

Brady II Wind Energy Center—Hettinger and Stark Counties, North Dakota



Wetlands and Other Waters of the United States Determination Report

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1. Introduction

This report describes the results of determinations for wetlands and other waters of the United States (WoUS) performed in support of the Brady II Wind Energy Center (proposed Project). Field surveys were completed November 2015 through April 2016.

Presented in this report are descriptions of the methodology, results, and conclusions of wetland and other WoUS determinations and stream identification activities completed through April 8, 2016. Brady Wind II, LLC ("Brady Wind II") has surveyed wetlands and streams in the Project Area (**Figure 1**) identified for placement of permanent infrastructure based on the turbine locations identified as of the date of this filing. Brady Wind II does not expect material shifts in permanent infrastructure at this time. However, Brady Wind II may need to survey additional areas in the event that the company makes changes to the final design, which would be primarily to avoid temporary impacts to wetland and archeological features to further enact an avoidance strategy. Because Brady Wind II has committed to avoiding and minimizing impacts to potential jurisdictional features, if any additional features are determined to be located in the previously un-surveyed areas, the proposed Project design will be revised to avoid and minimize impacts to these features.

1.1 Project Description and Location

Brady Wind II, a wholly-owned, indirect subsidiary of NextEra Energy Resources, LLC (NEER), is proposing to construct the proposed Project in northern Hettinger County and southern Stark County, North Dakota. The proposed Project is adjacent to the southern boundary of the proposed Brady Wind Energy Center.

The 27,264-acre Study Area (**Figure 1**) was identified as an area in which NEER was considering siting Project facilities. The 20,317-acre proposed Project Area (**Figures 1 and 2**) is defined as the location within which Brady Wind II has negotiated easements with landowners. The wetlands and water investigations that took place in the Study Area included previous iterations of Project facilities locations, as well as the current proposed Project Area.

1.2 Ecoregional Setting

The proposed Project is located entirely in the Northwestern Great Plains Missouri Plateau Level III ecoregion of North Dakota (Chapman et al. 2001). Characteristic physiography in this region includes rolling plains with isolated sandstone buttes. Vegetation communities in this region are mainly composed of short prairie grasses with very few trees. The predominant land use in the proposed Project Area consists of agricultural fields and pastureland, along with riparian areas dominated by cottonwood woodland. Tributary streams in the Study Area drain north to the Heart River.

1.3 Regulatory Setting

1.3.1 Federal Regulations

All discharges of dredged or fill material into jurisdictional WoUS, that result in permanent or temporary losses of WoUS, are regulated by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA). The USACE regulates projects in navigable waters under Section 10 of the Rivers and Harbors Act.

Under USACE and U.S. Environmental Protection Agency (EPA) regulations, wetlands are defined as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” In non-tidal waters, the lateral extent of USACE jurisdiction is determined by the ordinary high water mark (OHWM), which is defined as the “line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas” (33 Code of Federal Regulations [CFR] 328[e]).

Permanent impacts to jurisdictional features exceeding 0.1 acre would likely require a pre-construction notification (PCN) and an approved jurisdictional determination (JD) by the USACE. Brady Wind II has committed to avoiding or minimizing impacts to potentially jurisdictional features to avoid the need for a PCN from the USACE. If impacts to jurisdictional waters cannot be avoided, the Project will require permitting under the CWA § 404 program administered by USACE. The North Dakota USACE office recommends consultation on wind farm projects that may exceed these thresholds to determine the need and/or type of permitting.

1.3.2 New CWA Rule

The State of North Dakota is currently involved in litigation concerning the new CWA rule that went into effect August 28, 2015. In lieu of the decision on the new rule, as it may be resolved in North Dakota, the USACE will default to the preexisting definition for “waters of the United States” under Section 404 of the CWA (33 CFR 328.3[a]), as follows:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or

natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:

- i. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
 - ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - iii. Which are used or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States under the definition;
 5. Tributaries of waters identified in paragraphs (a)(1)-(4) of this section;
 6. The territorial seas;
 7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a)(1)(6) of this section.
 8. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with the U.S. Environmental Protection Agency. Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 123.11[m] which also meet the criteria of this definition) are not waters of the United States.

