APPLICATION FOR AMENDED CERTIFICATE OF SITE COMPATIBILITY

Submitted to:

NORTH DAKOTA PUBLIC SERVICE COMMISSION

Submitted by:

BADGER WIND, LLC

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LOGAN AND MCINTOSH COUNTIES, NORTH DAKOTA

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ACRONYM LIST

ADLS	Aircraft Detection Lighting System
AGL	Above Ground Level
APE	area of potential effects
Application	Application for an Amended Certificate of Site Compatibility
AM	amplitude modulation
Badger Wind	Badger Wind, LLC
BBCS	Bird and Bat Conservation Strategy
BCC	Birds of Conservation Concern
BLM	Bureau of Land Management
BMP	best management practices
BOP	Balance-of-Plant
CRP	Conservation Reserve Program
CSC	Certificate of Site Compatibility
CUP	Conditional Use Application
CWA, Act	Clean Water Act
dB	decibels
dBA	A-weighted decibels
DoD	Department of Defense
ECP/EMP	Eagle Conservation Plan/Eagle Management Plan
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
FM	frequency modulation
ft	foot/feet
FRS	Facility Registry Service
GE	General Electric
ICBM	intercontinental ballistic missile
IPaC	Information for Planning and Consultation
km	kilometer
kV	kilovolt
kW	kilowatt
LNTE	low-noise trailing edge
LUST	Leaking Underground Storage Tank
m	meter
MDU	Montana-Dakota Utilities
MET towers	meteorological evaluation towers
MISO	Midcontinent Independent System Operator
m/s	meters per second

MW	megawatt
mi	miles
MOU	Memorandum of Understanding
ND	North Dakota
NDAC	North Dakota Administrative Code
NDCC	North Dakota Century Code
NDDA	North Dakota Department of Agriculture
NDDEQ	North Dakota Department of Environmental Quality
NDDOT	North Dakota Department of Transportation
NDDTL	North Dakota Department of Trust Lands
ND DWR	North Dakota Department of Water Resource
NDGF	North Dakota Game and Fish
NDPDES	North Dakota Pollutant Discharge Elimination System
NDPR	North Dakota Parks and Recreation
NLCD	National Land Cover Data
NLEB	northern long-eared bat
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NTIA	U.S. Department of Commerce, National Telecommunications, and Information Administration
NWI	National Wetlands Inventory
NWR	National Wildlife Refuge
O&M	operations and maintenance
Order	Findings of Fact, Conclusions of Law and Order
Ørsted	Ørsted Onshore North America, LLC
PLOTS	Private Land Open to Sportsmen
Project	Badger Wind Project
Project Area	the 35,227-acre area of the Badger Wind Project
PSC	Public Service Commission
Q1, Q2, Q3, Q4	first, second, third, or fourth quarter of the year, respectively
RGA	Recovered Government Archive
ROW	right-of-way
SCP	species of conservation priority
SHPO	State Historic Preservation Office
SHSND	State Historical Society of North Dakota
SPCC	Spill Prevention, Control, and Countermeasure
Study Area	Area assessed for project suitability, approximately 127,092 acres
SWPPP	Stormwater Pollution Prevention Plan
TV	television
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service

USGS	U.S. Geological Survey
UST	Underground Storage Tank
WEG	Wind Energy Guidelines
WMA	Wildlife Management Area
WNS	white-nose syndrome
WOTUS	waters of the United States
WPA	Waterfowl Production Area

1. INTRODUCTION

On November 30, 2022, the North Dakota (ND) Public Service Commission (PSC or Commission) issued its Findings of Fact, Conclusions of Law and Order (Order), along with Certificate of Site Compatibility (CSC) No. 64 (Case No. PU-22-86) to Badger Wind, LLC (Badger Wind) for the Badger Wind Project (Project) in Logan County and McIntosh County, North Dakota. Since then, Badger Wind has made changes to the Project, which include expanding the Project boundary and design modifications. Accordingly, pursuant to North Dakota Century Code (NDCC) Section 49-22-08(5), Badger Wind is submitting to the PSC this Application for an Amended Certificate of Site Compatibility (Application) for the updated Project.

1.1. Overview of Project Updates

As Badger Wind explained at the June 2022 public hearing before the PSC, Badger Wind had been looking into a range of turbine models, including the 3.4-megawatt (MW) turbine used for analysis purposes in the Application for a Certificate of Site Compatibility submitted by Badger Wind in February 2022 (2022 CSC Application) as well as smaller turbine model(s). After the CSC was issued, market conditions required Badger Wind to further analyze turbine model options for the Project. Additionally, in June 2023, Badger Wind was finally successful in obtaining leases from a competitor in the area that it had been trying to acquire since prior to submitting the 2022 CSC Application in February 2022. With this additional land, Badger Wind was able to consider smaller turbine options that make the Project more economically attractive to potential offtakers. Thus, Badger Wind redesigned the Project to accommodate the 2.82 MW turbine now under consideration for the current Project, which best matches the energy profile at this site and allows more landowner participation in the Project.

Badger Wind then proceeded to conduct updated and additional surveys and studies for the updated Project Area in coordination with the appropriate wildlife agencies, and determined what updates were needed to permits such as the CSC and the Logan County wind energy siting / conditional use permit.

As a result of these efforts and analyses, Badger Wind updated the Project as follows: The Project is now located within an approximately 35,227-acre Project Area (compared to the 31,467-acre Project Area approved in the Order and CSC) (see **Figure 3: Comparison Figure**), and Badger Wind is now considering a 2.82 MW turbine (rmather than a 3.4 MW turbine as was contemplated previously). The PSC Order and CSC approved up to 79 potential turbine locations (see Hearing Exhibit No. 2 and Order Finding No. 4). As a result of the additional land added to the Project Area and the smaller turbine, Badger Wind is now proposing 103 potential turbine locations, of which up to 93 turbines will be constructed. The Project facilities are shown on **Figure 2: Project Facilities** and will include:

- 103 wind turbine locations, of which, up to 93 wind turbines will be constructed;

- buried electrical collection lines and communication lines, with aboveground junction boxes and/or underground splices;
- new gravel access roads and improvements to existing roads, as necessary;
- a collector substation;
- five proposed permanent meteorological evaluation tower (MET) positions, of which up to three will be constructed;
- an aircraft detection lighting system (ADLS) and related equipment;
- an operations and maintenance (O&M) facility located in McIntosh County; and
- temporary facilities, including: a temporary batch plant, a laydown yard for construction offices, a multi-purpose laydown area to support the Project's construction activities, a marshalling yard to assist with logistics during turbine component deliveries, temporary crane paths, and temporary road improvements, as needed.

The Project will still interconnect via an approximately 0.25-mile transmission line extending from the Project substation to the Wishek Junction 230-kilovolt (kV) substation owned and operated by Montana-Dakota Utilities (MDU).

The current Project continues to meet all requirements of the Order and CSC, as well as all applicable PSC and local siting requirements, as demonstrated throughout this Application. Additionally, as discussed in **Section 6.2.3**, Badger Wind submitted an application for a new Wind Energy Facility Siting Permit/Conditional Use Permit for the current Project on 6 December 2023 and anticipates Logan County will issue the new permit in Q1 2024.

1.2. Project Description

1.2.1. Study Area

As a result of the updated Project Area, the Study Area has been revised to add approximately 1,138 acres of land in Logan and McIntosh Counties, thereby increasing the Study Area from approximately 125,954 acres to approximately 127,092 acres (see **Figure 1: Project Location**). **Table 1-1**: **Study Area Location** summarizes the townships, sections, and ranges included in the Study Area.

Table 1-1: Study Area Location

Township Name	County	Township	Range	Section(s)
Unorganized Territory	McIntosh	130N	71W	2–6
Unorganized Territory	McIntosh	130N	72W	1–6
Unorganized Territory	McIntosh	131N	71W	2–11, 13-36

Township Name	County	Township	Range	Section(s)
Unorganized Territory	McIntosh	131N	72W	1–5, 7, 9–36
Unorganized Territory	McIntosh	131N	73W	13–14, 23–26, 35–36
Unorganized Territory	McIntosh	132N	70W	4–8
Unorganized Territory	McIntosh	132N	71W	1, 4-9, 12, 17–22, 26–35
Unorganized Territory	McIntosh	132N	72W	1–4, 9–15, 22–29, 32–36
Unorganized Territory	Logan	133N	70W	6–8, 15–22, 27–34
Unorganized Territory	Logan	133N	71W	1–36
Unorganized Territory	Logan	133N	72W	1–5, 8-13, 15-17, 20-22, 24-25, 35-36
Red Lake	Logan	134N	71W	31–33
Starkey	Logan	134N	72W	25–29, 32–36
Note: Land added to the Study Area since the 2022 CSC Application is indicated in blue.				

1.2.2. Project Area

The current Project Area is comprised of approximately 35,227 acres in Logan and McIntosh Counties (see **Figure 1: Project Location**). Since the Project was approved by the PSC in 2022, approximately 3,760 acres of land were added to the Project Area and two parcels (Land Parcels 2606002 and 00564000) comprising 313.5 acres were removed from the Project Area based on consultations with the affected landowner (see **Figure 3: Comparison Figure**). As discussed above, in June of 2023, Badger Wind completed its acquisition of a competitor's project holdings in the local area (Open Range Wind). That acquisition allowed Badger Wind to slightly expand the Project footprint, extending the Project benefits to additional landowners and allowing more optionality in turbine selection.

Table 1-2 summarizes the townships, sections, and ranges included in the current Project Area.

Table 1-2: Project Area Location

Township Name	County	Township	Range	Section(s)
Unorganized Territory	Logan	133N	70W	6–8, 16–21, 28-33
Unorganized Territory	Logan	133N	71W	3–6, 8–10, 12, 14, 15, 18–23, 25–29, 30–36
Unorganized Territory	Logan	133N	72W	13, 24, 25, 36
Red Lake	Logan	134N	71W	31–32
Unorganized Territory	McIntosh	132N	70W	5–7
Unorganized Territory	McIntosh	132N	71W	1, 4–8, 12, 17–21, 28-33
Unorganized Territory	McIntosh	132N	72W	1, 2, 9-14, 23
Note: Land added to the Project Area since the 2022 CSC Application is indicated in blue.				

1.2.3. Interconnection

The Project will interconnect to the Midcontinent Independent System Operator (MISO) system via a 230-kV generation interconnection tie line (Gen-Tie Line) less than one mile in length (approximately 0.25 miles [mi]) extending from the Project's collector substation to the existing Wishek Junction 230-kV substation owned and operated by Montana-Dakota Utilities Company (MDU). The substation is located approximately 1.2 mi west of Wishek in McIntosh County, North Dakota. The Project will have a nameplate capacity of up to 262.26 MW, with up to 250 MW delivered to the grid. Badger Wind has executed a Generation Interconnection Agreement with MISO.

1.2.4. Projected Output

The Project will have a nameplate capacity of up to 262.26 MW. The Project's interconnection request will permit up to 250 MW to be delivered to the grid. The Project has a projected average output ranging from 1,000,000 to 1,200,000 MW hours per year. Variations in the actual project output will depend upon final wind turbine selection and any additional changes to the final design and layout of the facility. As a point of reference, this amount of electrical output is enough to power approximately 70,000 average American homes.

1.2.5. Project Schedule

The following list provides details of the updated anticipated schedule for the Project:

- **Land Acquisition**: All participating landowner agreements have been secured.
- **PSC CSC and CSC Amendment**: Badger Wind obtained a CSC from the PSC on November 30, 2022. Badger Wind submitted an application to amend the CSC in Q1 2024 and anticipates the amended CSC will be issued by the PSC in Q2 or Q3 2024.
- **Logan County Wind Energy Facility Siting Permit/Conditional Use Permit (CUP)**: Badger Wind submitted an application for the updated Project in December 2023 and anticipates Logan County will issue the new wind energy facility siting permit / conditional use permit in Q1 2024.
- **Other Permits**: Badger Wind will acquire all other permits necessary for construction of the Project prior to conducting the work for which a permit is required.
- **Construction**: Project construction is anticipated to begin as early as Q3 2024 and be completed by Q4 2026.
- **Commissioning**: Upon completion of the construction phase, the Project will undergo detailed inspection and testing procedures before being commissioned.
- **Commercial Operations**: Badger Wind anticipates full commercial operation to occur as early as 2025 or by 2026.

1.2.6. Expansion or Addition

Badger Wind does not propose any additions or expansions to the current Project Area at this time. Should Badger Wind develop adjacent areas in the future, all necessary permits and approvals would be obtained to allow such an expansion.

1.2.7. Project Ownership

The Project will be developed, constructed, owned, and operated by Badger Wind.

1.2.8. Project Cost

The estimated total cost to construct the Project is approximately USD 472M.

2. NEED FOR FACILITY

Badger Wind has identified a shortlist of interested off-takers for the Project's output. As an independent power producer, Badger Wind is able to bid into a variety of markets and contractual structures. The updates to the original Project footprint and layout significantly strengthen the underlying project fundamentals by increasing the Project's net capacity factor, thereby strengthening Badger Wind's market position. The need for the Project was described in Section 2 of Badger Wind's 2022 CSC Application and remains accurate and applicable to the updated Project. Therefore, please refer to Section 2 of the 2022 CSC Application.

Pursuant to NDCC Section 49-22-04 and North Dakota Administrative Code (NDAC) Chapter 69-06-02, Badger Wind submitted a Ten-Year Plan for years 2024–2034 in February 2024. Badger Wind's Ten-Year Plan, included as **Appendix B: Badger Wind, LLC's, Ten-Year Plan**, is consistent with the contents of this Application.

3. SITE SELECTION CRITERIA

Badger Wind selected the Project Area based on a number of factors, including the excellent wind resource, support from landowners, regional demand for renewable energy, and compatibility with existing land uses and resources. In addition, site selection for the Project was based on the criteria outlined in NDAC Chapter 69-06-08. These criteria are discussed further below.

3.1. Compliance with Exclusion Areas

Per NDAC Sections 69-06-08-01(1) and (2), the geographical areas listed in **Table 3-1: Summary of Exclusion Areas** below shall be excluded in the consideration of a site for an energy conversion facility and a wind energy conversion facility. **Table 3-1: Summary of Exclusion Areas** summarizes these exclusion areas and their presence or absence in the Project Area, notes the information discussed in the 2022 CSC Application filings and the PSC Order granting a CSC for each criterion, and provides any updates to the information for the current Project. The current Project complies

with all exclusion areas. Exclusion areas within the current Study Area and Project Area are depicted in **Figure 4: Exclusion Areas**.

Table 3-1: Summary of Exclusion Areas

Exclusion Area	2022 CSC Application / PSC Order		Current Project	
	Present Within Project Area?	Description	Present Within Project Area?	Description
General Exclusion Areas				
Designated or registered national: parks; memorial parks; historic sites and landmarks; natural landmarks; historic districts; monuments; wilderness areas; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; and grasslands.	None	N/A	No change	No change
Designated or registered state: parks; forests; forest management lands; historic sites; monuments; historical markers; archaeological sites; grasslands; wild, scenic, or recreational rivers; game refuges; game management areas; management areas; and nature preserves.	None	N/A	No change	No change
County parks and recreational areas; municipal parks; parks owned or administered by other governmental subdivisions; hardwood draws; and enrolled woodlands.	None	N/A	No change	No change
Areas critical to the life stages of threatened or endangered animal or plant species.	None	N/A	No change	No change
Areas where animal or plant species that are unique or rare to this state would be irreversibly damaged.	None	N/A	No change	No change

Exclusion Area	2022 CSC Application / PSC Order		Current Project	
	Present Within Project Area?	Description	Present Within Project Area?	Description
Areas within 1,200 ft of the geographic center of an intercontinental ballistic missile (ICBM) launch or control facility.	None	No ICBMs are in Logan or McIntosh County.	No change	No change
Areas within 30 ft (9.14 meters[m]) on either side of a direct line between an ICBM launch facility and a missile alert or launch control facilities to avoid microwave interference. This restriction only applies to aboveground structures, not to surface features, such as roads, or belowground infrastructure.	None	No ICBMs are in Logan or McIntosh County.	No change	No change
Additional Exclusion Areas for Wind Energy Conversion Facilities				
1.1 times the turbine height from the nearest edge of an interstate or state roadway right-of-way (ROW).	Present	No turbines will be sited in these exclusion areas.	No change	No change
1.1 times the turbine height plus 75 ft from the centerline of any county or maintained township roadway.	Present	No turbines will be sited in these exclusion areas.	No change	No change
1.1 times the turbine height from the nearest edge of railroad ROW.	Present	No turbines will be sited in these exclusion areas.	No change	No change
1.1 times the turbine height from the nearest edge of a 115-kV or higher transmission line ROW	Present	No turbines will be sited in these exclusion areas.	No change	No change

Exclusion Area	2022 CSC Application / PSC Order		Current Project	
	Present Within Project Area?	Description	Present Within Project Area?	Description
1.1 times the turbine height from the property line of a non-participating landowner and three times the height of the turbine from an inhabited rural residence of a non-participating landowner unless a variance is granted. A variance may be granted if an authorized representative or agent of the permittee, the non-participating landowner, and affected parties with associated wind rights file a written agreement expressing all parties' support for a variance to reduce the setback requirement in this subsection. A non-participating landowner is a landowner that has not signed a wind option or an easement agreement with the permittee of the wind energy conversion facility as defined in NDCC Chapter 17-04.	Present	No turbines will be sited in these exclusion areas.	No change	No change

[1]For the purposes of setbacks, Badger Wind assumed a turbine of up to 89 m in hub height, with an up to 127.2 m rotor diameter, and/or total tip height of 152.1 m.

3.2. Compliance with Avoidance Areas

Per NDAC Sections 69-06-08-01(3) and (4), the geographical areas listed in **Table 3-2: Summary of Avoidance Areas** below may not be approved as a site for an energy conversion facility or a wind energy conversion facility unless the applicant shows that under the circumstances there is no reasonable alternative or (in the case of the sound limit) a waiver has been obtained. **Table 3-2: Summary of Avoidance Areas** summarizes these avoidance areas and their presence or absence in the Project Area, notes the information discussed in the 2022 CSC Application filings and the PSC Order for each criterion, and provides any updates to the information for the current Project.

