and Approvals		
Agency	**Permit/Approval**	**Notes**
	Stormwater General Operating Permit (Wis. Stat. Ch. 283, Wis. Admin. Code Ch. NR 216 & NR 151)	more acres with a point source discharge to surface waters of the United States.
Wisconsin Department of Natural Resources	Incidental Take of Threatened or Endangered Resource (Wis. Stat. Ch. 29)	Consultation and the potential for an Incidental Take Permit is required if state listed species are impacted.
Wisconsin Department of Natural Resources	Private Well Notification Number	Required for construction of a private well.
Wisconsin Department of Transportation	Oversize-Overweight Vehicle Permit	Required for any vehicles exceeding posted limits on state roads.
Wisconsin Department of Transportation	Connection Permit	Required for construction of driveway or public/private road on property abutting a state highway.
Wisconsin Department of Transportation	Right-of-Way Permit	Required for any construction in a state highway right-of-way.
Wisconsin Department of Transportation	Utility Permit	Required for construction or maintenance of a utility facility in state highway right-of-way.
Wisconsin Department of Transportation	High Structure Permit	Required for construction of a structure greater than 500 feet above ground level.
Wisconsin Department of Safety and Professional Services	Electrical and Plumbing Plan Review	Required for installation of electrical, plumbing, and certain mechanical systems in a commercial building.

8. Schedule

A preliminary schedule for the Project is provided in **Table 8**.

Table 8 Preliminary Schedule	
Activity	**Date**
EP Submittal	Q2 2024
CPCN Application Submittal	Q3 2024
Start of Construction	Q2 2025
Commercial Operation Date	Q4 2026

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Badger Hollow Wind Energy Center

Iowa and Grant Counties, Wisconsin

Project Area Map

Exhibit 1

Data Source(s): Westwood (2024); NAIP (2022); HIFLD (2024); U.S. Census Bureau (2021); PADUS (2023).

N

0 1.25 Miles

Legend

- Project Area
- 2-Mile Project Area Buffer
- County Boundary
- Municipal Boundary
- PADUS Public Land
- Existing Transmission Line
- Major Road
- Local Road
- Municipal Township Point

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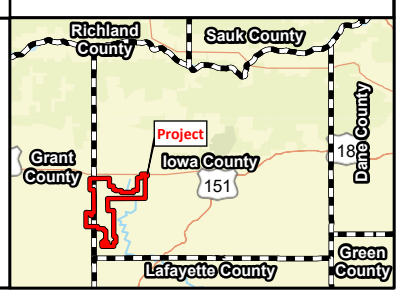