A comparison of the CWA's old rule, proposed new rule, and final new rule is provided in **Table 1**.

With respect to the CWA and the types of jurisdictional wetlands and other WoUS defined in the existing old rule, proposed new rule, and final new rule (**Table 1**), Brady Wind II is taking a conservative approach and will avoid, to the greatest extent practicable, permanently impacting potentially jurisdictional wetlands and other WoUS.

1.3.3 State Regulations

The North Dakota State Water Commission—Office of the State Engineer (Commission) is the regulatory body that permits actions in wetlands in the state of North Dakota. The Commission issues three types of permits: a *Drain Permit*, a *Wetland Restoration Permit*, and a *Wetland Creation Permit*. The state does not have a permit requirement for fill placed in a wetland.

Table 1. Comparison of Old, Proposed New, and Final New CWA Rule

Subject	Old Rule	Proposed Rule	New Rule (Under Injunction)
Navigable Waters	Jurisdictional	Jurisdictional	Jurisdictional
Interstate Waters	Jurisdictional	Jurisdictional	Jurisdictional
Territorial Seas	Jurisdictional	Jurisdictional	Jurisdictional
Impoundments	Jurisdictional	Jurisdictional	Jurisdictional
Tributaries to Traditional Navigable Waters	Did not define tributary.	Defined tributary for the first time as water features with bed, banks and OHWM, and flow downstream.	Same as proposal except wetlands and open waters without beds, banks and OHWM marks will be evaluated for adjacency.
Adjacent Wetlands/Water	Included wetlands adjacent to traditional navigable waters, interstate waters, the territorial seas, impoundments, or tributaries.	Included all waters adjacent to jurisdictional waters, including waters in riparian area or floodplain or with surface or shallow subsurface connection to jurisdictional waters.	Includes waters adjacent to jurisdictional waters within a minimum of 100 feet and within the 100-year floodplain to a maximum of 1,500-feet of the OHWM.
Isolated or "Other" Waters	Included all other waters the use, degradation or destruction of which could affect interstate or foreign commerce.	Included "other waters" where there was a significant nexus to traditionally navigable water, interstate water or territorial sea.	Includes specific waters that are similarly situated: prairie potholes, Carolina and Delmarva bays, pocosins, western vernal pools in California, and Texas coastal prairie wetlands when they have a significant nexus. Includes waters with a significant nexus within the 100-year floodplain of a traditional navigable water, interstate water, or the territorial seas as well as waters with a significant nexus within 4,000 feet of jurisdictional waters.
Exclusions to the definition of "Waters of the US"	Excluded waste treatment systems and prior converted cropland.	Categorically excluded those in old rule and added two types of ditches, groundwater, gullies, rills and non-wetland swales.	Includes proposed rule exclusions, expands exclusion for ditches, and also excludes constructed components for Municipal Separate Storm Water Sewer System (MS4s) and water delivery/reuse and erosional features.

Source: EPA (2015)

A Drain Permit is issued for projects that drain ponds, sloughs, lakes, wetlands, or any similar series that has a watershed greater than 80 acres. A Wetland Restoration Permit is required for projects that restore wetlands less than the size of the original wetland. A Wetland Creation Permit is required for projects creating wetlands capable of storing more than 25 acre-feet of water.

The proposed Project does not meet the criteria for any of these three permits. Therefore, no state permit for wetlands is required for the proposed Project.

2. Wetland Determination Methods

The following sections briefly describe the methods used for this series of wetland determinations.

2.1 Desktop Methodology

Tetra Tech conducted a desktop analysis of the Study Area to identify potential jurisdictional WoUS. Desktop analysis used the following sources of information, as described in this section.