As indicated in **Table 3-2: Summary of Avoidance Areas**, the current Project meets the PSC's avoidance area criteria. The Project avoids permanent impacts to wetlands with the exception of one access road to a potential MET tower location that crosses one field-mapped wetland resulting in a permanent impact of 0.007 acres; however, if the wetland is confirmed during field delineations, Badger Wind will avoid impacting this wetland unless no reasonable alternative exists. Additionally, nine occupied residences are modelled with sound levels above 45 A-weighted decibels (dBA); Badger Wind has obtained waivers from the owners of seven of these occupied residences and is in the process of securing waivers from the owner of the remaining two occupied residences. If the owner of the affected residences does not sign a waiver, Badger Wind will either use noise reduction technology to comply with the sound level requirement or will not construct the turbine(s) causing the exceedance(s). Avoidance areas within the current Study Area and Project Area are depicted on **Figure 5: Avoidance Areas**.

Table 3-2: Summary of Avoidance Areas

Avoidance Area	2022 CSC Application Filings / PSC Order		Current Project	
	Present Within Project Area?	Description	Present Within Project Area?	Description
General Avoidance Areas				
Historical resources which are not designated as exclusion areas.	Present	Identified eligible cultural and architectural resources will be avoided.	Present	Additional cultural and architectural resource surveys were conducted in areas not previously surveyed. The Project will avoid identified eligible cultural and architectural resources.
Areas within the city limits of a city or the boundaries of a military installation.	None	No project infrastructure will be sited within city limits or the boundaries of a military installation.	No change	No change

Avoidance Area	2022 CSC Application Filings / PSC Order		Current Project	
	Present Within Project Area?	Description	Present Within Project Area?	Description
Areas within known floodplains as defined by the geographical boundaries of the 100-year flood.	No mapped floodplain data	N/A	No change	No change
Areas that are geologically unstable.	None	N/A	No change	No change

Woodlands and wetlands.	Present	Wetlands and small woodlands and shelterbelts are present within the Project Area. The Project avoids permanent impacts to delineated wetlands with the exception of one access road that will cross a field-delineated drainage wetland that parallels an existing road, resulting in a permanent impact to this wetland of less than 0.01 acre. A culvert will be installed where the road crosses the drainage to facilitate continued wetland function and local hydrology. This impact will be self-certified under the U.S. Army Corps of Engineers (USACE) Clean Water Act (CWA) Nationwide Permit program. Badger Wind demonstrated that there is no reasonable alternative to impacting this wetland. Order Finding No. 38.	Present	Wetlands and small woodlands and shelterbelts are present within the Project Area. Additional wetland field surveys and a woodland desktop study were conducted for areas not previously surveyed. The Project avoids permanent impacts to wetlands with the exception of one access road to MET Tower 1 that crosses one field-mapped wetland resulting in a permanent impact of 0.007 acres. If the wetland is confirmed during field delineations, Badger Wind will avoid impacting this wetland unless no reasonable alternative exists. At the time the CSC was issued, one access road crossed a field-delineated drainage wetland, resulting in a permanent impact to the wetland of less than 0.01 acre. This access road has now been removed and this wetland will no longer be permanently impacted.
		Impacts to woodlands will be avoided to the extent practicable. As currently designed, the Project may impact approximately 0.03		Impacts to woodlands will be avoided to the extent practicable. As currently designed, the Project may permanently impact approximately 0.4 acres of

Avoidance Area	2022 CSC Application Filings / PSC Order		Current Project	
	Present Within Project Area?	Description	Present Within Project Area?	Description
		acres of trees/shrubs. Where unavoidable, impacts have been minimized to the extent feasible. If impacts to trees and/or shrubs occur, Badger Wind will adhere to the Commission's tree and shrub mitigation specifications. The PSC authorized Badger Wind to clear trees and shrubs in the Project Area up to 100 ft in limited areas only where it is necessary to collocate collection lines, access roads, and/or crane walks. Order Para. No. 8.		woodland areas. Where unavoidable, impacts have been minimized to the extent feasible. If impacts to trees and/or shrubs occur, Badger Wind will adhere to the Commission's tree and shrub mitigation specifications. Badger Wind requests PSC approval to clear trees and shrubs in the current Project Area up to 100 ft in limited areas where it is necessary to collocate collection lines, access roads, and/or crane walks.
Areas of recreational significance that are not designated as exclusion areas.	None	N/A	No change	No change

Avoidance Area	2022 CSC Application Filings / PSC Order		Current Project	
	Present Within Project Area?	Description	Present Within Project Area?	Description
Additional Avoidance Areas for Wind Energy Conversion Facilities				
A geographic area where, due to the operation of the facility, the sound levels within 100 ft of an inhabited residence or community building will exceed 45 A-weighted decibels (dBA). The sound level avoidance area criteria may be waived in writing by the owner of the occupied residence or the community building.	Present	A noise study was completed for the Project using GE 3.4-MW turbines at all 79 potential turbine locations (Hearing Exhibit No. 8). With the exception of seven receptors, modeled sound levels comply with the sound level requirement. Badger Wind secured waivers from the owners of the seven receptors (residences). See Hearing Exhibit Nos. 1 (Appendix J), 6, 8, and 30; see also Order Finding No. 49.	Present	A noise study (**Appendix E: Updated Sound Analysis Report**) was completed for the current Project using GE 2.82-MW turbines at all[1] potential turbine locations, of which up to 93 will be constructed. With the exception of nine receptors, modeled sound levels comply with the sound level requirement. For the nine receptors with exceedances, Badger Wind has obtained written waivers for seven receptors and is in the process of securing waivers for the remaining two receptors. See **Appendix J: Badger Wind Sound Waivers**. If the owner of an affected residence does not sign a waiver, Badger Wind will either use noise reduction technology to comply with the sound limitation or will not construct the turbine(s) causing the exceedance(s).

[1] Badger Wind proposes 103 total turbine positions and will build up to 93 total. There is one pair of turbine positions (73 and 73B) that are designed to be mutually exclusive such that only one of these two positions can be constructed due to their proximity and mutual waking. Therefore, the sound analysis only modeled turbine 73 because it has higher sound power levels at the receptors and therefore represents the most conservative and realistic sound modeling scenario.

3.3. Compliance with Selection Criteria

In accordance with NDAC Section 69-06-08-01(5), a "site may be approved in an area only when it is demonstrated to the commission by the applicant that any significant adverse effects resulting from the location, construction, and operation of the facility in that area, as they relate to the following, will be at an acceptable minimum, or that those effects will be managed and maintained at an acceptable minimum." **Table 3-3: Summary of Selection Criteria** summarizes the PSC's selection criteria, notes the information discussed in the 2022 CSC Application filings and PSC Order for each criterion, and provides any updates to the information for the updated Project.

As set forth in **Table 3-3: Summary of Selection Criteria** below, any significant adverse effects resulting from the location, construction, and operation of the Project as they relate to the selection criteria continue to be at an acceptable minimum or be managed and maintained at an acceptable minimum (see PSC Order Finding No. 43).

Table 3-3: Summary of Selection Criteria

Selection Criteria	Potential Adverse Effects from Project	
	2022 CSC Application Filings / Order	Current Project
The Impact Upon Agriculture:		
(1) Agricultural production	Approximately 14,375 acres (about 45.6 percent) of the Project Area is identified as cultivated croplands or pasture/hay lands (refer to Table 6-2, 2022 CSC Application). The Project will result in permanent impacts to less than one percent of the total land cover within the Project Area.	Approximately 16,238 acres (about 46.0 percent) of the current Project Area is identified as cultivated croplands or pasture/hay lands (refer to **Table 6-2: Land Cover Types and their Relative Abundance in the Project Area**). The Project will result in permanent impacts to less than one percent (0.4 percent) of the total land cover within the current Project Area.

Selection Criteria	Potential Adverse Effects from Project	
	2022 CSC Application Filings / Order	Current Project
(2) Family farms and ranches	While some areas of agricultural production will be converted to a renewable energy generation resource during the life of the Project, the Project will provide additional income to these landowners in the form of lease income. Any economic losses are anticipated to be minor in comparison. Additionally, the Project has been designed to minimize impacts to family farms and ranches to the extent possible, and turbines have been set back from occupied dwellings in accordance with Commission requirements.	No change
(3) Land which the owner demonstrates has soil topography, drainage, and an available water supply that cause the land to be economically suitable for irrigation	Landowners have not expressed concerns relating to irrigation of their lands. No known irrigation system is present within the Project Area.	No change
(4) Surface drainage patterns and ground water flow patterns	The Project is not anticipated to result in adverse impacts to surface drainage or groundwater flow patterns.	No change
(5) The agricultural quality of cropland	Landowners will be compensated for project facilities sited on their properties and shall be reimbursed for lost revenues due to temporary construction impacts to crops. No adverse impacts to the agricultural quality of croplands are anticipated.	No change

Selection Criteria	Potential Adverse Effects from Project	
	2022 CSC Application Filings / Order	Current Project
The Impact Upon the Availability and Adequacy of the Following Categories:		
(1) Law enforcement	No adverse impacts anticipated.	No change
(2) School systems and education programs	No adverse impacts anticipated.	No change
(3) Governmental services and facilities	No adverse impacts anticipated.	No change
(4) General and mental health care facilities	No adverse impacts anticipated.	No change
(5) Recreational programs and facilities	No adverse impacts anticipated.	No change
(6) Transportation facilities and networks	A temporary increase in vehicular traffic will occur within the Project Area during construction. Badger Wind will coordinate with local road authorities regarding haul routes. During operations, road use will generally be similar to other area traffic.	No change
(7) Retail service facilities	No adverse impacts anticipated.	No change
(8) Utility services	No adverse impacts to utility services are expected. Badger Wind will coordinate with KEM Electric Cooperative, Inc., and MDU for electricity for the operations and maintenance (O&M) facility and the South-Central Regional Water District for rural water or will drill a well.	No change
The Impact Upon:		
(1) Local institutions	No adverse impacts anticipated.	No change

Selection Criteria	Potential Adverse Effects from Project	
	2022 CSC Application Filings / Order	Current Project
(2) Noise-sensitive land uses	Noise-sensitive land uses within the Project Area include residences in proximity to turbine sites. However, Badger Wind has sited turbines to comply with applicable setbacks, and the Project will comply with the Commission's sound level requirement. With the exception of seven receptors, modeled sound levels comply with the sound level requirement. For the seven receptors with exceedances, Badger Wind has obtained written waivers. See Hearing Exhibit Nos. 1 (Appendix J), 6, 8, and 30; see also Order Finding No. 49.	Noise-sensitive land uses within the Project Area include residences in proximity to turbine sites. However, Badger Wind has sited turbines to comply with applicable setbacks, and the Project will comply with the Commission's sound level requirement. With the exception of nine receptors, modeled sound levels comply with the sound level requirement. For the nine receptors with exceedances, Badger Wind has obtained written waivers for seven receptors and is in the process of securing waivers for the remaining two receptors. See **Appendix J: Badger Wind Sound Waivers**. If the owner of an affected residence does not sign a waiver, Badger Wind will either use noise reduction technology to comply with the sound limitation or will not construct the turbine(s) causing the exceedance(s).

Selection Criteria	Potential Adverse Effects from Project	
	2022 CSC Application Filings / Order	Current Project
(3) Light-sensitive land uses	Turbine and MET tower lighting will be in accordance with Federal Aviation Administration (FAA) minimum standards, and, subject to FAA approval, Badger Wind will use commercially reasonable efforts to install a light-mitigating technology that is consistent with applicable requirements. Lighting of ancillary structures will be downward shielded.	No change
(3) Rural residences and businesses	No adverse impacts anticipated. Badger Wind has sited turbines to comply with applicable setbacks, and the Project will comply with the Commission's sound level requirement. With the exception of seven receptors, modeled sound levels comply with the sound level requirement. For the seven receptors with exceedances, Badger Wind has obtained written waivers. See Hearing Exhibit Nos. 1 (Appendix J), 6, 8, and 30; see also Order Finding No. 49.	No adverse impacts anticipated. Badger Wind has sited turbines to comply with applicable setbacks, and the Project will comply with the Commission's sound level requirement. With the exception of nine receptors, modeled sound levels comply with the sound level requirement. For the nine receptors with exceedances, Badger Wind has obtained written waivers for seven receptors and is in the process of securing waivers for the remaining two receptors. See **Appendix J: Badger Wind Sound Waivers**. If the owner of an affected residence does not sign a waiver, Badger Wind will either use noise reduction technology to comply with the sound limitation or will not construct the turbine(s) causing the exceedance(s).

Selection Criteria	Potential Adverse Effects from Project	
	2022 CSC Application Filings / Order	Current Project
(4) Aquifers	No adverse impacts anticipated. The Wishek and Lower Wishek aquifers are at depths greater than proposed construction activities.	No change
(5) Human health and safety	No adverse impacts anticipated.	No change
(6) Animal health and safety	No adverse impacts to domestic animal health and safety are anticipated, and measures will be implemented to ensure construction impacts to livestock are avoided. Coordination is ongoing with North Dakota Game and Fish (NDGF) and U.S. Fish and Wildlife Service (USFWS) regarding minimization of impacts to wildlife.	No change
(7) Plant life	Temporary and permanent impacts to vegetation will occur as a result of project development. Following construction, temporarily disturbed non-agricultural lands will be revegetated using a seed mix approved by the Natural Resources Conservation Service (NRCS) in accordance with the project reclamation plan. Agricultural lands will be reclaimed to landowner specifications, to the extent practical. In addition, a noxious weed management plan will be implemented. See Hearing Exhibit No. 1 (Appendix I).	No change

Selection Criteria	Potential Adverse Effects from Project	
	2022 CSC Application Filings / Order	Current Project
(8) Temporary and permanent housing	No adverse impacts anticipated. Temporary lodging needs will be filled in the form of rental housing or the use of hotels, which could provide short-term economic benefits.	No change
(9) Temporary and permanent skilled and unskilled labor	Badger Wind will encourage its Balance-of-Plant (BOP) contractor to source materials and the construction labor force from within ND and/or areas near the Project, as commercially reasonable. Badger Wind anticipates its BOP contractor to develop a sourcing and workforce plan that seeks to achieve this goal within the parameters of the Project's requirements for safety, quality, schedule, and budget.	No change
Cumulative Impact:		
The cumulative effects of the location of the facility in relation to existing and planned facilities and other industrial development	Development of the Project will not conflict with existing development plans of state, local, or private businesses. Cumulative impacts from the Project will be minimized by siting project infrastructure within areas of existing development to the extent practicable, including utilizing existing public and farm access roads as possible. The ND Wind (I and II) facilities are located approximately 27 miles east of the Project Area.	No change

3.4. Compliance with Policy Criteria

In accordance with NDAC Section 69-06-08-01(6), "[t]he commission may give preference to an applicant that will maximize benefits that result from the adoption of the following policies and practices, and in a proper case may require the adoption of such policies and practices. The commission may also give preference to an applicant that will maximize interstate benefits." **Table 3-4: Summary of Policy Criteria** summarizes the policy criteria, notes the information discussed in the 2022 CSC Application filings for each criterion, and provides any updates to the information for the updated Project.

As set forth in **Table 3-4: Summary of Policy Criteria** below, Badger Wind continues to demonstrate its commitment to maximize the benefits of the Project as far as possible to meet the PSC's policy criteria.

Table 3-4: Summary of Policy Criteria

Policy Criteria	Applicant's Policies and Practices	
	2022 CSC Application Filings	Current Project
Recycling of the conversion byproducts and effluents	N/A	No change
Energy conversion through location, process, and design	The Project has been sited and designed to maximize energy conversion efficiency.	No change
Training and utilization of available labor in this state for the general and specialized skills required	The Project will use skilled and trained laborers from ND to the extent feasible, within the parameters of the Project's safety, quality, budget, and schedule requirements.	No change
Use of a primary energy source or raw material located within the state	Energy generated by the Project will come from the wind resource within ND. In addition, the Project, to the extent commercially reasonable, will utilize local sources for construction materials such as gravel for roads and turbine pads and aggregate for concrete.	No change
Not relocating residents	The Project will not result in the relocation of residents.	No change

Policy Criteria	Applicant's Policies and Practices	
	2022 CSC Application Filings	Current Project
The dedication of an area adjacent to the facility to land uses such as recreation, agriculture, or wildlife management	The Project will not interfere with adjacent land uses. As such, Badger Wind does not currently anticipate dedicating any adjacent areas for land uses such as recreation, agriculture, or wildlife management.	No change
Economies of construction and operation	With a nameplate capacity of 251.6 MW, Badger Wind will benefit from the economies of scale associated with project construction and operation. Because wind energy projects typically incur one-time costs that do not differ substantially with the scale of the project, larger-scale projects benefit from economies-of-scale advantages as they provide greater output with similar fixed costs. Examples of such fixed costs include procurement and construction of the project substation, crane mobilization, and on-site office space.	The current nameplate capacity is 262.26 MW, but the prior analysis remains otherwise applicable.
Secondary uses of appropriate or associated facilities for recreation and the enhancement of wildlife	None. The Project is compatible with existing wildlife and recreational uses.	No change
Use of citizen coordinating committees	Badger Wind has coordinated and will continue to coordinate with landowners, local businesses, and organizations in the vicinity of the Project Area.	No change

Policy Criteria	Applicant's Policies and Practices	
	2022 CSC Application Filings	Current Project
A commitment of a portion of the energy produced for use in this state	Energy generated by the Project will interconnect to the power grid at the Wishek Junction substation. The energy provided by the Project will be positioned to meet the local, regional, or national demand for renewable energy, and/or corporate or government renewable energy goals.	No change
Labor relations.	No adverse impacts are anticipated.	No change
The coordination of facilities	The Project has been sited with the consideration of existing facilities and facility corridors.	No change
Monitoring of impacts	Badger Wind will monitor construction activities and use appropriate best management practices (BMPs) during project construction. During project operation and reclamation activities, Badger Wind will monitor the Project to assess impacts and to achieve compliance with all requirements set forth in the Certificate. The Project's Bird and Bat Conservation Strategy (BBCS) (Hearing Exhibit No. 1 (Appendix H)) and Reclamation and Weed Management Plan (Hearing Exhibit No. 1 (Appendix I)) outline wildlife and revegetation monitoring measures, respectively.	No change
A commitment to install lighting mitigation technology for wind energy conversion facilities subject to commercial availability and FAA approval	The Project will utilize a light-mitigating technology system that is consistent with applicable requirements, subject to FAA approval.	No change

3.5. Compliance with Setbacks

The Project has been sited to comply with the setback requirements of the PSC, as well as Logan County. Where setback requirements differ, the Project will adhere to the more stringent requirement. McIntosh County has not enacted zoning and, therefore, does not have setback requirements for wind energy projects; therefore, only the PSC setback requirements have been used for the Project in McIntosh County. Applicable setback requirements, as well as the Project's voluntary setback commitments, are identified in **Table 3-5: North Dakota Public Service Commission and County Setback Requirements**. Setbacks are measured from the closest edge of the turbine tower base to the closest edge of the referenced feature. All Project setbacks are depicted in **Figure 6: Project Setbacks**.