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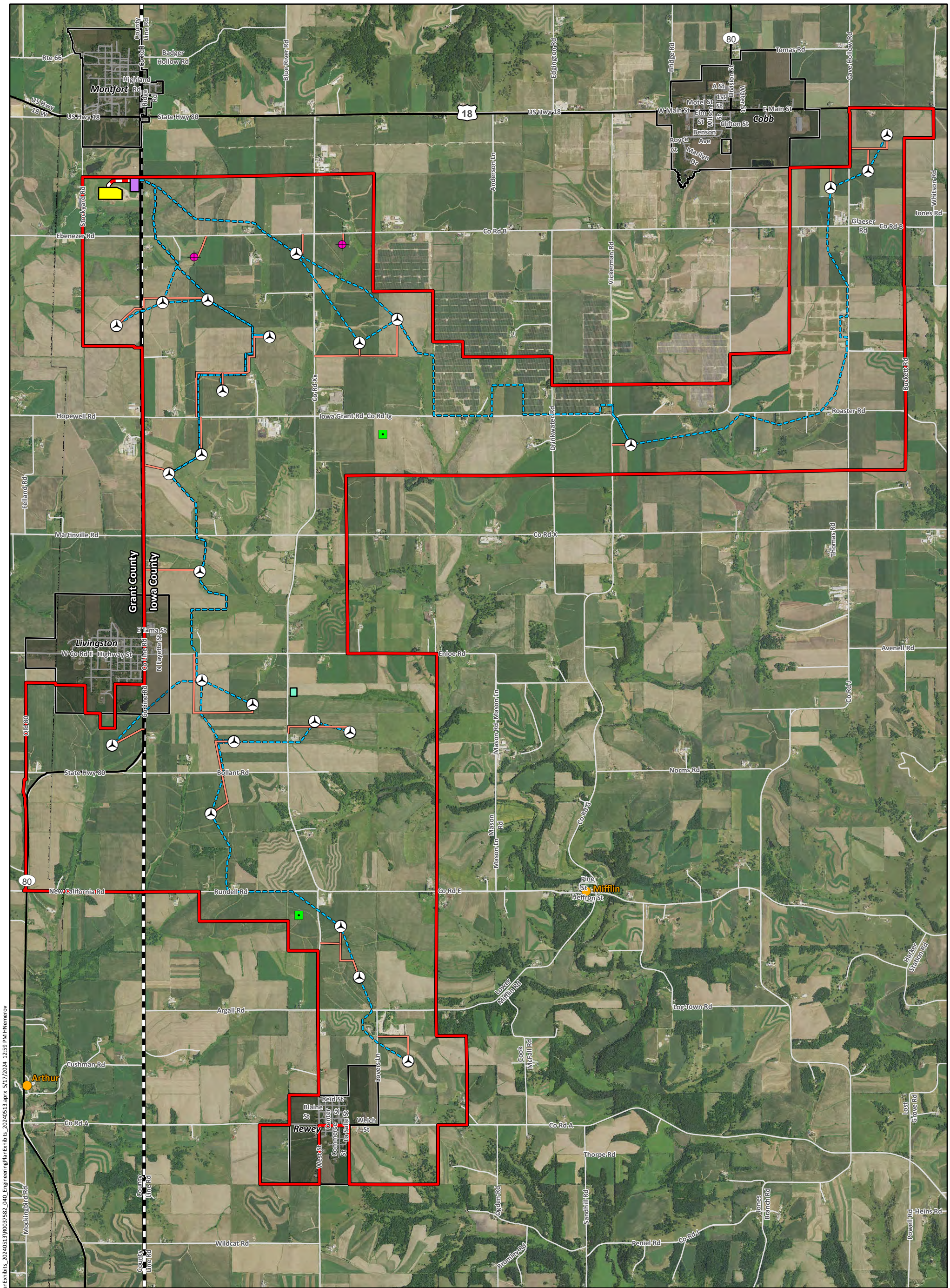

Data Source(s): Westwood (2024); NAIP (2022); U.S. Census Bureau (2021).

N

0 4,000 Feet

Badger Hollow Wind Energy Center

Iowa and Grant Counties, Wisconsin

Preliminary Project Layout Map

Exhibit 2

Legend

- Project Area
- County Boundary
- Municipal Boundary
- Collector Substation
- O&M Facility
- Interconnection Switchyard
- Electrical Collection System
- Gen-Tie Line
- Access Road
- Major Road
- Local Road
- Turbine
- Meteorological Tower
- Aircraft Detection Lighting System Tower
- Municipal Township Point