The U.S. Fish and Wildlife Service online *Wetlands Mapper* tool (USFWS 2015) depicts mapped wetlands as part of the National Wetland Inventory (NWI) Program. The NWI dataset identified 191 wetlands in the Study Area. These NWI wetland polygons situated in the Study Area are depicted in **Figure 3: Sheet Maps 1–18 of Appendix 1**.

The U.S. Geological Survey produces the National Hydrography Dataset (NHD) that identifies perennial and intermittent streams, ponds, and lakes. The online database *NHD Viewer* tool (USGS 2015a) was queried for the Study Area. The query found 376 NHD features in the Study Area. Ninety-nine of these features were identified as waterbodies (ponds, lakes, and impoundments), 192 were intermittent streams, and there were 85 artificial paths (man-made water ways) in the Study Area. No perennial stream features were identified in the Study Area. The USGS also is responsible for topographic mapping. The field team used topographic maps (USGS 2015b) during the field work to enhance the ability to identify and delineate probable surface water sites, including streams, ponds, and reservoirs, located near proposed Project infrastructure. Wetland scientists delineated some wetlands and streams within the proposed Project Area that were relatively far removed from (i.e., outside the current construction easement), but in the general vicinity of the proposed Project to provide flexibility for potential design changes in the location of Project infrastructure.

The U.S. Department of Agriculture Natural Resources Conservation Service is the source for hydric soils information. These data are available online via the *Web Soil Survey* tool (USDA-NRCS 2015). Data were obtained for the Study Area and were used to cross-check against field sites that were initially observed to exhibit wetland or surface water conditions. Hydric soils were identified in the Study Area associated with NWI- and NHD-mapped features. Additionally, the Web Soil Survey was queried for drainage class across the Study Area. No soils with a classification of poorly drained were documented for the Study Area.

The U.S. Department of Agriculture-Farm Service Bureau (2015) produces current high-quality aerial photography through the National Agricultural Imagery Program. This aerial photography was used to further refine the field determinations for wetlands and other surface waterbodies within the Study Area.

2.2 Desktop Results

The desktop analysis identified where the proposed locations of Project features (turbines, collector lines, service roads, or transmission line poles) intersected wetlands or other WoUS features. Remote sensing data are not precise, however, and Tetra Tech wetland scientists determined that a field reconnaissance was required to determine the precise locations and boundaries of wetlands and other WoUS located in the Study Area.

2.3 Floodplains

A desktop analysis of mapped floodplains was conducted for the proposed Project. Floodplains in the Study Area generally occur along historical intermittent stream features that are tributaries to Antelope Creek, the Cannonball River and Thirtymile Creek. A 100-year floodplain is defined as the area that will be inundated by a flood event having a 1 percent chance of occurring in any given year.

Based on the current proposed Project layout, two service roads and two underground electrical collection lines cross 100-year floodplains in Hettinger and Stark counties. In Hettinger County, two service roads and one underground electrical collection lines cross floodplains. The service road that accesses Turbine 35 from the north crosses a floodplain would result in an estimated 0.030 acre of permanent impact. The service road to Turbine 50 from the north crosses a floodplain would result in an estimated 0.058 acre of permanent impacts and 0.180 acre of temporary impact. The electrical collection line that accesses Turbine 54 from the south crosses a floodplain would result in an estimated 0.75 acre of temporary impact. One underground electrical collection line crosses floodplains in Stark County. The electrical collection line that runs east from Turbine 24 crosses a floodplain would result in an estimated 0.69 acre of temporary impact.

Both Hettinger and Stark counties require Floodplain Permits for temporary or permanent impacts to floodplains. Based on Tetra Tech experience in Stark County, Tetra Tech estimates three permits would be required for these potential impacts. One for the temporary impacts in Stark County and two (one for permanent impacts and one for temporary impacts) for Hettinger County.