Table 3-5: North Dakota Public Service Commission and County Setback Requirements

Entity	Turbine Setback[1]
PSC	
The geographic center of an ICBM launch facility or launch control facility	Areas within 1,200 ft of the geographic center
Direct line between an ICBM launch facility and a missile alert or launch control facilities to avoid microwave interference	Areas within 30 ft (9.14 m) on either side of a direct line between an ICBM launch facility and a missile alert or launch control facility
Nearest edge of an interstate highway or state roadway ROW	1.1 times turbine height
County or maintained township roadway	1.1 times the height of the turbine plus 75 ft from the centerline of the roadway
Nearest edge of a railroad ROW	1.1 times the height of the turbine
Nearest edge of a 115-kV or higher-voltage transmission line ROW	1.1 times the height of the turbine
Property line of a non-participating landowner	1.1 times the height of the turbine[2]
Inhabited rural residence of a non-participating landowner	3 times the height of the turbine[2]
Inhabited residence or community building	A wind energy conversion site must not include a geographic area where, due to the operation of the facility, the sound levels within 100 ft of an inhabited residence or a community building will exceed 45 dBA[3]
Logan County	
Turbine setback from the center of the existing ROW of the nearest public road	200 ft

Entity	Turbine Setback[1]
Turbine setback from the center of the existing ROW of the nearest aboveground communication and electrical lines	200 ft
Wind Energy Facility Perimeter	2.5 times the rotor diameter of the turbine[4]
Turbine setback from the nearest occupied dwelling, commercial building, or publicly used structure or facility	1.25 times the turbine total height or 750 ft, whichever is greater
Building and structure setback from county and state highway ROW	200 ft from county and state highway ROW
Building and structure setback from county road ROW	200 ft from the county road ROW
Tree plantings and shelterbelts planting setback from center of all roads (north, south, west, and east)	200 ft from center of all roads (north, south, west, and east), unless the guidelines set forth by the U.S. Department of Agriculture (USDA)-NRCS offices allow for a lesser setback
Non-farm structure setback from any public road ROW and 50 ft from any lot line of any lot of record	200 ft
Non-farm structure setback from any lot line of any lot of record	50 ft

[1] Setbacks are based on a turbine up to 89 m in hub height with an up to 127.2 m rotor diameter and/or a total tip height of 152.1 m. Required setback distances were converted and rounded to the next meter to ensure compliance.
[2] As set forth in NDCC Section 49-22-05.1(4) and NDAC Section 69-06-08-01(2)(a)(5), a variance from this setback requirement may be granted if an authorized representative or agent of the permittee, the nonparticipating landowner, and affected parties with associated wind rights file a written agreement expressing the support of all parties for a variance to reduce the setback requirement. A nonparticipating landowner is a landowner that has not signed a wind option or an easement agreement with the permittee of the wind energy conversion facility as defined in chapter 17-04.
[3] The sound level avoidance area criteria may be waived in writing by the owner of the occupied residence or community building, as provided in NDAC Section 69-06-08-01(4). Badger Wind has obtained or is in the process of obtaining waivers where modeled sound levels exceed the PSC's sound level requirement.
[4] Logan County Zoning Regulations Section 6.11.4.2(3) provides that a variance may be granted if an authorized representative or agent of the permittee and those affected parties on adjoining properties with associated wind rights sign a formal and legally binding agreement expressing all parties' support for a variance that waives or reduces the setback requirement.

Appendix K: Updated Receptor Table includes a table identifying occupied residences and community buildings in or near the Project Area, the receptor type and status (participating or non-participating), the closest turbine or transformer, distance to the closest turbine or transformer, modeled shadow flicker in hours per year, the modeled sound level, and whether a sound waiver is required/obtained.

4. DESCRIPTION OF PROPOSED FACILITY

4.1. Project Components

With the exception of the updated information provided in the following sections, the discussion of Project components, including turbines, associated facilities, and temporary facilities has not changed from what was presented in the 2022 CSC Application. Please refer to Section 4.1 of the 2022 CSC Application for a discussion of the Project components. The current Project layout and estimated Project facility impacts are also described below. **Figure 2: Project Facilities** shows the locations of the proposed Project infrastructure.

4.1.1. Turbine Model

A final wind turbine model has not been selected at this time, and Badger Wind plans to select the most appropriate technology in terms of cost effectiveness and optimization of land and wind resources. In Badger Wind's 2022 CSC Application, the Project layout and sound and shadow flicker analyses utilized a General Electric (GE) 3.4 MW turbine with a hub height of 98 m (approximately 322.5 ft), a rotor diameter of 140 m (approximately 459.3 ft), and a total tip height of 168 m (approximately 551.2 ft). As discussed above, Badger Wind has determined that a smaller turbine is the best fit for the current Project. The current Project layout and sound and shadow flicker analyses utilize a GE turbine with an output of 2.82 MW, which aligns with the updated Project characteristics. Regardless of the model selected, Badger Wind has sited the Project so that all proposed turbine locations meet all applicable siting requirements, including setbacks required by the PSC and Logan County, for a turbine with an up to 89 m (approximately 291 ft) hub height, an up to 127.2-m (approximately 416.7-ft) rotor diameter, and a total tip height of 152.1 m (approximately 498.9 ft), thus providing flexibility in the selection of the turbine model.

Table 4-1: Wind Turbine Characteristics describes the characteristics of the GE 2.82-MW turbine; however, the Project may opt to use a turbine or combinations of turbines not included in the table. If the Project uses a model other than the GE 2.82-MW turbine, Badger Wind will provide the updated turbine specifications, sound modeling, and shadow flicker modeling to the PSC to demonstrate compliance with applicable requirements.

Table 4-1: Wind Turbine Characteristics

Characteristic	GE 2.82 MW (current model under consideration)
Nameplate capacity	2,820 kilowatts (kW)
Hub height[1]	89 m (291 ft)
Rotor diameter	127.2 m (416.7 ft)
Total height[2]	152.1 m (498.9 ft)
Cut-in wind speed[3]	3 meters per second (m/s)

Characteristic	GE 2.82 MW (current model under consideration)
Rated capacity wind speed[4]	12 m/s
Cut-out wind speed (sustained)[5]	30 m/s
Cut-out wind speed (gust)	39 m/s
Rotor swept area	12,704 m^2

[1] Hub height = the turbine height from the ground to the top of the nacelle
[2] Total height = the total turbine height from the ground to the tip of the blade in an upright position
[3] Cut-in wind speed = wind speed at which the turbine begins operation
[4] Rated capacity wind speed = wind speed at which the turbine reaches its rated capacity
[5] Cut-out wind speed = wind speed at which the turbine shuts down operation

4.1.2. Project Layout

As noted above, the current Project layout is shown utilizing a GE turbine with an output of 2.82 MW. As a result of the additional land added to the Project Area since 2022 and the smaller 2.82-MW turbine, Badger Wind is now proposing 103 potential turbine locations, of which up to 93 turbines will be constructed. Of the original 79 turbine locations approved by the PSC in 2022 (see Hearing Exhibit No. 2), eight of the original 79 locations have been removed from the layout, and nine of the remaining original turbine locations have been adjusted to accommodate the new, smaller turbine dimensions. The final number of turbines constructed will be dependent on final engineering analysis and Project design. All 103 potential turbine locations are shown on **Figure 2: Project Facilities**.

Permanent Project facilities are shown on **Figure 2: Project Facilities** and will include:

- 103 wind turbine locations, of which, up to 93 wind turbines will be constructed;
- buried electrical collection lines and communication lines, with aboveground junction boxes and/or underground splices;
- new gravel access roads and improvements to existing roads, as necessary;
- a collector substation;
- five proposed permanent MET tower positions, of which up to three will be constructed;
- an ADLS and related equipment; and
- an O&M facility located in McIntosh County.

The Project will also include temporary facilities, including: a temporary batch plant, a laydown yard for construction offices, a multi-purpose laydown area to support the Project's construction activities, a marshalling yard to assist with logistics during turbine component deliveries, temporary crane paths, and temporary road improvements, as needed.

The Project will interconnect via an approximately 0.25-mile transmission line extending from the Project substation to the Wishek Junction 230-kV substation owned and operated by MDU.

As a result of final micro-siting and the utility coordination needed to facilitate Project interconnection, adjustments to the Project design may be necessary. The Project's current layout does, and the final layout will comply with the PSC's siting criteria and Logan County's setback and design requirements. See **Section 8: Compliance with ndcc section 49-22-09 factors** below for additional information on the Project's compliance with applicable setback requirements.

4.1.3. Estimated Project Impacts

As stated above, the current Project layout includes 103 potential turbine locations. Turbines and other Project infrastructure have been sited to meet applicable PSC and Logan County setbacks, minimize environmental, cultural resource, and economic impacts, and optimize use of the wind resource. Of these locations, up to 93 turbines will be constructed. Although only up to 93 turbines will be constructed, all 103 potential turbine locations and associated infrastructure (e.g., collection lines, access roads, etc.) have been included for calculations of potential impacts. Overall, the current Project will permanently impact only approximately 127.8 acres of land, an increase of only approximately 0.1 percent of the site compared to the layout/site approved by the PSC in 2022 (see Hearing Exhibit No. 5 and Order Finding No. 42). The current layout includes 10 alternate turbine locations (each with an associated access road, collection line, and crane path). By comparison, Badger Wind was considering constructing all 79 turbines and associated infrastructure previously approved by the PSC.

The maximum estimated temporary and permanent impacts for the current Project design are shown in **Table 4-2: Summary of Temporary and Permanent Footprints from Project Facilities (acres)**Table 4-2. Although only up to three permanent MET towers will be constructed, all five potential MET tower locations have been included for calculations of potential impacts. Furthermore, conservative temporary construction disturbance areas are assumed for these analyses. Thus, the actual area that will be disturbed is expected to be smaller than those reported herein.

Table 4-2: Summary of Temporary and Permanent Footprints from Project Facilities (acres)

Project Facility	Current Layout[1]		
	Description of Footprint	Temporary Impacts (acres)	Permanent Impacts (acres)
Turbines	103 turbine locations (includes 10 alternates), 50-ft radius turbine pad, 250-ft radius temporary construction workspace	359.7	18.5

Project Facility	Current Layout[1]		
	Description of Footprint	Temporary Impacts (acres)	Permanent Impacts (acres)
Access Roads	16-ft-wide road, 100-ft-wide temporary construction workspace	263.3	105.5
Crane Paths	100-ft-wide temporary disturbance area	358.2	0.0
Electrical Collection and Communication Lines	75-ft-wide corridor for collection lines	632.2	0.0
ADLS	0.5-acre ADLS tower site	0.4	0.1
MET Towers	Five possible locations are included, but only three permanent MET towers will be constructed; each MET tower location has a 50-sq ft permanent disturbance area and an associated 0.5-acre temporary disturbance area.	0.8	0.01
Project Facilities	Includes laydown/staging/marshalling areas, O&M facility, batch plant, substation footprints	36.8	3.8
Total		**1,651.4**	**127.8**

[1] Because the Project has collocated facilities, double counting of potential impacts has been accounted for by first calculating permanent impacts, then calculating temporary impacts from electrical collection and communication lines (ground disturbance), then turbine workspace, crane paths, access roads, facility footprints and MET towers.

5. PROJECT CONSTRUCTION, OPERATION, AND DECOMMISSIONING

The discussion of the Project construction, operation, and decommissioning presented in the 2022 CSC Application has not changed for the current Project. Please refer to Section 5 of the 2022 CSC Application.

6. UPDATED ENVIRONMENTAL ANALYSIS

A detailed environmental analysis was conducted for the Project as part of the 2022 CSC Application filings. For several resources, the original analysis presented in the 2022 CSC Application and subsequent filings has not substantially changed for the current Project (as described in **Section 1: Introduction** of this Application). For other resources, Badger Wind conducted additional studies and analyses to confirm that the Project site continues to comply with applicable requirements and avoid and/or minimize potential impacts.

A summary of potential impacts and avoidance/minimization measures for the resources are discussed in **Section 6.17: Summary of Impacts and Avoidance/Minimization Measures**.

Updated information, including the results of any additional studies and analyses, as well as discussions of agency consultation and mitigation, as applicable, are provided in the following sections. Copies of study reports referenced are included in **Appendices C: Updated Telecommunications Studies** and **E: Updated Sound Analysis Report** through **O: Updated Grassland Habitat Assessment**.

6.1. Demographics

The demographics of Logan and McIntosh Counties have not changed since the 2022 CSC Application. See Section 6.1 of the 2022 CSC Application.

In addition to the creation of jobs and personal income (see Section 6.1 of 2022 CSC Application), the Project will pay an Electric Generation Tax of USD 2.50 per kilowatt times the rated capacity of the turbine, as well as one-half of one mill per kilowatt-hour of generated electricity (NDCC Section 57-33.2-04). Thus, Badger Wind anticipates paying the production taxes presented in **Table 6-1: Tax Revenue Generated by the Project** annually and over the life of the Project, based on current State tax law and rates**.**

Table 6-1: Tax Revenue Generated by the Project

Taxing Authority/Recipient	Approximate Amount (average per year)	Approximate Amount (over 30-year life of Project)
State of North Dakota	$421,725	$12,651,739
McIntosh County	$226,316	$6,789,070
Logan County	$259,996	$7,799,886
Wishek #19 School District	$317,450	$9,523,372
Napolean #2 School District	$8,428	$252,838
Wishek Rural Fire District	$19,710	$591,293
Napolean Fire District	$658	$19,753
Wishek Rural Ambulance	$9,278	$278,347
Napolean Ambulance	$2,272	$68,161

Long-term beneficial impacts to the tax bases of Logan and McIntosh Counties, as a result of the construction and operation of the Project, will have an additional positive impact on the local economy in this area of North Dakota.

6.2. Land Cover, Land Use, and Zoning

6.2.1. Land Cover

The current Study Area is in a rural and predominately agricultural area. Badger Wind reviewed U.S. Geological Survey (USGS) National Land Cover Data (NLCD) to determine land cover classification types present within the current Study Area and Project Area. The results of this

review are presented in **Table 6-2: Land Cover Types and their Relative Abundance in the Project Area**Table 6-2.

Table 6-2: Land Cover Types and their Relative Abundance in the Project Area

Land Cover	2022 Project[1]				Current Project			
	Study Area		Project Area		Study Area		Project Area	
	Acres	%	Acres	%	Acres	%	Acres	%
Open Water	241.0	0.2	34.9	0.1	309.8	0.2	37.1	0.1
Developed	3,754.0	3.0	999.3	3.2	3,795.9	2.9	1,092.6	3.1
Barren Land (Sand, Rock, Clay)	13.0	0.0	0.0	0.0	13.0	0.0	0.0	0.0
Deciduous Forest	53.6	0.0	5.6	0.0	53.3	0.0	5.2	0.0
Shrub/Scrub	916.1	0.7	270.4	0.9	920.3	0.7	276.4	0.8
Grassland/Herbaceous	43,930.2	34.9	16,122.3	51.2	43,865.2	34.5	16,725.6	47.5
Pasture/Hay	3,347.0	2.7	1,296.2	4.1	3,328.0	2.6	1,291.4	3.7
Cultivated Crops	70,611.3	55.9	11,935.6	37.8	71,839.5	56.4	14,946.6	42.4
Woody Wetlands	233.5	0.2	21.0	0.1	206.8	0.2	21.0	0.1
Emergent Herbaceous Wetlands	2,854.2	2.3	828.6	2.6	2,760.2	2.2	831.1	2.4
Total	**125,954.0**	**100**	**31,514.0**	**100**	**127,092.0**	**100**	**35,227.0**	**100**

[1] See Hearing Exhibit No. 32.
Source: (USGS 2021)

Temporarily disturbed areas will be reclaimed, fertilized, and reseeded according to NRCS recommendations, unless otherwise specified by the landowner and approved by the Commission, as detailed in**Appendix I: Appendix I: Badger Wind Reclamation and Weed Management Plan**Badger Wind Reclamation and Weed Management Plan.

Table 6-3**Table 6-3: Project Summary of Land Cover Impacts** presents the anticipated impacts on land cover categories as a result of construction and operation of the current Project.