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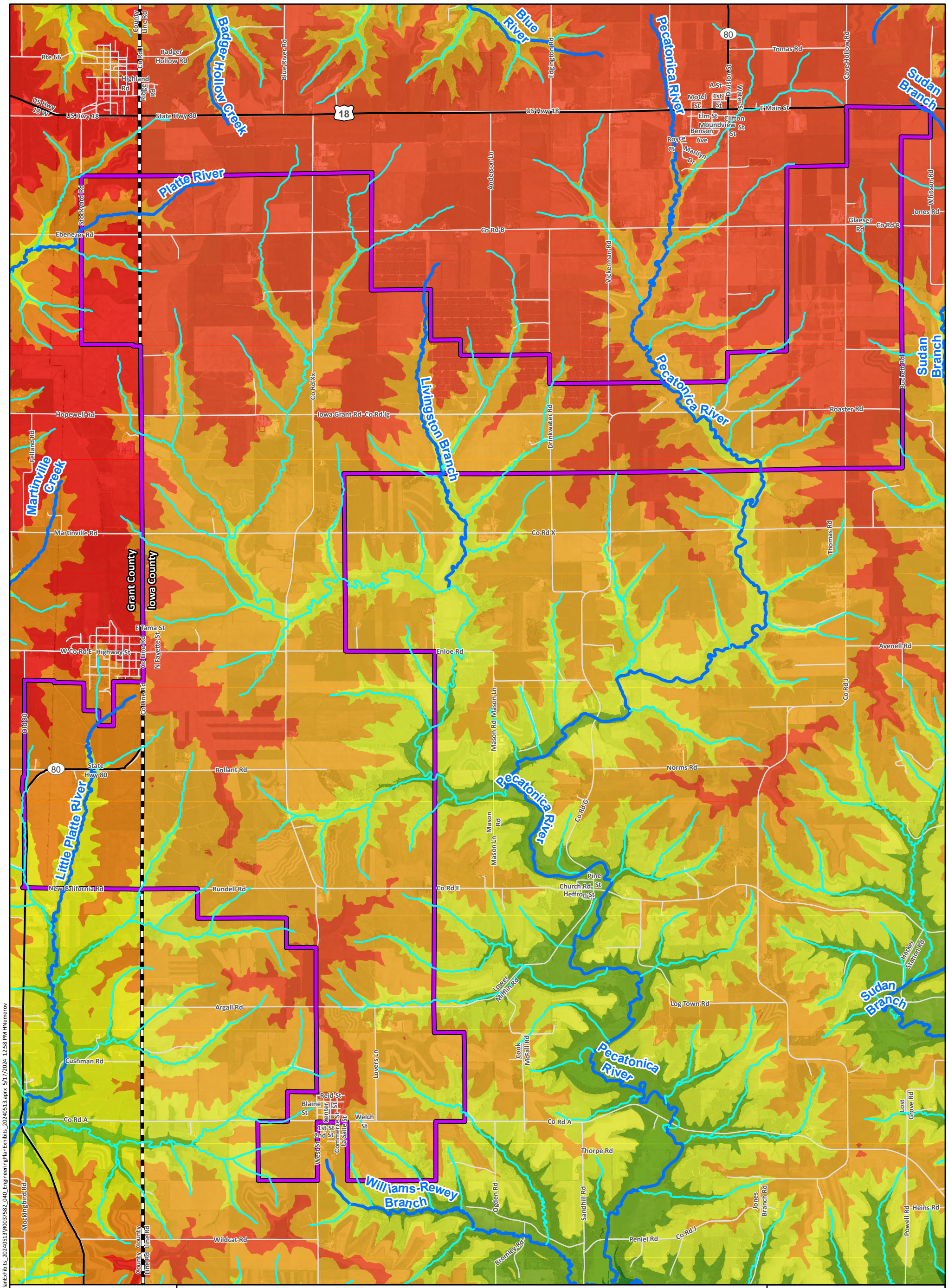

Data Source(s): Westwood (2024); NAIP (2022); U.S. Census Bureau (2021); WDNR (2023).

N

0 4,000 Feet

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Iowa and Grant Counties, Wisconsin

Topography & Major Drainage Features Map

Exhibit 3

Legend

- Project Area
- County Boundary
- Major Drainage Feature
- Minor Drainage Feature
- Major Road
- Local Road

Elevation Ranges

- 293 ft - 890 ft
- 891 ft - 1,002 ft
- 1,003 ft - 1,074 ft
- 1,075 ft - 1,136 ft
- 1,137 ft - 1,717 ft

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Badger Hollow Wind Energy Center

Land Cover Map

Iowa and Grant Counties, Wisconsin

Exhibit 4

Data Source(s): Westwood (2024); NAIP (2022); Wisconsin Land Cover Dataset (2016); U.S. Census Bureau (2021); .

N

0 4,000 Feet

Legend

- Project Area
- County Boundary
- Major Road
- Local Road

Wiscland Level 1 Land Cover Classification

- Agriculture (73.8%)
- Grassland (24.3%)
- Urban/Developed (1.3%)
- Forest (0.5%)
- Barren (0.1%)
- Open Water (0.1%)
- Wetland (<0.1%)
- Local Road