2.4 Turbine Micrositing

Tetra Tech wetland scientists participated in a site visit with a Project team consisting of engineers, land surveyors, and cultural resource specialists to determine the optimal locations for wind turbines within the Study Area. The objective of the micrositing was to identify areas that may have adverse impacts to sensitive environmental areas including wetlands and other WoUS. Where possible, wind turbines were re-located or eliminated during the micrositing process to avoid impacts to wetlands or other WoUS.

2.5 Wetland Determinations

Field determinations for the proposed Project were performed from November 2015 through April 2016. A discussion of wetland determination methodology is provided in the next subsection. The determinations were conducted in areas where proposed Project infrastructure intersected potential wetland areas identified during the desktop analysis. The delineated areas included the construction easements associated with the proposed Project infrastructure and some additional areas outside the current construction easement to allow for flexibility in potentially relocating infrastructure. **Table 2** below provides the surveyed areas by infrastructure type.

Table 2. Proposed Project Impact Assumptions

Project Component	Temporary Construction Disturbance	Permanent Disturbance (Operation)
Wind Turbines ^a	4.5 acres per turbine	0.2 acre per turbine
Service Roads ^b	50 feet wide per linear foot of road	16 feet wide per linear foot of road
Collection Lines ^c	50 feet wide per linear foot	12 feet x 8 feet for each junction box

- a Construction impacts assumed a 250-foot construction radius around the turbine, which equates to approximately 4.5 acres per turbine. Impacts during operation account for a 40-foot x 100-foot gravel pad with a 15-foot buffer, or 0.2 acres per turbine.
- b Easement width necessary for construction based on turbine types. Temporary and permanent impacts represent a conservative estimate of disturbance. Roads required to support crane access to turbines during operation would remain up to 34 feet wide; other service roads may be built at 16 feet or reduced later to 16 feet. Service road impacts also assume all proposed roads are new service roads and do not consider improvements to existing roads separately.
- c Where collection lines run parallel to service roads, the respective impact buffers generally do not overlap.

2.5.1 Wetland Determination Methodology

Wetland determinations for the proposed Project follow the methodology contained in the USACE *Wetland Delineation Manual* (USACE 1987) and the *Regional Supplement to the USACE Wetland Delineation Manual: Great Plains Region (Version 2.0)* (USACE 2010) as closely as possible. Tetra Tech conservatively mapped the wetlands to ensure the proposed Project would remain below the PCN permitting thresholds. Since the surveys were conducted outside of the growing season limited vegetation was present. Soils pits to establish hydric soils and hydrology were dug when possible, but often times, the surveyors relied on available vegetation, topography, and visible signs of hydric soils and hydrology when available. The determination process was utilized to document dominant vegetation, soils, and hydrology in areas of interest (i.e., areas with potential intersections between proposed Project infrastructure and potential wetland ecosystems). For a site to be considered a wetland, there must be positive indication of dominance by hydrophytic vegetation, hydric soils, and characteristic wetland hydrology. In normal conditions, if a sample plot lacks any of these three criteria, it is considered upland. To determine these three variables, the field team, when conditions permitted, typically designated paired sample plots, placed at discrete (typically less than 25 feet) distances from one another—one to represent wetland conditions, the other to represent uplands. Observations of vegetation

and hydrology for each wetland identified during the survey were documented in a field notebook that is on record at the Tetra Tech office in Golden, Colorado.

2.5.1.1 Hydrophytic Vegetation

When available, the dominant vegetation at each sample plot was keyed to species level and each species was assigned a wetland indicator status using *The National Wetland Plant List* (Lichvar 2014). The field team used the *Flora of the Great Plains* (McGregor 1986), supplemented by the *Handbook of North Dakota Plants* (Stevens 1963) as the field taxonomic references for keying unknown plant species.

Hydrophytic vegetation, or plants that are indicators of wetlands, include those species designated obligate (OBL), facultative wetland (FACW), or facultative (FAC). As a general rule, hydrophytes dominate a sample plot when greater than 50 percent of the evaluated species are OBL, FACW, or FAC. Upland plants include those listed with facultative upland (FACU) or upland (UPL) status. **Table 3** provides descriptions of these indicators.