Table 6-3: Project Summary of Land Cover Impacts

Land Cover Type	Impacts	
	Current Project	
	Temporary (acres)	Permanent (acres)
Open Water	0.0	0.0
Developed	101.5	13.9
Barren Land (Sand, Rock, Clay)	0.0	0.0

Land Cover Type	Impacts	
	Current Project	
	Temporary (acres)	Permanent (acres)
Deciduous Forest	0.0	0.0
Shrub/Scrub	7.4	0.2
Grassland/Herbaceous	383.7	19.3
Pasture/Hay	45.0	2.6
Cultivated Crops	1,108.2	91.8
Woody Wetlands	0.0	0.0
Emergent Herbaceous Wetlands	5.6	0.0
Total	**1,651.4**	**127.8**
Source: (USGS 2021)		

Construction of the Project will temporarily impact approximately 1,651.4 acres of land. Approximately 67 percent of the temporary impacts will occur on land categorized as cultivated crops, and 23 percent of the impacts will occur on land categorized as grassland/herbaceous, with the remaining temporary impacts occurring on other land cover types. Impacts related to construction workspaces at turbine sites and access roads, the temporary batch plant, installation of underground collection and communication lines, and use of crane paths and laydown yards will be temporary and will terminate with the completion of construction. Temporarily disturbed areas will be reclaimed, fertilized, and reseeded according to NRCS recommendations, unless otherwise specified by the landowner and approved by the Commission, as detailed in **Appendix I: Badger Wind Reclamation and Weed Management Plan**.

Impacts from turbines, access roads, the O&M facility, permanent MET towers, the ADLS tower, and the Project substation will be long term and will convert existing land uses to a renewable energy source for the life of the Project. In total, the Project will impact approximately 127.8 acres of land during the life of the Project. Badger Wind designed the Project to minimize impacts to land use and land cover by collocating linear facilities (i.e., access roads, crane paths, and collection lines) to the extent practicable. In some cases, siting linear facilities in previously disturbed areas and minimizing siting in unbroken grasslands means the facilities will traverse longer distances.

Badger Wind does not expect that the permanent conversion of approximately 127.8 acres of land to a renewable energy source will impact broader existing land use patterns. Agricultural activities, including grazing and cultivation, may continue in the Project Area during the life of the Project. The Project also does not conflict with the existing development plans of state, local, or private entities within the Project Area because the Project generally avoids developed areas.

Lease payments will be paid to landowners for placement of project facilities to offset loss of income from permanent impacts to land used for agriculture.

6.2.2. Land Use and Ownership

Federal and state ownership interests present in the current Study Area and the Project Area are shown in **Table 6-4: Land Ownership in the Study Area and Project Area** shows the locations of public lands and easements in relation to the current Study Area and Project Area.

Table 6-4: Land Ownership in the Study Area and Project Area

Agency	Current Project	
	Acres in Study Area	Acres in Project Area
Bureau of Land Management	**0.0**	**0.0**
Grazing Allotments	0.0	0.0
U.S. Fish and Wildlife Service	**9,011.7**	**2,414.5**
Fee Owned Waterfowl Production Areas	102.4	0.0
Easements (grassland)	1,464.5	276.0
Easements (wetlands)	7,444.9	2,142.0
National Wildlife Refuges	0.0	0.0
U.S. Department of Agriculture	**0.0**	**0.0**
Conservation Reserve Program	0.0	0.0
State of North Dakota	**20,125.9**	**4,803.8**
Private Lands Open to Sportsmen	384.9	0.0
Wildlife Management Areas	0.0	0.0
North Dakota State Lands	19,751.3	4,819.0
Surface Trust Lands	684.3	14.6
Mineral Rights Trust Lands	19,067.1	4,804.4
Source: (North Dakota GIS Technical Committee, 2024)		

No Bureau of Land Management (BLM)-managed grazing allotments are present within the Project Area or Study Area. The Project will not impact these resources, and no mitigation is necessary (BLM, 2021).

Badger Wind coordinated with landowners to identify any areas of Conservation Reserve Program (CRP)-enrolled land within the land added to the Project Area since 2022. At the time of submitting this Application, no CRP parcels have been identified. Badger Wind will coordinate with state and local NRCS offices to confirm there are no CRP parcels within the current Project Area prior to construction. To date, no parcels enrolled in the CRP have been identified in the

Project Area; however, if identified in further coordination with landowners, Badger Wind will coordinate with the landowners and these agencies to determine appropriate reclamation programs for temporarily disturbed land or offset payment requirements for any land that is permanently impacted by the Project.

One U.S. Fish and Wildlife Service (USFWS) fee-owned Waterfowl Production Area (WPA) is present in the Study Area, and none are present within the Project Area. The Project will not impact these resources, and no mitigation is necessary.

No National Wildlife Refuges (NWRs) are within the Study Area or Project Area. The nearest NWR, Springwater, is located approximately 18 mi west of the Project Area.

USFWS grassland and wetland easements are present within the Study Area and Project Area. Although USFWS grassland easements protect the entirety of the parcel(s) subject to a given easement, a wetland easement only protects the wetland basin(s) present within the easement. In all, approximately 1,465 acres and 7,445 acres of grassland and wetland easements, respectively, are within the Study Area. In all, 276 acres and 2,142 acres of grassland and wetland easements, respectively, are within the Project Area. In some instances, these easements overlap; therefore, the total adjusted acreages for easements within the Study Area and Project Area are 7,525 and 2,219 acres, respectively.

As per the January 23, 2024 meeting, the USFWS will provide wetland delineations for Badger Wind to confirm Project impacts.

Crane paths are sited on USFWS grassland easements in two areas. Badger Wind has been coordinating with the USFWS Kulm office regarding these crane paths and will continue to coordinate to determine the best approaches for construction to minimize or avoid impacts to the USFWS easement areas and will obtain any required USFWS authorizations. Underground collection lines are sited on USFWS grassland easements in two areas. Badger Wind will bore under these USFWS grassland easements to avoid impacts when installing the underground collection lines; accordingly, no impacts to these easements are anticipated.

Crane paths are sited on USFWS wetland easements in four areas. In one of the areas, the Project obtained leases for these parcels prior to the USFWS obtaining the easements; accordingly, there is no regulatory requirement to avoid impacts to those easements. For the remaining three areas where crane paths are sited on USFWS wetland easements, Badger Wind will continue to coordinate with the USFWS Kulm office and will either avoid the wetland basin(s) or obtain the necessary approvals from USFWS. Underground collection lines are sited on USFWS wetland easements in four areas. In one of the areas, the Project obtained leases for these parcels prior to the USFWS obtaining the easements and therefore, there is no regulatory requirement to avoid impacts to those easements; nevertheless, Badger Wind will avoid impacts to wetlands within these parcels, as feasible. For the remaining three areas where underground collection lines sited on USFWS wetland easements, Badger Wind will either avoid the wetland basin(s) or

will bore under the wetlands to avoid impacts when installing the underground collection lines; accordingly, no impacts to these easements are anticipated.

Turbine 64 and its associated access road (the associated crane path and underground collection line are discussed above) are sited within a USFWS wetland easement which was obtained by USFWS after the Project obtained leases for these parcels. As such, there is no regulatory requirement to avoid impacts to these easements; nevertheless, Badger Wind will avoid impacts to wetlands within these parcels, as feasible. Badger Wind has been coordinating regularly and will continue to coordinate with the USFWS Kulm office to determine the best approaches for construction to minimize or avoid impacts to the USFWS easement areas and will obtain any required USFWS authorizations. Please see **Appendix D: Agency Correspondence Since CSC Issuance** for meeting minutes.

Approximately 385 acres of Private Land Open to Sportsmen (PLOTS) lands are present within the Study Area, and no PLOTS lands are in the Project Area. Three PLOTS parcels are located on the western side of the Study Area and two PLOTS parcels are located on the northwestern portion of the Study Area. The Project will not impact PLOTS lands.

No Wildlife Management Areas (WMAs) are present in the Study Area or the Project Area. The nearest WMA is located 2.2 mi to the northeast in Logan County. Because no WMAs are within the Project Area, the Project will not impact these resources.

Badger Wind reviewed publicly available information to identify North Dakota Department of Trust Lands (NDDTL) within the current Study Area and Project Area. In all, approximately 684 acres of surface trust lands and 19,067 acres of mineral rights trust lands are within the Study Area. Of these, approximately 15 acres of surface trust lands and 4,804 acres of mineral rights trust lands are within the Project Area. Badger Wind has designed the Project to avoid permanent impacts to state-managed land, including NDDTL-managed surface and mineral trust lands, to the extent practicable; nevertheless, temporary and permanent impacts totaling 222 acres and 20 acres, respectively, will occur. These impacts are associated with construction of access roads, crane paths, collection lines, communication lines, turbines, and MET towers.

Water wells and oil and gas wells are within the Study Area and Project Area. In all, 76 domestic, stock, industrial, or observational water wells are in the Study Area. Of these, 21 are located within the Project Area (ND Department of Water Resources 2024). Nine dry oil and gas wells are within the Study Area; three of these are within the Project Area. No active oil and gas wells were identified (ND DMR 2024). Impacts to water wells will be avoided. Badger Wind may potentially use existing water wells or create new water wells, as necessary. Badger Wind has voluntarily sited turbines at least 168 m (approximately 551 ft) away from inactive oil and gas wells in the Project Area; no active oil and gas wells were identified within the Project Area. Further discussion of potential impacts and mitigation strategies for inactive oil and gas wells within the Project Area are discussed in **Section 6.11: Geologic and Groundwater Resources**.

No concentrated residential developments are present within the Study Area or Project Area, though residences and farmsteads are present in both areas. In total, 94 residences or farmsteads are in the Study Area; of these, 25 are located within the Project Area. The Project will not impact these resources, and no mitigation is necessary.

6.2.3. Zoning

Logan County previously granted Badger Wind a wind energy facility siting permit / conditional use permit for the Project on May 11, 2022. Based on communications with Logan County regarding the changes to the Project, Badger Wind submitted an application for a new wind energy facility siting permit/conditional use permit for the current Project on 6 December 2023 and anticipates Logan County will issue the new permit in Q1 2024.

Badger Wind has designed the Project to comply with the applicable Logan County permitting requirements. McIntosh County does not currently have a zoning ordinance; therefore, no impacts to zoning are anticipated.

6.3. Public Services

Data identifying public services and infrastructure in the current Project Area, including transportation ROWs, known transmission lines, and telecommunication facilities, were analyzed to assess potential impacts. Specific categories of public infrastructure are discussed below. **Figure 9: Existing Infrastructure** depicts existing public infrastructure in the current Study Area.

6.3.1. Local Services

The prior analysis in Section 6.3 of the 2022 CSC Application regarding existing local services and potential impacts remains accurate for the current Project.

6.3.2. Electrical Services

Electrical service in the Project Area is provided by KEM Electric Cooperative, Inc., and MDU. Electrical infrastructure includes distribution and transmission lines. According to the publicly available U.S. Energy Mapping System, two high-voltage transmission lines (230 kV and 345 kV) transect the Project Area (EIA 2023). Additionally, small underground and overhead distribution lines are present, which serve nearby farmsteads, residential properties, and commercial areas. One existing substation was identified within one mile of the boundary of the Project Area.

The Project will help meet regional demand for electricity, and as a result the Project is anticipated to have a positive effect on the electrical services in the region. Badger Wind will utilize ND One Call prior to construction to identify existing utilities and will coordinate with facility owners to minimize potential impacts to existing infrastructure. Badger Wind anticipates that electrical services for routine operations will be provided by a local utility.

6.3.3. Roads

The prior analysis in Section 6.3 of the 2022 CSC Application regarding existing road infrastructure and potential impacts remains accurate for the current Project.

Badger Wind's road use is expected to have a minimal effect on existing road infrastructure and will comply with all applicable federal, state, and local requirements. Badger Wind will coordinate with applicable local and state road authorities so that all applicable permits are obtained, delivery plans are communicated, and traffic management plans are implemented where necessary. Badger Wind has entered into road use and maintenance agreements with Logan County and McIntosh County. Badger Wind will update these road use and maintenance agreements with the applicable road authorities, if needed. Badger Wind will also negotiate agreements with affected townships, if needed.

6.3.4. Railroads

The prior analysis in Section 6.3 of the 2022 CSC Application regarding existing railroads and potential impacts remains accurate for the current Project. Badger Wind will coordinate with Canadian Pacific Railroad for a crossing agreement for each crossing of the Soo Line Railroad. Direct impacts to the Soo Line Railroad are not anticipated; therefore, mitigation measures for impacts to railroads are not required.

6.3.5. Water Supply

Rural water is supplied to the Project Area by the South Central Regional Water District. Rural residences in the area also commonly utilize private wells for household and agricultural purposes. According to data from the North Dakota State Water Commission, 76 domestic, stock, industrial, or observational water wells are in the Study Area; of these, 21 are located within the Project Area (ND Department of Water Resources 2024).

Impacts to water wells will be avoided. Water will be used during construction to provide dust control and as a component of concrete mixes. One temporary batch plant will be constructed in the Project Area to supply concrete for construction of the Project. The batch plant may be able to use rural water service but is more likely to require well water. The O&M facility will likely require a new private water well. Water usage during the operating period will be similar to household volume: less than five gallons per minute. Badger Wind will coordinate with the South Central Water Authority Water District with respect to use of a potable water supply, as necessary. All required permits will be obtained for installation of a water well for the O&M facility. Use of water for operations will be negligible, and the Project will not require water appropriations beyond those provided at the O&M facility. Project facilities have been sited to avoid water wells. The water supply for local nearby communities is not anticipated to be affected by the Project. Therefore, mitigation measures for impacts to the water supply are not required.

6.3.6. Telephone, Microwave, Radio, and Television Communications

Badger Wind updated its telecommunications and microwave beam path studies and confirmed the Project will not impact those resources. The assessment results are discussed further below.

An updated Telecommunications Study was conducted to identify communication towers and antennas licensed by the Federal Communications Commission (FCC) in the vicinity of the Project (**Appendix C: Updated Telecommunications Studies**). One FCC-licensed antenna affixed to the roof of a structure was identified in the vicinity of the Project, but not within the Project Area. No communication tower structures are in the Project Area. No television (TV) broadcasting stations were identified within 5 kilometers (km) of any of the Project turbines. The closest TV broadcasting station is 29.6 mi to the closest Project turbine. No amplitude modulation/frequency modulation (AM/FM) radio towers are in the Project Area. The closest AM tower is located over 50 mi from the nearest Project turbine. The closest FM tower is located 40 mi from the nearest Project turbine. The nearest TV tower is located 30 mi from the nearest Project turbine. No microwave towers are in the Project Area.

The updated Communications Study conducted for the Project indicates that interference with communication towers is not likely to occur due to the proposed placement of the turbines. The risk of interference (obstruction or reflection) with broadcasting systems, such as TV, AM and FM, is low. Although several TV and AM towers have broadcast service contours of varying intensity that overlap the Project Area, the low population density near the turbines and the large distances from the broadcasting towers and adequate spacing between turbines and residences significantly alleviates the risk of signal-related problems at residences. No further mitigation or assessment is required.

The Off-air TV Analysis performed for the 2022 CSC Application remains accurate for the current Project (see Hearing Exhibit No. 1, Appendix C). The TV Signal Baseline Measurements Report (Hearing Exhibit No. 17) remains accurate for the current Project. TV reception at residences relying on cable or satellite TV service will not be impacted by construction or operation of the Project. If residents who rely on antennas experience signal disruption, Badger Wind will coordinate with the resident to mitigate the disruption. Impacts to low-power stations and translator stations are not anticipated to occur because those stations have a limited range.

Construction and operation of the Project are also not expected to impact landline phone service.

One microwave beam path has been identified overlapping the Project Area. Turbines 19 and 37 are the closest turbines to the beam path and have been positioned at the recommended setback distance to the Fresnel zones associated with the beam path. No adverse impact is expected.

The current Project information was provided to the U.S. Department of Commerce, National Telecommunications, and Information Administration (NTIA) for the department's review of proposed turbine placement in the current Project Area; Badger Wind is awaiting a response.

Badger Wind will coordinate with utility companies to determine utility locations and will comply with North Dakota One-Call requirements.

6.4. Human Health and Safety

6.4.1. Air Traffic

Badger Wind has coordinated with the Federal Aviation Administration (FAA), the Department of Defense (DoD) Siting Clearing House, and the Wishek Municipal Airport regarding the current Project. Badger Wind has contacted the North Dakota Aeronautics Commission with information regarding the current Project and is awaiting a response.

Badger Wind submitted Notice of Proposed Construction (Form 7460-1) filings to the FAA for all turbine and permanent MET tower locations in January 2024.

The current Project was reviewed by the DoD Military Aviation and Installation Assurance Siting Clearinghouse on 26 January 2024, and no concerns were raised.

No private airstrips registered with the FAA or North Dakota Aeronautics Commission are located within or in close proximity to the current Project Area.

Badger Wind also coordinated with the Wishek Municipal Airport regarding the current Project layout. In August – November 2023, Badger Wind consulted with the Wishek Municipal Airport to discuss the current Project layout. In November 2023, Badger Wind showed the current Project layout to the Wishek Municipal Airport, and the Wishek Municipal Airport contacted the North Dakota Aeronautics Commission during its review of the Project. The Wishek Municipal Airport confirmed it does not have any concerns with the current Project layout (**Appendix D: Agency Correspondence Since CSC Issuance)**.

6.4.2. Electromagnetic Fields

The prior analysis in Section 6.4 of the 2022 CSC Application remains accurate for the current Project.

6.4.3. Hazardous Materials/Hazardous Waste

The land within the Project Area is rural and primarily used for agriculture. Potential hazardous materials associated with agricultural activities include petroleum products (fuel and lubricants), pesticides, and herbicides. Older farmsteads may also have lead-based paints, asbestos shingles, and polychlorinated biphenyls in transformers. Trash and farm equipment dumps are common in rural settings. Potential hazardous materials associated with oil and gas wells can include, but are not limited to, releases of petroleum products and chemicals, which may potentially have adverse effects to human health or the environment.

As discussed in Section 6.4.1.3 of the 2022 CSC Application, a Phase I Environmental Site Assessment was conducted for the original Badger Wind Project Area in October 2021. No issues

were identified. Refer to the discussion in Sections 6.4.1.3 and 6.4.2.3 of the 2022 CSC Application regarding hazardous materials and hazardous waste.