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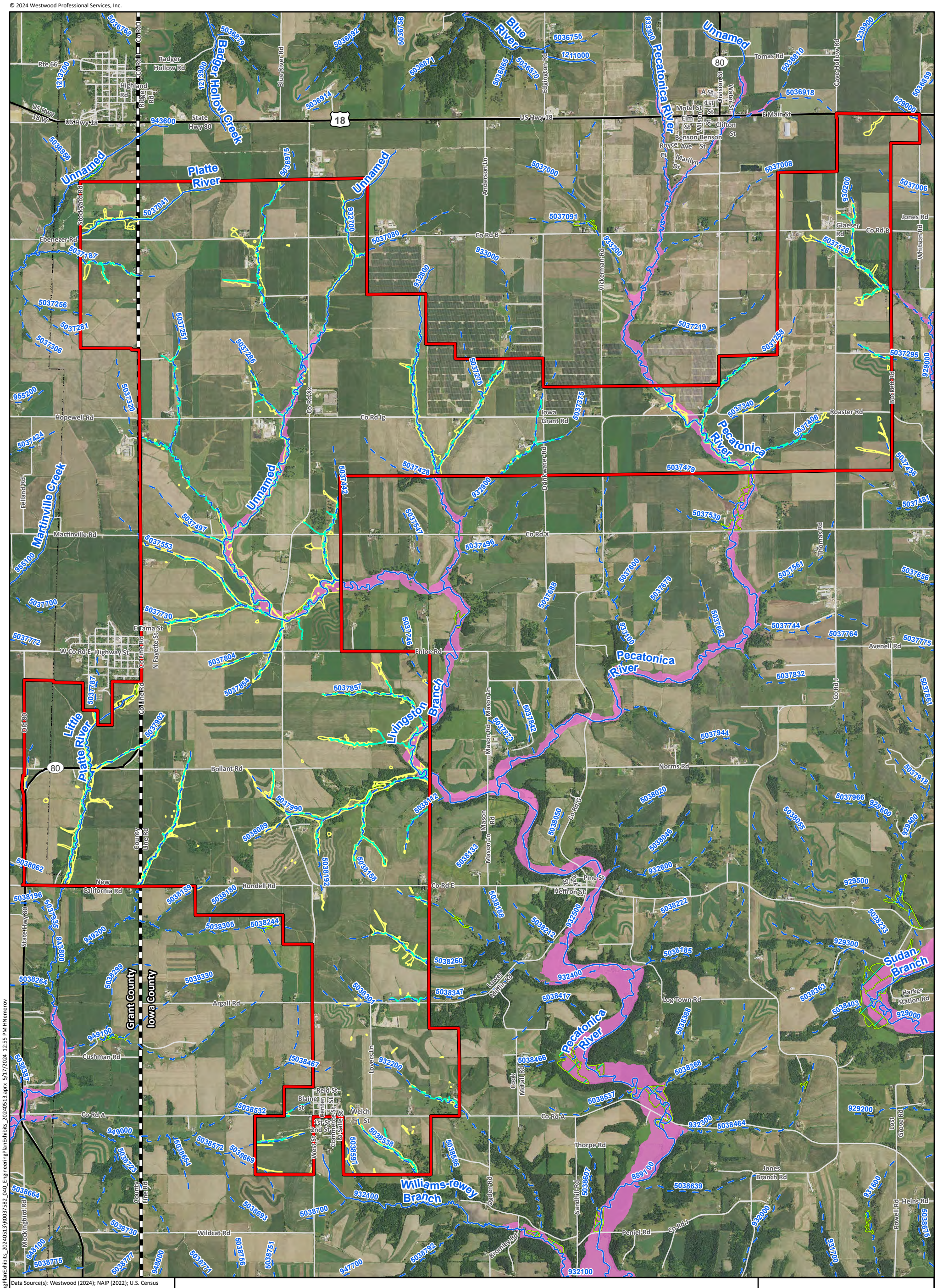

Data Source(s): Westwood (2024); NAIP (2022); U.S. Census Bureau (2021); Wisconsin DNR (2023).

N

0 4,000 Feet

Badger Hollow Wind Energy Center

Iowa and Grant Counties, Wisconsin

Water Resources Map

Exhibit 5

Legend

- Project Area
- County Boundary
- Desktop Delineated Waterway
- Desktop Delineated Wetland
- 100-Year Floodplain
- WWI Wetland
- Major Road
- Local Road

WDNR 24k WBIC Flowlines

- Perennial Stream
- Intermittent Stream

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