Table 3. Wetland Indicator Status

Indicator Status	Occurrence in Wetlands
OBL	Almost always occur in wetlands under natural conditions (estimated probability >99%).
FACW	Usually occur in wetlands (estimated probability 67%–99%), but occasionally found in non-wetlands (estimated probability 1%–33%).
FAC	Equally likely to occur in wetlands or non-wetlands (estimated probability 34%–66%).
FACU	Usually occur in non-wetlands (estimated probability 67%–99%), but occasionally found in wetlands (estimated probability 1%–33%).
UPL	Almost always occur in non-wetlands under natural conditions (estimated probability >99%).
Not Listed (NL)	Not Listed plants are assumed to be UPL as defined in the user notes for the 2014 Great Plains Regional Plant List.

2.5.1.2 Cowardin Classification

Wetlands were classified according to *Classification of Wetlands and Deepwater Habitats in the United States* (Cowardin et al. 1979) during the field survey. The classification system, also known as the Cowardin Classification, was developed as a tool to aid in distinguishing the different types of wetlands. Wetlands found in the Study Area were all identified as palustrine (non-tidal) emergent wetlands. Emergent wetlands consist of erect and rooted wetland plants.

2.5.1.3 Wetland Soils

Soil from each soil pit was evaluated for hue, value, and chroma in each observable horizon using *Munsell Soil Color Charts* (Gretag/Macbeth 2009). Each soil horizon was also checked for texture

and for the presence of redoximorphic features, depleted matrix, saturation, and other specific criteria used to document hydric conditions. Each paired wetland and upland soil pit was mapped using a Trimble Geo 7X handheld global positioning system (GPS) with sub-meter accuracy.

2.5.1.4 Wetland Hydrology

Hydrology was analyzed for primary and secondary wetland indicators. Primary wetland indicators included visible inundation, soil saturation, water marks, drift lines, sediment deposits, and drainage patterns in wetlands. Secondary wetland indicators of wetland hydrology included observable features such as oxidized root channels associated with living roots, water-stained leaves, soil cracks, and local soil survey data. Once established, the soil pits were left open a sufficient amount of time to allow the apparent high water table, if present, to stabilize.

2.5.1.5 Wetland Mapping

Wetland determinations were conducted to identify the transitional area between wetland and upland conditions. Wetland scientists accomplished the determinations by walking the outer limit of visibly identifiable wetland vegetation between the paired wetland and upland sample plots and recording the path with a Trimble Geo 7X GPS. The Trimble Geo 7X GPS unit provides sub-meter survey accuracy (post-processing). The field-collected data were plotted as a map layer using geographic information system software. Photographs of select wetlands are provided in the photo log included as **Appendix 2**.

2.6 Assessment of Other WoUS

Non-wetland WoUS are regulated under the CWA for the placement of dredged or fill materials. The desktop analysis and field surveys identified other WoUS including ephemeral, intermittent, and perennial streams and ponds.

2.6.1 Surface Water Assessment Methodology

Stream and pond features were mapped along their OHWMs. The USACE regulations define "ordinary high water mark" as:

... that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Once the OHWM was observed in the field by the team, the Trimble Geo 7X GPS unit was used to map this line where it would be crossed by planned elements of proposed Project infrastructure. For streams, a data form was completed in the field documenting stream ID, date of survey, investigators names, channel features, flow characteristics, substrate description, watershed features, the presence of aquatic vegetation and macroinvertebrates.

3. Wetlands and Other WoUS Determination Results

3.1 Wetlands Impacted by Proposed Project Infrastructure

Thirty-seven wetlands were identified in the Study Area. Of these delineated wetlands, four would be impacted by currently planned project infrastructure. Narratives including the dominant wetland vegetation along with its indicator status, hydric soil indicator, and hydrology indicator for these delineated wetlands are provided below. The remaining 33 wetlands would not be impacted but were delineated to document their locations in case the Project design changes in the future. Wetlands that were delineated, but which are currently not being impacted by the proposed Project are summarized in **Table 4**, including the likely jurisdictional status and the approximate acreage of each feature.