A January 2024 review of the Leaking Underground Storage Tank (LUST), Underground Storage Tank (UST) and Recovered Government Archive (RGA) LUST lists, as provided by Environmental Data Resources, has identified no LUST/RGA LUST sites in the current Study Area or Project Area, and one UST site within the Project Area. **Table 6-5: U.S. Environmental Protection Agency Facility Registry Service Interests in the Study Area, Project Area** presents a comprehensive summary of the U.S. Environmental Protection Agency's (EPA) Facility Registry Service (FRS) interests that were identified within the current Study Area and Project Area, as a result of this review. Most of the FRS interests that were identified are related to oil and gas production facilities and farming/dairy operations in the Study Area and Project Area (e.g., gas plants, compressor stations) that are captured under multiple FRS categories (**Table 6-5: U.S. Environmental Protection Agency Facility Registry Service Interests in the Study Area, Project Area**Table 6-5). Other facilities were identified in the FRS records that are not related to oil and gas production/distribution, such as Delmer Diegel Farm, Rohweder Dairy, and Walth Cattle, etc.

Table 6-5: U.S. Environmental Protection Agency Facility Registry Service Interests in the Study Area, Project Area

EPA FRS Interest Category	2022 CSC Application		Current Project	
	Study Area	Project Area	Study Area	Project Area
Department of Homeland Security—Chemical Security Assessment Tool Reporter	0	0	0	0
Enforcement/Compliance Activity	0	0	0	0
Risk Management Plan Reporter	1	0	0	2
Small-quantity Hazardous Materials Generator	0	0	0	0
State Master	12	2	9	1
Tier 2 Hazardous Materials Reporter	0	0	1	0
Toxic Substances Control Act Reporting	0	0	0	1
Not Currently Classified in any Hazardous Waste Universe	0	0	0	0
Air Major	2	0	0	0
Total	**15**	**2**	**10**	**4**

Source(s): EDR Area / Corridor Report from December 28, 2023; EPA FRS queries in January 2024

Badger Wind will perform an updated Phase I Environmental Site Assessment, in accordance with the current ASTM standard (E1527-21) in Spring/Summer of 2024.

6.4.4. Security

The prior analysis in Section 6.4 of the 2022 CSC Application regarding security and potential impacts thereto remains accurate for the current Project.

6.5. Sound Resources

NDAC Section 69-06-08-01(4) provides that wind turbines must be sited such that sound levels within 100 ft of an inhabited residence or community building do not exceed 45 dBA unless a waiver is obtained from the owner of the inhabited residence or community building. Logan County and McIntosh County do not have sound level requirements for wind energy facilities.

Badger Wind conducted a Sound Assessment (**Appendix E: Updated Sound Analysis Report**) for the current Project. Sound levels were calculated using the ISO 9613-2 sound propagation model. The sound assessment conservatively assumed that: (i) all potential wind turbine locations[1] will be used, (ii) the turbines will be operated at a wind speed resulting in the loudest noise possible being emitted (108.5 dBA), and (iii) a +2 decibels (dB) adjustment was applied to turbine sound power levels. Additionally, the two substation step-up transformers were included in the sound modeling. For purposes of modeling, Badger Wind assumed low-noise trailing edge (LNTE) blades on all 103 turbines. Badger Wind has not yet selected the subset of 93 turbines to be constructed or the final turbine model. For purposes of modeling, the GE 2.82 MW turbine model with a hub height of 89 m was used.

The results of the modeling showed that nine receptors (including six participating and three non-participating residences) exceeded the applicable 45 dBA sound limit at 100 ft from the residence. For the nine receptors with exceedances, Badger Wind has obtained written waivers for seven receptors and is in the process of securing waivers for the remaining two receptors. These sound waivers can be found in **Appendix J: Badger Wind Sound Waivers**. If the owner of an affected residence does not sign a waiver, Badger Wind will either use noise reduction technology to comply with the sound limitation or will not construct the turbine(s) causing the exceedance(s). Accordingly, sound levels within 100 ft of an inhabited residence or community building will not exceed 45 dBA, unless waived in writing by the owner of such residence or building. Therefore, with respect to sound, the Project continues to meet the condition upon which the CSC was issued (see PSC Order Finding No. 49, and Order Para. No. 6).

6.6. Visual Resources

No local, state, or federal requirements exist with respect to shadow flicker. However, Badger Wind has designed the Project to comply with the industry standard of 30 hours per year or less

[1] Badger Wind proposes 103 total turbine positions and will build up to 93 total. There is one pair of turbine positions (73 and 73B) that are designed to be mutually exclusive such that only one of these two positions can be constructed due to their proximity and mutual waking. Therefore, the sound analysis only modeled turbine 73 because it has higher sound power levels at the receptors and therefore represents the most conservative and realistic sound modeling scenario.

of shadow flicker at non-participating and participating occupied residences, absent a waiver. An updated shadow flicker analysis was conducted for the current Project layout and turbine under consideration (see **Appendix F: Updated Shadow Flicker Analysis Report**). All 103 wind turbine locations were modeled, even though not all 103 turbine positions will be constructed. No receptors are expected to experience more than 30 hours per year for shadow flicker duration. Accordingly, the Project will comply with Badger Wind's voluntary commitment of 30 hours per year or less of shadow flicker at all residences, absent a waiver. Therefore, with respect to shadow flicker, the Project continues to meet the condition upon which the CSC was issued (see PSC Order Finding No. 50, and Order Para. No. 7).

6.7. Cultural/Archaeological and Historic Architectural Resources

At the time the CSC was issued, Badger Wind had completed Class III Cultural Resources Inventories for all areas that may experience temporary or permanent ground disturbance during construction and operations of the 2022 Project layout. Badger Wind has received concurrences from the State Historical Society of North Dakota (SHSND) for all of these reports. These studies identified seven unevaluated archaeological sites, and two site leads. At the time the CSC was issued, the planned Project infrastructure avoided these site leads and unevaluated sites (see PSC Order Finding No. 25).

A supplemental Class III Archaeological Survey (**Appendix L: Archaeological Reconnaissance Survey Report**) was completed for the current Project, covering the area added to the Project Area since 2022 and any other unsurveyed areas within the current Project Area potentially affected by updates to the Project layout. The survey identified one new archaeological site (32LO174) and one new prehistoric isolated find (32LOX76). These resources are recommended not eligible for listing in the National Register of Historic Places (NRHP). These findings have been submitted to SHSND for concurrence. Badger Wind will provide the Commission with the SHSND's concurrence once it is received.

To summarize, Badger Wind has sited the current Project to avoid the seven unevaluated archaeological sites and two archaeological site leads noted above. As a result, no impacts to archaeological resources are anticipated. Additionally, Badger Wind has developed an Unanticipated Discoveries Plan, which will be followed during construction in the event that previously unidentified potential cultural resources or human remains are encountered. A copy of the Unanticipated Discoveries Plan was provided as Appendix D to Hearing Exhibit No. 13.

Badger Wind continues to coordinate with the SHSND on archaeological resources. Additionally, due to landowner requests and micrositing, Badger Wind will complete additional cultural resource surveys on a limited number of unsurveyed areas in the spring of 2024 for minor shifts in the current layout. Badger Wind will provide both the SHSND and the Commission with copies of those reports and will provide the Commission with SHSND's concurrences on those reports prior to constructing in those areas.

At the time the CSC was issued, Badger Wind had also completed a Class I Literature Review and Class II Architectural Reconnaissance Inventory Survey for structures 45 years of age or older within the proposed Project's area of potential effects (APE) which consists of a two-mile buffer extending outwards from each proposed turbine location, per SHSND guidelines The Class II Survey identified five historic architectural resources and one contributing resource that are recommended as potentially eligible for listing in the NRHP. SHSND concurred with the Class I and Class II survey report. At the time the CSC was issued, the Project's layout was not anticipated to have an adverse direct or indirect impact on the identified architectural resources (see PSC Order Finding No. 27).

A supplemental Class I Literature Review and Class II Architectural Reconnaissance Inventory Survey (**Appendix M: Architectural Reconnaissance Survey Report**) was also completed for the current Project to cover any areas in the revised APE that were not subject to the previous review/survey. The supplemental Class I Literature Review identified one previously documented aboveground historic resource (32MT00038) that was either not fully evaluated for listing in the NRHP or was previously determined not eligible for inclusion. The Class II Architectural Reconnaissance Inventory survey identified a total of nine aboveground resources that are recommended not eligible for listing in the NRHP and confirmed that previously documented resource 32MT00038 was no longer extant. These findings have been submitted to SHSND for concurrence. Badger Wind will provide the Commission with the SHSND's concurrence once it is received.

To summarize, Badger Wind has sited the current Project to avoid impacts to the five historic architectural resources and one contributing resource that are recommended as potentially eligible for listing in the NRHP. As a result, no impacts to architectural resources are anticipated.

6.8. Recreational Resources

There are no designated recreation areas, public or private parks, or designated trails located in the Project Area, the Project will not impact recreational resources.

6.9. Effects on Land-Based Economies

Up to 1,153.2 acres of agricultural land will be temporarily impacted during construction of the current Project; however, these areas will be available for agricultural use following construction. Agricultural land temporarily impacted by construction will be restored to pre-construction conditions in accordance with NRCS recommendations, unless otherwise specified by the landowner and approved by the Commission, as detailed in **Appendix I: Badger Wind Reclamation and Weed Management Plan**. Temporary impacts to soil will be restored (e.g., decompacted) in accordance with Commission requirements and landowner agreements. The current Project will permanently impact up to approximately 94.4 acres of agricultural land for the life of the Project. However, during operations, landowners may continue to plant crops and graze livestock near and up to the turbine pads and access roads. The loss of agricultural land for operation of the Project will reduce the amount of land that can be cultivated or grazed in the

Project Area; however, less than one percent of the Project Area will be converted to non-agricultural land use (i.e., wind turbines, access roads, substation, O&M facility, permanent MET towers, and ADLS tower) for the life of the Project.

Trees are sparse within the current Project Area, and Badger Wind has designed the Project to minimize tree removal to the extent possible. Badger Wind has sited the majority of Project facilities in areas lacking large contiguous woodlands. Construction of the Project will permanently impact up to 0.4 acres of woodlands. The PSC authorized Badger Wind to clear trees and shrubs in the Project Area up to 100 ft in limited areas where it is necessary to collocate collection lines, access roads, and/or crane walks (see PSC Order Finding No. 39 and Order Para. No. 8). If tree removal is necessary, Badger Wind will coordinate with landowners regarding tree removal and replacement and will follow the Commission's tree and shrub mitigation specifications. If necessary, Badger Wind may bore collection lines under tree lines and woodlots to avoid impacts. Badger Wind requests PSC approval to clear trees and shrubs in the current Project Area up to 100 ft in limited areas where it is necessary to collocate collection lines, access roads, and/or crane walks.

6.10. Soil Resources

Soil characteristics within the current Study Area and Project Area were assessed using the NRCS Soil Survey Geographic (SSURGO) database. The prior analysis in Section 6.10 of the 2022 CSC Application and in Hearing Exhibit No. 5 regarding existing soil resources and potential impacts remains accurate for the current Project. 112 soil types are found within the current Study Area and 98 soil types are within the current Project Area (USDA 2019). Only 1 additional soil type was identified for the current Project from the 2022 CSC Application (USDA 2019). A list of the soil types is provided in **Appendix G: Updated Soil Types for the Badger Wind Project**.

Table 6-6: Farmland Classifications within the Study Area and Project Area lists the acres of prime farmland, prime farmland if drained, and farmland of statewide importance within the current Study Area and Project Area. **Figure 10: Prime and Unique Farmland** depicts the distribution of these classifications within the current Study Area and Project Area.

Table 6-6: Farmland Classifications within the Study Area and Project Area

Farmland Classification	2022 CSC Application		Current Project	
	Study Area (acres)*	Project Area (acres)*	Study Area (acres)*	Project Area (acres)*
Prime Farmland	6,368.7	1,743.0	6,372.6	1,868.5
Farmland of Statewide Importance	40,505.0	8,045.5	41,338.3	10,048.1
Not Prime Farmland	79,015.3	21,718.4	79,316.8	23,299.1
Prime Farmland If Drained	65.1	6.9	64.1	6.8

Farmland Classification	2022 CSC Application		Current Project	
	Study Area (acres)*	Project Area (acres)*	Study Area (acres)*	Project Area (acres)*
Total	**125,954.2**	**31,513.8**	**127,091.6**	**35,222.5**

Source: (USDA 2019)
*Note: Rounding has been applied to all values.

Seven percent of the total land in the current Project Area that could be considered prime farmland will be impacted for the life of the Project. Within the current Project Area, 9.2 acres of prime farmland and 63.8 acres of farmland of statewide importance will be impacted for the life of the Project (**Table 6-7: Summary of Permanent Impacts to Prime Farmland**). As such, the acres of prime farmland and farmland of statewide importance removed from use for the life of the Project will have a negligible impact on agricultural production.

Table 6-7: Summary of Permanent Impacts to Prime Farmland

Farmland Classification	2022 Project (Hearing Exhibit No. 5)	Current Layout
	Permanent Facility Acres[1]	Permanent Facility Acres[1]
Prime Farmland[2]	6.7	9.2
Farmland of Statewide Importance	32.4	63.8
Not Prime Farmland	37.8	54.9
Total	**76.9**	**127.8**

[1] Acres of impacts includes all permanent facilities (turbines, access roads, project substation, and O&M facility). Rounding has been applied to all values.
[2] This includes soils classified as prime farmland or prime farmland if the limiting factor is mitigated (e.g., by draining or irrigating).

Following construction, the temporarily disturbed areas outside of cropland will be reclaimed and reseeded with a seed mixture consistent with the surrounding vegetation and free of noxious weeds according to NRCS recommendations, unless otherwise specified by the landowner and approved by the Commission (see **Appendix I: Badger Wind Reclamation and Weed Management Plan**). To minimize the impacts of surface water runoff, BMPs in accordance with a Stormwater Pollution Prevention Plan (SWPPP) will be implemented, including use of silt fencing to control erosion and storm water runoff and directing surface flow away from cut-and-fill slopes and into ditches that discharge to natural drainages. All roads, turbine pads, and trenched areas will be regularly inspected and maintained to minimize erosion. Additionally, Badger Wind will obtain coverage under the North Dakota Pollutant Discharge Elimination System (NDPDES) General Stormwater Construction Permit, which requires preparation of a SWPPP. In addition, if more than 1,320 gallons of oil storage occurs on-site during construction,

Badger Wind will complete and implement a Spill Prevention, Control and Countermeasure (SPCC) Plan.

6.11. Geologic and Groundwater Resources

Figure 11: Geologic and Groundwater Resources depicts the existing geologic and groundwater resources in the current Study and Project Areas.

There are 76 domestic/stock/industrial/observational water wells in the current Study Area; of these 76 wells, 21 are located within the current Project Area. Six of these wells are for stock ponds, four are associated with farmsteads, two are associated with active observation wells, and three are either capped or destroyed observation wells. Within the current Study Area, 26 wells are listed as test wells and four are listed as unknown, of which four test wells and two unknown wells are within the current Project Area (ND Department of Water Resources 2024). Project facilities have been sited to avoid water wells.

Badger Wind does not anticipate any impacts to bedrock during construction or operation of the Project because bedrock within the Project Area is at depths much greater than the proposed foundation depths of seven to 13 ft deep. Additionally, Badger Wind does not expect any impacts to groundwater resources because the Wishek and Lower Wishek aquifers are at depths greater than the underground collection line depths of approximately four ft and proposed foundation depths of 7 to 13 ft deep.

Badger Wind anticipates that water may be used during construction for dust control and concrete mixes at a temporary concrete batch plant, if one is needed to supply concrete for construction of the Project. The water source will be determined prior to construction.

The O&M facility will likely require a new private water well. Water usage during the operating period will be similar to household volume—less than five gallons per minute. Use of water for operations will be negligible. The Project will not require the appropriation of surface water or permanent dewatering.

No active oil and gas wells were identified within the Project Area. Badger Wind has voluntarily sited turbines at least 168 m (approximately 551 ft) (turbine tip height) away from existing inactive oil and gas wells in the Project Area.

6.12. Surface Water and Floodplain Resources

Figure 12: Surface Water and Wetlands depicts the existing water resources in the current Study and Project Areas.

Prior analysis regarding existing surface water and floodplain resources and potential impacts remains accurate for the current Project. There are no current effective Federal Emergency Management Agency (FEMA) floodplain maps in Logan and McIntosh Counties (FEMA 2024). Thus, no impacts to FEMA-mapped floodplains are anticipated. However, based on consultation

with the North Dakota Department of Water Resources (ND DWR), Badger Wind understands that floodplain mapping is in progress; accordingly, if areas within the Project Area are identified as floodplains within the final FEMA Flood Insurance Rate Maps, Badger Wind will coordinate with Logan County regarding floodplain permitting, if applicable.

The current Project has been sited to avoid or minimize impacts to surface waters resources, to the extent practicable. Wind turbines will be built on uplands to avoid surface water resources in lower elevations, to the extent practicable. Access roads, crane paths, and collection lines have been designed to avoid crossing of streams and other surface waters, to the extent practicable.

Badger Wind anticipates that there will be unavoidable impacts to USACE jurisdictional waters under the 0.1-acre threshold for permanent impacts that will be permitted under the USACE Nationwide Permit program. Additionally, Badger Wind will obtain coverage under the NDPDES General Stormwater Permit, which requires preparation of a SWPPP.

6.13. Wetlands

Figure 12: Surface Water and Wetlands shows the locations of delineated and mapped wetlands. In areas where field delineations have not yet occurred, wetlands are shown based on wetland mapping procedures conducted in the field due to winter conditions. Areas identified through wetland mapping will be field delineated during spring and summer 2024.