3.1.1 Wetland 3H

Wetland 3H intersects an electrical collection line and service road approximately 470 feet east of Turbine 3. Vegetation in the wetland plot was dominated by prairie cordgrass (*Spartina pectinata*, FACW), reed canarygrass (*Phalaris arundinacea*, FACW), and Baltic rush (*Juncus balticus*, FACW). The upper 12 inches of the soil from the wetland soil test pit met the *Depleted Dark Surface* (F7) and *Redox Dark Surface* (F6) hydric soil indicators. Several hydrology indicators were present in the plot and included presence of surface water (A1), saturation within the upper 12 inches (A3), and oxidized rhizospheres on living roots (C3). The delineated wetland area is adjacent to an NWI-mapped wetland and follows a mapped NHD wetland. Therefore, this wetland likely meets the definition of a jurisdictional WoUS. Proposed Project impacts resulting from the development of the service road include 0.012 acre of permanent impact and 0.06 acre of temporary impact.

3.1.2 Wetland 7H

Wetland 7H is located along the service road to Turbine 30 and intersects an electrical collection line and a portion of the service road. Vegetation in the wetland sample plot was dominated by prairie cordgrass. Soils in the wetland soil test pit were silt loams that qualified for the hydric soil indicator *Redox Dark Surface* (F6). Saturation was present in the upper 12 inches and an agal mat was present on portions of the wetland surface. The feature is a historical stream channel, mapped by NHD that connects to the Cannonball River. Therefore, this wetland likely meets the definition of a jurisdictional WoUS. Proposed Project impacts resulting from the development of the service road include 0.017 acre of temporary impact. Brady Wind II has committed to minimizing impacts to wetlands and is boring the electrical collection line under the feature to avoid additional permanent and temporary impacts to this area of the wetland.

3.1.3 Wetland 10I

Wetland 10I is located along the service road between Turbine 62 and 67 and intersects an electrical collection line and a portion of the service road. The vegetation community was dominated by prairie cordgrass. Soils in the wetland soil test pit were silty clays that were consistent with the hydric soil indicator *Redox Dark Surface* (F6). The wetland had a water table at 10 inches and was saturated at a depth of 9 inches below ground surface. Additionally, drainage patterns were present. This wetland is formed from a historical drainage feature that is mapped by NHD. The feature connects to downgradient streams features that flow into Cannonball River. Therefore, this wetland likely meets the definition of a jurisdictional WoUS. Proposed Project impacts resulting from the development of the service road include 0.016 acre of permanent impact and 0.070 acre of temporary impact. There are no anticipated impacts to the wetland resulting from the installation of the electrical collector line because Brady Wind II is planning to bore the wetland to minimize wetland impacts.

3.1.4 Wetland 1L

Wetland 1L is located east of Turbine 43 and intersects an electrical collection line and service road. The vegetation community was dominated by reed canarygrass. Soils in the wetland soil test pit were clay loams that were consistent with the hydric soil indicator *Redox Dark Surface* (F6). The wetland had a water table at 10 inches below ground surface and was saturated to the surface. Additionally, drainage patterns were present. The feature connects to downgradient streams features that flow into Cannonball River. Therefore, this wetland likely meets the definition of a jurisdictional WoUS. Proposed Project impacts resulting from the development of the service road include 0.088 acre of permanent impacts and 0.331 acre of temporary impacts. There are no anticipated impacts to the wetland resulting from the installation of the electrical collection line because Brady Wind II is planning to bore the wetland to minimize wetland impacts.

3.2 Wetlands Currently not Impacted by Proposed Project Infrastructure

The following table presents wetlands that were mapped during different design phases of the project and are either no longer intersected by current infrastructure design or are not anticipated to have temporary or permanent impacts resulting from proposed Project construction.

Table 4. Wetlands Currently not Impacted by Proposed Project Infrastructure

Wetland ID	Approximate Acres	Latitude	Longitude	Likely Jurisdictional Status ¹	Sheet Map Number	Project Infrastructure Surveyed Area
BR2-WT-1D	0.078	46.595583	-102.802129	Jurisdictional	6, 7	Outside survey area; no impacts
BR2-WT-2D	27.838	46.607188	-102.705244	Jurisdictional	14	Collector line; feature to be bored; no impacts
BR2-WT-3D	0.699	46.612596	-102.710767	Jurisdictional	13	Outside survey area; no impacts
BR2-WT-1E	0.021	46.625386	-102.755587	Jurisdictional	10	Outside survey area; no impacts
BR2-WT-2E	<0.001	46.618673	-102.757326	Non-jurisdictional	10	Outside survey area; no impacts

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Wetland ID	Approximate Acres	Latitude	Longitude	Likely Jurisdictional Status¹	Sheet Map Number	Project Infrastructure Surveyed Area
BR2-WT-3E	0.328	46.627198	-102.840091	Jurisdictional	3	Outside survey area; no impacts
BR2-WT-4E	0.242	46.628044	-102.838318	Jurisdictional	3	Outside survey area; no impacts
BR2-WT-1F	0.340	46.622244	-102.835501	Jurisdictional	3	Outside survey area; no impacts
BR2-WT-1G	0.074	46.586567	-102.697389	Jurisdictional	14	Outside survey area; no impacts
BR2-WT-2G	0.076	46.579698	-102.682781	Jurisdictional	17	In the construction easement; wetland will be flagged or fenced during construction; no impacts
BR2-WT-1H	0.507	46.611919	-102.919252	Jurisdictional	1	Collector line; feature to be bored; no impacts
BR2-WT-2H	0.254	46.612417	-102.917064	Non-jurisdictional	1	Outside survey area; no impacts
BR2-WT-4H	0.996	46.635738	-102.784270	Jurisdictional	13	Outside survey area; no impacts
BR2-WT-4H	0.650	46.620537	-102.690341	Jurisdictional	5, 9	Outside survey area; no impacts
BR2-WT-5H	13.595	46.606526	-102.690433	Jurisdictional	14, 16	Outside survey area; no impacts
BR2-WT-6H	3.496	46.608056	-102.692232	Jurisdictional	14, 16	Outside survey area; no impacts
BR2-WT-9H	25.233	46.604105	-102.697491	Jurisdictional	14	Collector line; feature to be bored; no impacts
BR2-WT-1I	0.349	46.621898	-102.804742	Jurisdictional	5, 6	Collector line; feature to be bored; no impacts
BR2-WT-2I	0.304	46.564123	-102.811714	Jurisdictional	8	Collector line; feature to be bored; no impacts
BR2-WT-3I	0.652	46.581104	-102.810507	Jurisdictional	7	Collector line; feature to be bored; no impacts
BR2-WT-4I	0.000	46.582849	-102.816843	Jurisdictional	7	Within the Turbine 31 temporary disturbance buffer; wetland will be flagged or fenced during construction; no impacts
BR2-WT-5I	0.149	46.592837	-102.790042	Jurisdictional	7	Collector line; feature to be bored; no impacts
BR2-WT-6I	0.012	46.609232	-102.786283	Jurisdictional	6, 10	Collector line; feature to be bored; no impacts
BR2-WT-7I	0.149	46.602798	-102.723462	Jurisdictional	14	Outside survey area; no impacts
BR2-WT-8I	0.335	46.615469	-102.701263	Jurisdictional	13	Outside survey area; no impacts
BR2-WT-9I	0.471	46.610154	-102.712120	Jurisdictional	13	Outside survey area; no impacts
BR2-WT-11I	0.138	46.584066	-102.690204	Jurisdictional	14, 15, 17	Collector line; feature to be bored; no impacts
BR2-WT-1J	0.181	46.601258	-102.698025	Jurisdictional	14	Collector line; feature to be bored; no impacts
BR2-WT-2J	0.075	46.585746	-102.676191	Jurisdictional	17	Outside survey area; no impacts
BR2-WT-3J	0.448	46.584099	-102.686806	Jurisdictional	14, 15, 17	In the construction easement; wetland will be flagged or fenced during construction; no impacts
BR2-WT-1K	0.013	46.608470	-102.790678	Jurisdictional	6	Collector line; feature to be bored; no impacts
BR2-WT-2K	0.011	46.601193	-102.728111	Jurisdictional	14	Outside survey area; no impacts
BR2-WT-3K	0.705	46.580601	-102.815495	Jurisdictional	7	Collector line; feature to be bored; no impacts
BR2-WT-1M	0.124	46.638057	-102.748771	Jurisdictional	9	Outside survey area; no impacts