At the time the CSC was issued, the Project's layout avoided permanent impacts to delineated wetlands with the exception of one access road that was planned to cross a field-delineated drainage wetland that paralleled an existing road and extends across the property, resulting in a permanent impact to the wetland of less than 0.01 acre (see PSC Order Finding Nos. 19, 38). This access road has now been removed and this wetland will no longer be permanently impacted.

Potential wetlands within the current Study Area and Project Area were identified using the USFWS National Wetlands Inventory (NWI). NWI data indicated the potential presence of up to 5,109 acres of wetlands within the current Study Area and 1,402 acres of wetlands within the current Project Area. In fall 2023, field wetland delineations and field wetland mapping were completed at locations not previously surveyed within the current Project Area with the potential for ground disturbance from Project construction activities or installed facilities associated with the Project. In all, 344.7 acres of wetlands were delineated within the current Study Area and 296.7 acres of wetlands were delineated within the current Project Area. 34.6 acres of potential wetlands were mapped within the current Study Area and 30.4 acres were mapped within the current Project Area. See **Appendix N: Wetland and Waterbodies Assessment**.

While the majority of areas of potential ground disturbance have been delineated to date, areas identified as potentially jurisdictional wetlands or waters of the Unites States (WOTUS) in the 2024 desktop assessment and identified as mapped wetlands from the 2023 field reconnaissance, will be targeted for wetland delineations in Spring 2024. Additionally, limited

additional field delineations will be conducted in Spring 2024 to delineate wetlands in areas identified from landowner requests and/or micrositing.

The Project has been designed to avoid permanent impacts to surveyed wetlands and minimize temporary wetland impacts. Where wetlands are present, Badger Wind plans to bore underground collection lines under the wetlands, thereby avoiding impacts to wetlands. The Project avoids permanent impacts to wetlands with the exception of one access road to a potential MET tower location (MET Tower 1) that crosses one field-mapped wetland resulting in permanent impact of 0.007 acres; however, if the wetland is confirmed during field delineations as a wetland, Badger Wind will avoid impacting this wetland unless no reasonable alternative exists. In the event MET Tower 1, and its associated access road, is constructed, the impact will be a self-certification under the Nationwide Permit in accordance with Section 404 of the CWA. Badger Wind will continue to assess the location of infrastructure and construction workspace of crane paths, access roads, and turbine pads through micrositing and landowner coordination to further minimize or avoid, where practicable, temporary impacts to wetlands. Matting will also be used when crossing wetlands during construction to minimize temporary disturbances. Coverage under the Section 404 CWA permit may be needed if discharge of dredge or fill material (temporarily or permanently) into WOTUS will occur.

6.14. Vegetation Resources

Badger Wind reviewed U.S. Geological Survey (USGS) National Land Cover Data (NLCD) to determine land cover classification types present within the current Study Area and Project Area. The results of this review are presented in **Section 6.2.1: Land Cover**.

Vegetation will be removed from areas of permanent infrastructure footprints for the life of the Project. These areas include turbine pads, access roads, the Project substation, the O&M facility, the ADLS tower, and permanent MET towers. With less than one percent of the current Project Area permanently converted for wind turbines or other Project infrastructure, the Project will permanently remove approximately 113.9 acres of vegetation for the life of the Project, the majority of which is cropland (approximately 91.8 acres) (**Table 6-3: Project Summary of Land Cover Impacts**).

Temporary vegetation impacts will occur within construction easements or workspace during the construction of Project components. Construction of the Project will temporarily impact 1,549.9 acres of vegetation (see **Table 6-3: Project Summary of Land Cover Impacts**). Following construction, the temporarily disturbed areas outside of cropland will be re-vegetated with a seed mixture consistent with the surrounding vegetation and free of noxious weeds, in coordination with the NRCS and landowners. Once re-vegetated, these areas will be available for their present use. Construction workspace impact calculations are conservative, and actual impacts are anticipated to be less.

Badger Wind has developed a Reclamation and Weed Management Plan (**Appendix I: Badger Wind Reclamation and Weed Management Plan**) that identifies and establishes the procedures

to prevent the introduction and spread of noxious weeds during construction and ongoing operations. As detailed in the Badger Wind Reclamation and Noxious Weed Management Plan, appropriate BMPs will be employed during Project construction to avoid or minimize temporary impacts to vegetation. Temporary disturbance areas will be reclaimed and reseeded according to NRCS recommendations, unless otherwise specified by the landowner and approved by the Commission. Badger Wind will work collaboratively with construction parties to prevent and/or minimize the introduction and spread of noxious weeds during construction and operations.

6.15. Wildlife

Since the issuance of the CSC, Badger Wind has completed additional wildlife and habitat studies and analyses for the current Project, which are discussed in the following sections. The wildlife surveys listed in **Table 6-8: Summary of Additional Wildlife Studies and Plans for the Badger Wind Project** were conducted (or are planned) based on consultation with NDGF and USFWS and are consistent with the voluntary USFWS Land-Based Wind Energy Guidelines (WEG) and Eagle Conservation Plan Guidance. The surveys listed in **Table 6-8: Summary of Additional Wildlife Studies and Plans for the Badger Wind Project** are summarized in the sections below. Based on the additional studies and analyses conducted with respect to wildlife, the Project site continues to meet the conditions upon which the CSC was issued.

Table 6-8: Summary of Additional Wildlife Studies and Plans for the Badger Wind Project

Survey Type	Study/Plan Development Period	Status	Reference
Updated Grassland Habitat Assessment	August 2023	Complete	**Appendix O: Updated Grassland Habitat Assessment**
Additional eagle/large bird use surveys	August 2023 – July 2024	Ongoing	N/A
Bald eagle nest field verification	January 2024	Complete	**Appendix H: Updated Bird and Bat Conservation Strategy**
Additional eagle and raptor nest surveys	Spring 2024	Planned	N/A
Eagle Management Plan/Eagle Conservation Plan	January 2024 – June 2024	Ongoing	N/A
Updates to Bird and Bat Conservation Strategy (BBCS)	November 2023 – January 2024	Complete	**Appendix H: Updated Bird and Bat Conservation Strategy**
	January 2024 – June 2024	Ongoing	N/A

As discussed further in **Section 9.0: Agency Comments**, Badger Wind coordinated closely with the USFWS, NDGF, and North Dakota Parks and Recreation (NDPR) regarding wildlife and species habitat. Specifically, the USFWS provided information related to federally listed Threatened and

Endangered species (discussed further in **Section 6.16: Rare and Unique Natural Resources**), eagles, Birds of Conservation Concern (BCC), and other migratory birds protected under the Migratory Bird Treaty Act (MBTA). The NDGF provided information relating to species of conservation priority (SCP), particularly relating to conserving habitat for these species. This included concerns relating to potential impacts to native prairie (also referred to interchangeably by NDGF as unbroken grasslands), wetlands, sharp-tailed grouse, bats, bald and golden eagles, and whooping cranes within the Project Area. The NDPR performed a review of the ND Natural Heritage biological conservation database. No resources were identified within the Project Area, and the NDPR deferred further comment on the Project's potential to impact wildlife to the NDGF and USFWS.

6.15.1. Avian Surveys

At the time the CSC was issued, Badger Wind had completed two years of baseline general avian and eagle use surveys, fixed-point avian use surveys, and aerial and ground-based eagle and raptor nest surveys (see PSC Order Finding No. 22). The surveys identified avian species within and near the 2022 Project Area. See Section 6.15 of the 2022 CSC Application for a discussion of the results of the avian use and eagle and raptor nest surveys conducted previously, which remain accurate and applicable to the current Project. No known, active golden eagle nests were identified within the 2022 Project Area or within ten mi of it (see PSC Order Finding No. 22). One active bald eagle nest (BAEA 21-01) and one alternate nest were identified within the 2022 Project Area but are located more than two mi from 2022 Project turbine locations (see PSC Order Finding No. 22).

Avian use in the current Project Area is representative of the previously observed avian use, as turbines located in the area added to the Project Area since 2022 are located no farther than two mi away from the previously surveyed area with similar land cover and avian habitat. However, Badger Wind has commissioned an additional 12 months of eagle and large bird surveys of the current Project Area to ensure that avian use is sufficiently characterized for the current Project Area. The additional eagle and large bird surveys began in August of 2023 and will conclude in July 2024, allowing for an additional year of data collection prior to commencement of construction.

At the time the CSC was issued, Badger Wind had prepared a Bird and Bat Conservation Strategy (BBCS) in coordination with USFWS and NDGF. The Project BBCS has been updated as of January 2024 to reflect the current Project, additional coordination with USFWS and NDGF, and additional planned environmental studies for Badger Wind. The updated BBCS has been shared with NDGF and USFWS for review and is included with this application as **Appendix H: Updated Bird and Bat Conservation Strategy**.

Eagle and Raptor Nests

Based on surveys conducted to date, no golden eagle nests have been identified within the current Project Area or within ten mi of the Project Area.

A ground-based nest verification survey was completed on 5 January 2024 **(Appendix H: Updated Bird and Bat Conservation Strategy**) to confirm the presence or absence of the two previously identified eagle nests (one active nest and one alternate nest) within the Project Area. One previously identified nest (BAEA 21-01) was observed in a deciduous tree and was classified as being in good condition; however, the nest status was unknown. The second nest (BAEA 19-01) was missing and not observed during this survey. Project turbines are sited at least two mi from the remaining nest. Badger Wind plans to do additional eagle and raptor nest surveys of the current Project Area in Spring 2024.

Grassland Breeding Birds

In addition to the grassland habitat assessments conducted for the 2022 Project (see Section 6.15 of the 2022 CSC Application), Badger Wind conducted additional desktop and field verification surveys for grasslands in August of 2023 (see **Appendix O: Updated Grassland Habitat Assessment**) to cover changes/updates to the Project, which include the expanded Project boundary. Badger Wind prepared an updated Grassland Habitat Assessment included as **Appendix O: Updated Grassland Habitat Assessment**, which presents the combined results of grassland assessments conducted for the Project during 2021 and during 2023. The results of these surveys have been used to evaluate and inform Project infrastructure siting decisions to avoid and/or minimize potential impacts to unbroken grassland habitat. No turbines are sited within unbroken grasslands. Additionally, the majority of turbine locations are in areas not suitable for grassland species habitat, and all turbines in suitable habitat are sited in already fragmented areas, which helps minimize impacts to grassland species.

Badger Wind is continuing to coordinate with the USFWS and NDGF on voluntary offsets for potential grassland breeding bird displacement.

Sharp-tailed Grouse

At the time the CSC was issued, Badger Wind had completed aerial and ground-based sharp-tailed grouse lek surveys in 2019 and 2020. The surveys found two confirmed lek locations within the 2022 Project Area boundary, four confirmed and one possible lek locations within one mile of the 2022 Project Area boundary, and seven confirmed and one possible lek locations more than one mile from the 2022 Project Area boundary (see PSC Order Finding No. 22). Badger Wind retained WEST to develop a Plains Sharp-Tailed Grouse Conservation Strategy to minimize potential impacts to sharp-tailed grouse during Project construction and operations (Hearing Exhibit No. 10). As was committed to in the Plains Sharp-Tailed Grouse Conservation Strategy (Hearing Exhibit No. 10), in the current Project layout, no turbines are located within unbroken grasslands, the majority of turbines are sited in areas that are not suitable for sharp-tailed grouse habitat, and all turbines located in identified suitable habitat are located in previously fragmented areas, which helps minimize impacts to the local sharp-tailed grouse population. Badger Wind has coordinated with USFWS and NDGF regarding the current layout and its continued compliance with the Plains Sharp-Tailed Grouse Conservation Strategy (Hearing Exhibit No. 10).

Based on consultation with the USFWS and NDGF, previous surveys, and determined low potential impacts to sharp-tailed grouse leks, additional data collection has not been deemed necessary for the Project at this time (see **Appendix D: Agency Correspondence Since CSC Issuance**).

6.15.2. Mammals

Prior analysis regarding habitat for mammals and potential impacts remains accurate for the current Project; thus, no impacts are anticipated. See Section 6.15 of the 2022 CSC Application.

6.15.3. Bat Species

At the time the CSC was issued, Badger Wind had completed two years of acoustic bat monitoring and a bat habitat assessment (see PSC Order Finding No. 22) in 2019 and 2020. During the monitoring period, no northern long-eared bat (NLEB) calls were confirmed, although there were two unconfirmed calls from the *Myotis* species group, which includes NLEB. The desktop Bat Habitat Assessment found that potentially suitable habitat for NLEB is limited within the 2022 Project Area. The results of the acoustic monitoring and habitat assessment indicate the potential for NLEB to occur in the 2022 Project Area is low (see PSC Order Finding No. 22).

Badger Wind coordinated with USFWS and NDGF on whether additional data collection is needed for the current Project Area. USFWS and NDGF did not indicate that additional data collection for bat species was necessary for the current Project Area (**Appendix D: Agency Correspondence Since CSC Issuance**). Additionally, Badger Wind has prepared an updated BBCS that will be implemented during construction and operation of the Project (**Appendix H: Updated Bird and Bat Conservation Strategy**). The updated BBCS documents the measures to be implemented during siting, construction, and operations to avoid and/or minimize potential impacts to bats.

6.15.4. Reptiles and Amphibians

Prior analysis regarding reptiles and amphibians and potential impacts remains accurate for the current Project; thus, no impacts are anticipated. See Section 6.15 of the 2022 CSC Application.

6.16. Rare and Unique Natural Resources

6.16.1. Federally Listed Species

The USFWS Information for Planning and Consultation (IPaC) system was reviewed for a list of Threatened, Endangered, and Candidate species and Designated Critical Habitat that could occur within the current Project Area and a one-mile buffer (USFWS 2024). According to the USFWS IPaC system, no Designated Critical Habitat is present in the current Study or Project Areas. Five federally listed species and one Candidate species have the potential to occur within the current Project Area and a one-mile buffer:

- Whooping crane (*Grus americana*; Endangered)

- NLEB (*Myotis septentrionalis;* Endangered)
- Piping plover (*Charadrius melodus*; Threatened)
- Rufa red knot (*Calidris canutus rufa*; Threatened)
- Dakota skipper (*Hesperia dacotae;* Threatened)
- Monarch butterfly (*Danaus plexippus;* Candidate)

Whooping Crane

At the time the CSC was issued, Badger Wind had completed a whooping crane habitat assessment in 2021, which indicated that potential whooping crane stopover habitat is present in the 2022 Project Area, but the habitat is of relatively lower quality and quantity compared to the nearby reference areas analyzed (see PSC Order Finding No. 22). Based on previous surveys results, whooping cranes may occur in the Project Area during the migration season; however, the potential for impacts to whooping cranes is low.

As referenced in the updated BBCS, Badger Wind is coordinating with USFWS on additional whooping crane avoidance measures.

Northern Long-eared Bat

The NLEB was reclassified by the USFWS as Endangered under the *Endangered Species Act* (ESA) on 29 November 2022, with an effective date of 31 March 2023 (USFWS 2023a). Reclassification occurred primarily because the NLEB faces extinction due to the wide-range impacts of white-nose syndrome (WNS). As a result, reclassification of NLEB to an Endangered species has nullified the section 4(d) rule, which limited prohibitions for the incidental take of the species to those that would protect the bat in WNS-affected areas. While the 4(d) rule has been nullified, USFWS still requires projects to comply with Section 7(a)(2) of the ESA and to consult with the USFWS to ensure projects will not jeopardize the continued existence of any federally listed species or adversely modify designated critical habitats (USFWS 2023b).

With reclassification to Endangered, incidental take of the species is now prohibited in all cases without an incidental take statement (ITS) from USFWS. While the Project Area lacks high quality woodlands, which limits the species' likelihood to occur, NLEB are roost generalists, and roost tree species exhibiting preferential roost characteristics were documented in small numbers within the 2019 Study Area during a site visit on June 12–June 13, 2019 (Atwell 2020a). Therefore, although likelihood of occurrence of NLEB in the Project is low, Badger Wind has or will implement the following measures to minimize potential impacts to the species:

- Avoiding impacts to woodland where feasible, and if tree clearing is unavoidable, completing tree clearing in accordance with tree restrictions for NLEB as per the ESA.
- Conduct post-construction fatality monitoring to assess impacts to NLEB and revise the BBCS as needed.

Piping Plover

According to the USFWS IPaC report (USFWS 2024), there is Designated Critical Habitat for the piping plover approximately three mi northeast of the Project Area; however, no individuals were observed during avian surveys in 2019 and 2020. Impacts to piping plover as a result of Project construction and operation are likely to be low. As such, no mitigation measures are proposed.

Rufa Red Knot

Prior analysis regarding the rufa red knot and potential impacts remains accurate for the current Project; thus, no impacts are anticipated. See Section 6.15 of the 2022 CSC Application.

6.16.2. State Species of Concern

The NDPR maintains the North Dakota Natural Heritage Inventory database containing the known locations of rare animal and plant species and significant ecological communities within the state. In a November 2021 guidance letter, the NDPR indicated there are no known rare species or significant ecological communities documented within or immediately adjacent to the 2022 Project Area. An updated guidance letter from the NDPR dated 10 January 2024 indicated there are no known rare species or significant ecological communities documented within or immediately adjacent to the current Project Area (see **Appendix D: Agency Correspondence Since CSC Issuance**).

The State of North Dakota does not have a state threatened and endangered species list; instead, the NDGF maintains a list of SCP. Prior analysis regarding SCP and potential impacts remains accurate for the current Project. See Section 6.16 of the 2022 CSC Application.

Avoidance and minimization measures and general conservation strategies for SCP species follow those described in the previous sections for all wildlife species. The updated BBCS (**Appendix H: Updated Bird and Bat Conservation Strategy**) outlines specific avoidance and minimization measures that will be used to avoid impacts to both bird and bat species, including SCP.

6.17. Summary of Impacts and Avoidance/Minimization Measures

Table 6-9: Updated Summary of Impacts provides a summary of potential Project impacts and their associated avoidance and minimization measures.

Table 6-9: Updated Summary of Impacts

Resource	Potential Impact	Proposed Avoidance, Minimization, and Mitigation	Section
Demographics	The Project will result in an increase in socioeconomic benefits for landowners, local governments, and communities by providing increased income to landowners receiving lease payments, which could raise the per capita income in Logan and McIntosh Counties. No long-term changes to demographics anticipated.	The Project will increase the local tax base, thereby creating benefits to local governments and communities; therefore, no mitigation is required.	6.1
Land Cover, Land Use, and Zoning	The Project will convert approximately 127.8 acres of land in the Project Area into a renewable, alternative energy source for the life of the Project. The Project will temporarily impact approximately 1,651.4 acres of land.	After construction, temporary disturbance areas will be reclaimed, fertilized, and reseeded according to NRCS recommendations, unless otherwise specified by the landowner and approved by the Commission, as detailed in **Appendix I: Badger Wind Reclamation and Weed Management Plan**. Lease payments will be paid to landowners for placement of Project facilities to offset loss of income from permanent impacts to agricultural land. Linear facilities (i.e., access roads, crane paths, and collection lines) will be collocated to the extent practicable and sited in previously disturbed areas. The Project is compatible with existing land uses and has been designed to comply with local zoning requirements.	6.2

Resource	Potential Impact	Proposed Avoidance, Minimization, and Mitigation	Section
Public Services	Construction of the Project will temporarily increase traffic on haul roads. Traffic impacts associated with the operations phase after construction will be minimal. The Project has the potential to impact TV reception for residents relying on antennas. Impacts to local emergency services, railroads, water supplies, telephone, microwave, or radio communications are not anticipated.	Badger Wind will utilize North Dakota One Call to identify existing utilities prior to construction. Badger Wind will coordinate with applicable local and state road authorities to ensure that all applicable permits are obtained, delivery plans are communicated, and traffic management plans are implemented where necessary. Badger Wind has executed road use and maintenance agreements with Logan County and McIntosh County. Following completion of construction, per the terms of the road use agreements, affected roadways will be repaired or restored to a condition at least equal to the condition prior to construction of the Project. The Project has been sited to avoid microwave beam paths and communication systems. If residents that rely on antennas experience signal disruption, Badger Wind will coordinate with the residence owners to mitigate the disruption.	6.3
Human Health and Safety	No adverse impacts are anticipated.	Badger Wind has sited turbines and associated facilities in compliance with Commission and Logan County setback requirements. Badger Wind will comply with light-mitigating technology system requirements set forth in NDCC Section 49-22-16.4. Badger Wind will coordinate with emergency service providers to determine appropriate safety precautions/standards and develop an Emergency Response Plan.	6.4
Sound	A noise study (**Appendix E: Updated Sound Analysis Report**) was completed for the current Project using GE 2.82-MW turbines at all potential turbine locations[1], of which up to 93 will be constructed. Sound levels are modeled at or below 45 dBA within 100 ft of all inhabited residences and community buildings, with the exception of nine receptors (six	For the nine receptors with modeled sound levels above the sound level requirement, Badger Wind has obtained written waivers for seven receptors and is in the process of securing waivers for the remaining two receptors. See (**Appendix J: Badger Wind Sound Waivers**). In the event waivers are not obtained for the remaining two receptors with modeled sound levels above the sound level requirement, Badger Wind will take steps to ensure compliance with the sound level requirement, such as by using noise reduction technology or not constructing the turbine(s) causing the exceedance(s).	6.5

Resource	Potential Impact	Proposed Avoidance, Minimization, and Mitigation	Section
	participating and three non-participating residences).		
Visual	The Project will have visual and potential aesthetic impacts. A shadow flicker analysis was conducted for the current Project layout and turbine under consideration (**Appendix F: Updated Shadow Flicker Analysis Report**). The highest expected shadow flicker is 27 hours per year, which is at a participating receptor. All receptors, including all participating and non-participating receptors, have expected shadow flicker of less than 30 hours per year.	Compliance with applicable setbacks and minimum FAA lighting and marking requirements are anticipated to minimize visual impacts. Badger Wind has designed the Project to comply with the industry standard of 30 hours per year or less of shadow flicker at all occupied residences, absent a waiver.	6.6
Cultural Resources	Ground-disturbing activities during construction have the potential to impact known or unknown cultural and historic architectural resources in or adjacent to the Project Area.	Class I, II, and III surveys and associated reports have been completed for a majority of the current Project, with a minimal number of unsurveyed areas to be surveyed for archaeological resources in spring 2024. Project infrastructure has been sited to avoid archaeological and historic architectural resources that have been identified and recommended for avoidance in the Project's Class I, II, and III reports. Additionally, Badger Wind has prepared an Unanticipated Discoveries Plan.	6.7
Recreational Resources	There are no designated recreation areas, public or private parks, or designated trails located in the Project Area. Impacts to recreational resources are not anticipated.	No avoidance or mitigation measures are required or proposed.	6.8

Resource	Potential Impact	Proposed Avoidance, Minimization, and Mitigation	Section
Land-Based Economies	The Project will temporarily impact up to approximately 1,154.6 acres of agricultural land, and will impact up to approximately 104.1 acres of agricultural land for the life of the Project. The Project may impact approximately 0.4 acres of woodlands.	Agricultural land temporarily impacted by construction will be restored to preconstruction conditions in accordance with NRCS recommendations, unless otherwise specified by the landowner and approved by the Commission. Agricultural practices will be able to continue during Project construction and operations. After construction, temporarily disturbed non-agricultural lands will be revegetated using a seed mix approved by the NRCS in accordance with the Project reclamation plan. The Project has been designed to minimize tree removal to the extent possible, and the majority of Project facilities have been sited in areas lacking large contiguous woodlands. Any impacts on trees and woodlands from the placement of wind turbines and associated facilities for the Project would be minor in nature. If tree removal is necessary, Badger Wind will coordinate with landowners regarding tree removal and replacement and will follow the Commission's tree and shrub mitigation specifications. If necessary, Badger Wind may bore collection lines under tree lines and woodlots to avoid impacts.	6.9
Soil Resources	Surface disturbance caused by construction of the Project may cause the soil surface to become more prone to erosion and result in soil compaction and the spread of noxious weeds.	Impacts to soils within the Project Area will be localized to the areas where Project activities occur and minimized through the use of BMPs. BMPs may include erosion and sediment control measures, noxious weed control, segregation of topsoil, decompaction of subsurface soils before topsoil replacement, reseeding of temporarily disturbed areas, the use of construction equipment appropriately sized to the scope and scale of the Project, and designing access road grades to fit closely with the natural terrain, to the extent practicable.	6.10

Resource	Potential Impact	Proposed Avoidance, Minimization, and Mitigation	Section
Geologic and Groundwater Resources	Impacts to geologic and groundwater resources are not anticipated.	No mitigation is proposed.	6.11
Surface Water and Floodplain Resources	Construction of Project facilities could potentially impact surface water runoff within the Project Area. Ground-disturbing construction activities have the potential to cause sedimentation, but these impacts are expected to be minimal and will only occur during construction. The Project is not anticipated to permanently impact surface waters.	The Project and associated facilities have been sited to avoid or minimize impacts to surface waters and floodplain resources, to the extent practicable. If unavoidable impacts to USACE jurisdictional waters were to occur, these activities would be permitted under the Nationwide Permit Program. Badger Wind will also implement appropriate erosion and sediment control BMPs and obtain coverage under the NDPDES General Stormwater Permit.	6.12

Resource	Potential Impact	Proposed Avoidance, Minimization, and Mitigation	Section
Wetlands	The Project avoids permanent impacts to wetlands with the exception of one access road to a potential MET tower location (MET Tower 1) that crosses one field-mapped wetland resulting in permanent impact of 0.007 acres.	The Project has been designed to avoid and/or minimize impacts to wetlands, to the extent practicable. The Project avoids permanent impacts to wetlands with the exception of one access road to a potential MET tower location (MET Tower 1) that crosses one field-mapped wetland resulting in permanent impact of 0.007 acres; however, if the wetland is confirmed during field delineations as a wetland, Badger Wind will avoid impacting this wetland unless no reasonable alternative exists. In the event MET Tower 1, and its associated access road, is constructed, the impact will be a self-certification under the Nationwide Permit in accordance with Section 404 of the CWA. The construction workspace of crane paths, access roads, and turbine pads may be reduced in size or slightly shifted, where practicable, to avoid or minimize temporary impacts to wetlands. Matting will also be used when crossing wetlands during construction to minimize temporary disturbances. Collection lines will be bored under wetlands where they intersect, thereby avoiding impacts to wetlands. If unavoidable impacts to USACE jurisdictional waters occur, these activities will be self-certified under the Nationwide Permit Program.	6.13
Vegetation	The Project will remove up to approximately 127.5 acres of vegetation (the majority of which is cropland) for the life of the Project. The Project will temporarily impact up to approximately 1,552.7 acres of vegetation.	As detailed in the Badger Wind Reclamation and Noxious Weed Management Plan (**Appendix I: Badger Wind Reclamation and Weed Management Plan**), appropriate BMPs will be employed during Project construction to avoid or minimize temporary impacts to vegetation. The plan also identifies and establishes the procedures that will be implemented to prevent the introduction and spread of noxious weeds during construction and ongoing operations. Following construction, temporary disturbance areas will be reclaimed and reseeded according to NRCS recommendations, unless otherwise specified by the landowner and approved by the Commission. Badger Wind will work collaboratively with construction parties to prevent and/or minimize the introduction and spread of noxious weeds during construction and operations.	6.14

Resource	Potential Impact	Proposed Avoidance, Minimization, and Mitigation	Section
Wildlife: Avian Species	The Project may impact avian species through increasing the potential for bird strikes with the turbines and/or habitat impacts.	The Project has been sited to avoid/minimize impacts to avian species. Badger Wind has coordinated with USFWS and NDGF regarding the current layout and its continued compliance with the Plains Sharp-Tailed Grouse Conservation Strategy (Hearing Exhibit No. 10), such as: the majority of turbines are sited in areas that are not suitable for sharp-tailed grouse; and all turbines are located in previously fragmented areas, which helps minimize impacts to the local sharp-tailed grouse population. Additionally, Project collection and communication lines will be buried, thereby avoiding the potential for collisions with overhead lines. Temporary disturbance areas will be reclaimed and reseeded according to NRCS recommendations, unless otherwise specified by the landowner and approved by the Commission. If impacts to trees/shrubs occur, they will be mitigated per the Commission's tree and shrub mitigation specifications. Badger Wind is continuing to coordinate with the USFWS and NDGF on voluntary offsets for potential grassland breeding bird displacement. Badger Wind's updated BBCS outlines proposed avoidance, minimization, and mitigation measures that will be implemented (**Appendix H: Updated Bird and Bat Conservation Strategy**).	6.15.1
Wildlife: Mammals	The Project may impact habitat for ground-dwelling wildlife.	Turbines and access roads have been sited to avoid wooded stands and shelterbelts to the extent practicable. Tree clearing will be avoided to the extent practicable. Where unavoidable, tree removal will be mitigated in accordance with the Commission's tree and shrub mitigation specifications. After construction impacts, all temporary surface disturbance will be reclaimed according to NRCS recommendations, unless otherwise specified by the landowner and approved by the Commission, as detailed in the Badger Wind Reclamation and Weed Management Plan (**Appendix I: Badger Wind Reclamation and Weed Management Plan**).	6.15.2

Resource	Potential Impact	Proposed Avoidance, Minimization, and Mitigation	Section
Wildlife: Bat Species	Impacts to bats may occur through loss of habitat or as a result of direct impact due to collision. Approximately 0.4 acres of impacts to woodlands may occur.	Badger Wind has coordinated with the USFWS and NDGF and has designed the Project to avoid and/or minimize potential impacts to bat species. Turbines and access roads have been sited to avoid wooded stands and shelterbelts to the extent practicable. Unavoidable impacts to trees will be mitigated consistent with the Commission's tree and shrub mitigation specifications. Badger Wind's updated BBCS outlines proposed avoidance, minimization, and mitigation measures that will be implemented (**Appendix H: Updated Bird and Bat Conservation Strategy**).	6.15.3
Wildlife: Reptiles and Amphibians	Impacts to reptiles and amphibians as a result of Project development are expected to be minimal.	Impacts to reptiles and amphibians will be limited by avoiding and minimizing impacts to surface water features on site.	6.15.4
Rare and Unique Natural Resources: Federally Listed Species	The potential for federally listed species to occur in the Project Area is low due to limited potential habitat; therefore, impacts to federally listed species are not anticipated.	Project collection and communication lines will be buried to avoid the potential for whooping crane collisions with overhead lines. As referenced in the updated BBCS, Badger Wind is coordinating with USFWS on additional whooping crane avoidance measures. Badger Wind has or will implement the following measures to minimize potential impacts to NLEB: • Avoiding impacts to woodland where feasible, and if tree clearing is unavoidable, completing tree clearing in accordance with tree restrictions for NLEB. • Conduct post-construction fatality monitoring to assess impacts to NLEB and revise the BBCS as needed. • Badger Wind has developed an updated BBCS that outlines proposed avoidance, minimization, and mitigation measures that will be implemented.	6.16.1

Resource	Potential Impact	Proposed Avoidance, Minimization, and Mitigation	Section
Rare and Unique Natural Resources: State Species of Concern	Impacts to state species of concern will be similar to those for wildlife.	The Project has been sited to avoid and minimize impacts to SCP. Badger Wind has coordinated with USFWS and NDGF regarding the current layout and its continued compliance with the Plains Sharp-Tailed Grouse Conservation Strategy (Hearing Exhibit No. 10), such as: no turbines are sited in unbroken grasslands, the majority of turbines are sited in areas that are not suitable for sharp-tailed grouse habitat, , and all turbines in suitable habitat are located in previously fragmented areas, which helps minimize impacts to the local sharp-tailed grouse population. Additionally, roads and laydown areas have been sited in previously disturbed or agricultural areas, to the extent practicable, to reduce habitat fragmentation. Wind turbines and other infrastructure have been sited to avoid wetlands to the maximum extent practicable to minimize impacts to snapping turtles. Impacts to SCP will be further limited by avoiding and minimizing impacts to surface water features on site. All collection and communication lines will be buried to reduce the potential for strikes with electric lines. Impacts to bats and birds as a result of the Project will be minimized by avoiding and/or mitigating impacts to trees, consistent with the Commission's tree and shrub mitigation specifications. Avoidance and minimization measures and general conservation strategies for SCP species follow those described in Section 6.15 for all wildlife species. An updated BBCS (**Appendix H: Updated Bird and Bat Conservation Strategy**) was developed, which outlines specific avoidance and minimization measures that will be used to avoid impacts to bird and bat species, including SCP.	6.16.2

[1]Badger Wind proposes 103 total turbine positions and will build up to 93 total. There is one pair of turbine positions (73 and 73B) that are designed to be mutually exclusive such that only one of these two positions can be constructed due to their proximity and mutual waking. Therefore, the sound analysis only modeled turbine 73 because it has higher sound power levels at the receptors and therefore represents the most conservative and realistic sound modeling scenario."

7. IDENTIFICATION OF POTENTIAL PERMITS/APPROVALS

Potential permits, clearances, and approvals that may be needed for the development and operation of the Project are listed in **Table 7-1: Potential Permits and Approvals**. Documentation of related agency correspondence since the CSC issuance is included in **Appendix D: Agency Correspondence Since CSC Issuance**.

Table 7-1: Potential Permits and Approvals

Administering Agency	Permit, Approval, or Consultation	Applicability for Project	Status
Federal			
U.S. Army Corps of Engineers	Federal Clean Water Act Section 404	Required if dredging or filling WOTUS.	To be obtained prior to activity subject to permit, if needed.
U.S. Fish and Wildlife Service (USFWS)	Special Use Permit(s)	Required for temporary disturbance to USFWS grassland easements and wetland impacts within a USFWS wetland easement.	To be obtained, as needed, prior to construction.
	Review for Threatened and Endangered Species	Consultation regarding potential impacts to species protected under the Endangered Species Act (ESA).	Coordination with the USFWS has been ongoing since October 2019.
Federal Aviation Administration (FAA)	Form 7460-1 Notice of Proposed Construction or Alteration (Determination of No Hazard)	Construction or alteration of structures higher than 200 ft Above Ground Level (AGL), structures near airports, or siting within line of sight of radar of an air defense facility.	Filed October 2021; updates were filed in January 2024; to be obtained prior to construction of turbines.
	Notice of Actual Construction or Alteration (Form 7460-2)	Supplemental notice to FAA in advance of or after commencing construction of turbines.	Notice to be provided in advance of or after commencing construction of turbines, as appropriate.
	Marking and Lighting Recommendations	Required for approval of light-mitigating technology.	To be obtained prior to marking/lighting.
Federal Communications Commission	Radio Station Authorization/License	Typically required for operation of ADLS communications tower.	To be obtained prior to activity subject to permit.

Administering Agency	Permit, Approval, or Consultation	Applicability for Project	Status
	Registration	Typically required for operation of ADLS communications tower.	To be obtained prior to activity subject to permit.
State of North Dakota			
North Dakota Public Service Commission	Certificate of Site Compatibility	Required for construction of an energy conversion facility with a nameplate capacity greater than 0.5 MW.	Certificate of Site Compatibility obtained November 30, 2022; amendment in progress, to be obtained prior to commencement of construction.
North Dakota Department of Environmental Quality (NDDEQ)	North Dakota Pollutant Discharge Elimination System (NDPDES) General Permit for Stormwater Discharge Related to Construction (includes Stormwater Pollution Prevention Plan [SWPPP])	Required for stormwater discharges from construction activities disturbing greater than one acre. Must also prepare a SWPPP.	To be obtained prior to activity subject to permit.
	401 Water Quality Certification	Required in conjunction with Section 404 permit for filling jurisdictional WOTUS.	Incorporated into Section 404 Nationwide Permits.
North Dakota State Water Commission, Office of the State Engineer	Temporary Water Permit	Required for temporary uses of water, with the exception of when the volume of water to be impounded, withdrawn, or diverted is less than 12.5 acre-feet (4,073,137 gallons) and the water is used for domestic, fish, livestock, wildlife, or recreational purposes.	To be obtained prior to activity subject to permit, if needed.

Administering Agency	Permit, Approval, or Consultation	Applicability for Project	Status
	Conditional Water Permit	Required for water uses where the use period will exceed 12 months, with the exception of when the volume of water to be impounded, withdrawn, or diverted is less than 12.5 acre-feet and the water is used for domestic, fish, livestock, wildlife, or recreational purposes.	To be obtained prior to activity subject to permit, if needed.
	Drainage Permit	Required prior to drainage of a waterbody, pond, lake, slough, or sheetwater, or any series thereof, that has a watershed area of at least 80 acres.	To be obtained prior to activity subject to permit, if needed.
North Dakota Highway Patrol	Oversize/Overweight Permit	Required to transport oversized/overweight loads within state-managed roadways.	To be obtained prior to transport of oversized/ overweight loads, if needed.
North Dakota Department of Transportation (NDDOT)	Utility Occupancy Permit(s)	Required to install electrical lines within state-owned roadway ROW.	To be obtained prior to construction work within state roadway ROW, if needed.
	Highway Access Permit(s)	Required to construct driveway access/approach to state-owned roadway ROW.	To be obtained prior to construction or alteration of access/approach within state roadway ROW, if needed.
	Temporary Modification Permits	Required for temporary modifications to state-owned ROW.	To be obtained prior to temporary modifications within state roadway ROW subject to permit, if needed.

Administering Agency	Permit, Approval, or Consultation	Applicability for Project	Status
North Dakota State Electrical Board	Wiring Certificate and Inspection Approval	Required for installation of electrical facilities.	To be obtained prior to activity subject to permit.
North Dakota State Historic Preservation Office (SHPO) / State Historical Society of North Dakota (SHSND)	Cultural and Historic Resources Review, Review of State and National Registers of Historic Sites, and Archaeological Survey	Consultation required in connection with other agency permitting requirements, such as the Commission.	Class I Architectural/Archeological Literature Review, Class II Architectural Inventory, and III Archeological Inventory surveys have been completed for the Project expansion area and reports submitted to the SHPO in Q1 2024.
Local Approvals			
Logan County	Wind Energy Facility Siting Permit / Conditional Use Permit	Required for construction of a wind energy facility within Logan County.	Wind energy facility siting permit / conditional use permit obtained May 11, 2022; a new application was submitted on December 6, 2023 for the current Project and a new permit is expected to be issued in Q1 2024.
	Building Permit(s)	Required to erect, construct, make structural changes, or move any structure.	If needed, to be obtained prior to construction of structures.
	Certificate(s) of Compliance	May be required in connection with building permits.	If needed, to be obtained in connection with the building permit.
	Utility Permit(s)	Required to install electrical lines on/across county road ROW.	If needed, to be obtained prior to crossing and/or installation of electrical lines in county road ROW.
	Approach/Driveway Permit(s)	May be required for the installation of approaches/driveways abutting county road ROW.	If needed, to be obtained prior to installation of approaches.

Administering Agency	Permit, Approval, or Consultation	Applicability for Project	Status
	Oversize/Overweight Permit	Transportation of oversize/overweight loads.	If needed, to be obtained prior to transporting oversize/overweight loads.
McIntosh County	Oversize/Overweight Permit	Transportation of oversize/overweight loads.	If needed, to be obtained prior to transporting oversize/overweight loads.
Township(s)	Utility Permit(s)	Installation of facilities in/across township road ROW.	If needed, to be obtained prior to crossing and/or installation of facilities in township road ROW.
	Driveway/Approach Permit(s)	Installation of approaches abutting township road ROW.	If needed, to be obtained prior to installation of approaches.
	Oversize/Overweight Permit	May be required for transportation of oversize/overweight loads.	If needed, to be obtained prior to transporting oversize/overweight loads.
Water Resource District(s) (WRD)	Utility Permit(s)	May be required to cross WRD-owned ROW and infrastructure.	If needed, to be obtained prior to installation of electrical lines across WRD-owned ROW and infrastructure.
Local Public Health Unit (Central Valley Health District)	Septic system permit/approval	May be required for installation of septic system (O&M facility).	If needed, to be obtained prior to construction of the septic system.
Existing Infrastructure Owner(s)	Crossing License(s)/Permit(s)	May be required to cross existing easements (e.g., railroad ROW).	If needed, to be obtained prior to crossing existing infrastructure and easements

8. COMPLIANCE WITH NDCC SECTION 49-22-09 FACTORS

As discussed below, based on analysis of the factors in NDCC Section 49-22-09, the Project site meets the conditions upon which the CSC was issued.

8.1. Public Health, Welfare, Natural Resources, and the Environment

Section 8 of the 2022 CSC Application (see summary in **Section 6.17: Summary of Impacts and Avoidance/Minimization Measures**) and this Application discuss the research and investigations relating to the potential effects of the Project on public health and welfare, natural resources, and the environment, as well as the proposed mitigation measures to avoid or minimize effects.

8.2. Minimizing Adverse Environmental Effects

As indicated in Section 8.2 of the 2022 CSC Application, Badger Wind will utilize the most recent technologies to optimize utilization of wind resources and minimize impacts to the environment.

8.3. Potential for Beneficial Uses of Waste Energy

Wind energy generation does not produce waste energy. Therefore, the Project does not have the potential for beneficial use of waste energy.

8.4. Unavoidable Adverse Environmental Effects

The unavoidable adverse environmental effects remain the same as set forth in Section 8.4 of the 2022 CSC Application. See also Section **4: Description of Proposed Facility** for an updated discussion of the maximum estimated temporary and permanent impacts for Project facilities.

8.5. Alternatives to the Proposed Site

The analysis of alternatives to the proposed site remains the same as set forth in Section 8.5 of the 2022 CSC Application.

8.6. Irreversible and Irretrievable Commitments of Natural Resources

The irreversible and irretrievable commitments of natural resources remain the same as set forth in Section 8.6 of the 2022 CSC Application.

8.7. Direct and Indirect Economic Impacts

As discussed in Section 8.7 of the 2022 CSC Application, direct economic impacts resulting from development of the Project will be primarily positive. The Project will result in conversion of land use during the life of the Project; however, the majority of the Project Area will remain available for agricultural uses, and participating landowners will be financially compensated for land occupied by wind turbines and associated infrastructure.

Additionally, as discussed in Section 8.7 of the 2022 CSC Application, the Project may also indirectly benefit economies in the surrounding area due to the wages and salaries paid to locally hired workers and increased spending at local businesses. Long-term benefits to the tax bases of Logan and McIntosh Counties resulting from the Project will improve the local economy.

8.8. Existing Development Plans of the State, Local Government, and Private Entities at or in the Vicinity of the Site

The Project is not anticipated to conflict with the existing plans of state, local, or private entities within the Project Area. Badger Wind will obtain a new wind energy facility siting permit/conditional use permit from Logan County. Additionally, Badger Wind has continued to coordinate with the Wishek Municipal Airport regarding the current Project; to-date, the Wishek Municipal Airport has not indicated any concerns with the current Project layout.

8.9. Effect of Site on Cultural Resources

Badger Wind has conducted cultural resource field surveys for the previous and current Project Area and Project layout (which includes the locations of 103 turbines for the current Project layout). The current Project layout avoids the seven unevaluated archaeological sites and two archaeological Site Leads previously identified. The 2023 cultural resource field surveys for the unsurveyed areas of the current Project Area identified one new archaeological site (32LO174) and one new prehistoric isolated find (32LOX76). These resources are recommended not eligible for inclusion in the NRHP. Badger Wind will provide the Commission with the SHSND's concurrences once they are received. Project infrastructure has been sited to avoid sensitive cultural and historic architectural resources that have been identified and recommended for avoidance in the Project's Class I, II, and III cultural resources inventories.

Badger Wind continues to coordinate with the SHSND on archaeological and architectural resources. Additionally, Badger Wind will complete cultural resources surveys on any unsurveyed portions of the Project layout, will report the findings to the SHSND, and will obtain and provide the Commission with the SHSND's concurrence prior to constructing in those areas. If additional cultural resources are discovered, Badger Wind will work with SHSND to avoid or mitigate impacts. Badger Wind has also prepared an Unanticipated Discoveries Plan.

8.10. Effect of Site on Biological Resources

The Project has minimal adverse impacts to biological resources. Extensive efforts to avoid or minimize impacts to biological resources have been made in siting the Project, and efforts will continue during project construction and operation. The Project continues to be designed to minimize impacts to wildlife. With respect to wildlife, Badger Wind plans to implement the measures outlined in Section 6.15.2 of the 2022 CSC Application and in **Section 6: Updated Environmental Analysis** above to avoid or minimize impacts. Badger Wind has developed an updated BBCS in coordination with USFWS and NDGF that outlines specific mitigation measures that have been implemented during Project siting and design, or that are planned to be

implemented during construction and operation of the Project, to avoid and minimize potential impacts to wildlife (refer to **Appendix H: Updated Bird and Bat Conservation Strategy**).

9. AGENCY COMMENTS

Since the issuance of the CSC, Badger Wind has continued to coordinate with county, state and federal agencies regarding the Project.

In December 2023, Badger Wind sent updated Project notification letters to 36 federal, state, and local agencies, including agencies and officers listed on NDAC Section 69-06-01-05. The notification letters included a description of the updated Project and a map of the current Project Area. The following sections summarize agency coordination efforts since the CSC was issued, organized by agency. A list of agencies consulted and copies of agency correspondence are provided in **Appendix D: Agency Correspondence Since CSC Issuance**.

9.1. U.S. Army Corps of Engineers, North Dakota Regulatory Office

Badger Wind contacted the Bismarck USACE Regulatory Office on December 19, 2023 to advise of the updated Project layout and to request guidance on applicable permitting requirements.

On December 29, 2023, the USACE responded to the Project notification letter stating the Project may need a CWA Section 404 permit. Badger Wind anticipates that impacts to USACE jurisdictional waters will be primarily temporary and permitted under the Nationwide Permit program.

9.2. Department of Defense

The DoD performed an informal review through the DoD Clearinghouse of the Project on January 26, 2024 and noted that the Project will have minimal impact on military operations conducted in the area. Badger Wind anticipates the DoD will also comment through the FAA permit process.

9.3. Wildlife Agencies (U.S. Fish and Wildlife Service, North Dakota Field Office, and North Dakota Game and Fish)

Badger Wind continued coordinating with the USFWS NDGF regarding the updated Project in the summer of 2023. Meetings and iterative reviews of Project information with the USFWS and NDGF helped to confirm appropriate resource surveys and protocols for the updated Project, as well as measures to avoid, minimize, and monitor potential impacts and incorporate adaptive management strategies. Copies of correspondence with the USFWS and NDGF since the CSC was issued are provided in **Appendix D: Agency Correspondence Since CSC Issuance**. Significant meetings and communications are summarized below.

9.3.1. June 29, 2023 North Dakota Game and Fish Department Meeting

Badger Wind met with NDGF to provide information regarding the status of development and updates to the Project, including the updated Project Area and layout changes. Badger Wind and NDGF discussed potential additional studies and surveys, as well as next steps in assessment of the Project's potential impacts to grassland and relevant turbine siting considerations. Badger

Wind and NDGF discussed continued placement of turbines on tilled land within two mi of a lek (see Plains Sharp-Tailed Grouse Conservation Strategy, Hearing Exhibit No. 10).

NDGF recommended that Badger Wind reach out to USFWs regarding potential surveys for federal species of concern. NDGF and Badger Wind discussed voluntary offsets. NDGF requested another meeting with USFWS and NDGF after impact analyses are complete.

9.3.2. August 15, 2023 North Dakota U.S. Fish and Wildlife Service and North Dakota Game and Fish Department Meeting

Badger Wind met with USFWS and NDGF to discuss the updates to the Project, including the expanded Project Area and layout changes. Badger Wind and the agencies also discussed potential additional surveys and federally protected species. NDGF requested to review the Eagle Conservation Plan/Eagle Management Plan (ECP/EMP) as soon as it becomes available. Badger Wind also noted that it will update the BBCS and provide the updated version to the agencies. Badger Wind and the agencies also discussed avoidance of unbroken grasslands, and potential voluntary offsets.

9.3.3. January 24, 2024 U.S. Fish and Wildlife Service Meeting

Badger Wind met with the USFWS Kulm Wetland Management District to discuss the Project and coordinate regarding USFWS wetland and grassland easements within the Project Area. Badger Wind and USFWS discussed potential temporary disturbances to USFWS grassland and/or wetland easements, and associated regulatory requirements. Badger Wind and USFWS discussed that Badger Wind would notify USFWS prior to construction for activities on parcels with USFWS easements for which a permit from USFWS is not required, such as boring under a grassland easement or activities on parcels where Badger Wind obtained its lease agreement(s) prior to USFWS obtaining its easement(s).

9.3.4. January 30, 2024 U.S. Fish and Wildlife Service, North Dakota Game and Fish, and North Dakota Department of Agriculture Meeting

Badger Wind met with the USFWS, NDGF, and North Dakota Department of Agriculture (NDDA) to discuss the Project and offset calculations. NDGF stated they accepts Badger Wind's impact calculation as accurate. Badger Wind confirmed a final impact calculation will be completed prior to construction and will be compared to the impact calculation provided during the meeting. NDDA stated that a Memorandum of Understanding (MOU) will include the mitigations Badger Wind commits to and this MOU can be included in the BBCS.

9.4. North Dakota Department of Environmental Quality

The NDDEQ responded to the updated Project notification letter on January 17, 2024. The NDDEQ provided guidelines for dust control, minimizing degradation to waterways during construction, preventing spills, and the appropriate disposal of solid waste materials. Additionally, NDDEQ stated that they have no projects scheduled in the area and do not own any land within the

Project Area. The NDDEQ stated that a permit for discharging stormwater runoff may be needed if the Project plans to disturb more than one acre. Badger Wind will obtain coverage under and construct the Project in compliance with the requirements of the NDPDES General Stormwater Permit.

9.5. North Dakota Department of Agriculture

9.5.1. December 28, 2023 North Dakota Department of Agriculture

On December 28, 2023, the NDDA responded to the updated Project notification letter sent on December 19, 2023. The NDDA advised of the new environmental mitigation program within the NDDA enacted July 1, 2023. Badger Wind will coordinate with the NDDA on voluntary mitigation program requirements, as applicable.

9.5.2. January 24, 2024 North Dakota Department of Agriculture meeting

Badger Wind met with NDDA to discuss the Project and Badger Wind's proposed voluntary offset payment amounts and structure. NDDA indicated the payment amounts provided are likely acceptable and that it will review the potential payment schedule. Badger Wind and NDDA will continue to work together to complete the MOU in an expedited manner. NDDA noted it would like NDGF to comment on the final draft of the MOU.

9.6. North Dakota Department of Water Resources

The ND DWR responded to the updated Project notification letter on January 19, 2024. ND DWR discussed that floodplain mapping is in progress. If areas within the Project Area are identified as floodplains within the final FEMA Flood Insurance Rate Maps, Badger Wind will coordinate with Logan County regarding floodplain permitting, if applicable. The ND DWR also discussed potential water appropriation and/or drainage permitting requirements. The ND DWR stated that it maintains wells across the state for monitoring water levels and quality in glacial and bedrock aquifers and asked to be contacted if an observation well is encountered during Project activities and must be removed. The Project layout avoids impacts to observation wells; therefore, Badger Wind does not anticipate that ND DWR well permits will be needed.

9.7. North Dakota Parks and Recreation

The NDPR responded to the updated Project notification letter on January 10, 2024. NPDR noted that the Project does not appear to affect properties that NDPR owns, leases, or manages or any properties protected under Section 6(f) of the Land and Water Conservation Fund. Additionally, NDPR indicated that no known rare species or significant ecological communities are documented within or immediately adjacent to the Project Area.

9.8. North Dakota Geological Survey

The NDGS responded to the updated Project notification letter on January 9, 2024, noting that there are no geological concerns with the proposed current Project Area.

9.9. Logan County

On June 27, 2022, Badger Wind executed the road use agreement with Logan County.

On June 7, 2023, Badger Wind attended the Logan County Board of Commissioners meeting. Badger Wind has continued coordinating with Logan County regarding the Project updates. Based on communications with Logan County regarding the updated Project, Logan County requested that Badger Wind file an application for a new wind energy facility siting permit / conditional use permit. Badger Wind filed its application in December 2023, and a public hearing was held on February 14, 2024. Badger Wind anticipates Logan County will issue a new wind energy facility siting permit / conditional use permit in Q1 2024.

9.10. McIntosh County

On March 24, 2022, Badger Wind executed the road use agreement with McIntosh County.

On June 7, 2023, Badger Wind attended the McIntosh County Commission Board Meeting. Badger Wind updated the commission on the progress of the Project. Badger Wind presented the county commission with maps of the updated Project, including the updated turbine layout. Badger Wind provided an update on its anticipated construction schedule. Additionally, on August 29, 2023, McIntosh County confirmed that the Project will not require any zoning permits/approvals from McIntosh County.

9.11. Wishek Airport

Badger Wind has continued to coordinate with the Wishek Municipal Airport regarding the current Project layout. In August – November 2023, Badger Wind consulted with the Wishek Municipal Airport to discuss the current Project layout. On November 17, 2023, Badger Wind had a phone call with the Wishek Municipal Airport during which Badger Wind showed the current Project layout, and the Wishek Municipal Airport confirmed it does not have any concerns with the current Project layout.

9.12. Community Outreach

In 2023, Badger Wind donated funds in support of improvement projects at the Wishek Civic Center and Doyle Memorial Park, located in Wishek. Badger Wind is in active communication with the local communities to design additional sponsorship and donation programs that ensure broader access to the benefits of a wind farm, which will be put in place near the time of construction.

10. REFERENCES

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