¹ Note that only the USACE can render an approved JD. The likely jurisdictional status listed in Table 4 only reflect Tetra Tech's understanding of Jurisdictional WoUS. Without a USACE-rendered JD, impacts should be minimized or avoided to these wetlands. No material impacts are anticipated to the wetlands listed in this table regardless of likely Jurisdictional status, because the Project has been designed to avoid or minimize impacts.

3.3 Other WoUS Results

3.3.1 Streams

Wetland scientists mapped 11 streams within the proposed Project Area (**Table 5**). All of these streams were noted to be tributaries to streams that eventually flow into Cannonball River, and eventually into the Heart River, which is a traditional navigable water. Three of these streams are intersected by electrical collector lines. These intersections would be bored to avoid impacts to the features. One stream, Stream 1H would have approximately 0.007acre of permanent impacts from construction of a service road. This is below the 0.1 acre minimum reporting requirement for a PCN.

The flow regime of a stream describes how often it contains flowing water. Perennial streams contain flowing water throughout the year. Intermittent streams flow in response to both precipitation events and from spring sources; this flow is typically not year-long. Ephemeral streams flow only in response to precipitation events and, as such, they are more often dry than flowing. The bank-full width was measured as the average width of the stream where it was to be crossed by planned elements of the proposed Project infrastructure. Field notes for the streams recorded during the field reconnaissance are on file in the Tetra Tech Golden, Colorado office.

3.3.2 Ponds

Ten ponds were observed during field surveys (**Table 6**). These ponds were, or are, currently used in support of agricultural land. The likely jurisdictional status of each pond was determined based on connectivity to a stream feature that drains into a traditional navigable water. All 10 ponds were mapped outside of the temporary disturbance areas of any elements of proposed Project infrastructure.

3.4 Upland Features

3.4.1 Swales

Several swale features were observed during field reconnaissance. Swales are linear or curvilinear depressional features that naturally collect overland flows from surrounding uplands. Many of the swale locations that were mapped by the field team were initially investigated because the desktop analysis identified NHD-mapped intermittent and perennial streams at these locations. Upon field observation, the locations marked as swales were determined to lack defined beds, banks, and scoured channels. They did not exhibit an OHWM. They did not contain wetland plants, but instead, were generally vegetated with upland species. They are non-jurisdictional and do not need to be avoided.

Table 5. Streams Observed in the Study Area

Stream ID	Stream Name	Delineated Acres	Latitude	Longitude	Flow Regime	Likely Jurisdictional Status ¹	Sheet Map Number	Project Infrastructure Surveyed Area
1D	Unnamed tributary of Cannonball River	0.033	46.627333	-102.742241	Ephemeral	Jurisdictional	10	Outside survey area; no impacts
2D	Unnamed tributary of Cannonball River	0.212	46.604767	-102.753379	Ephemeral	Jurisdictional	None	Outside survey area; no impacts
3D	Unnamed tributary of Cannonball River	0.040	46.623421	-102.759308	Ephemeral	Jurisdictional	10	Outside survey area; no impacts
1H	Unnamed tributary of Cannonball River	0.094	46.579993	-102.696605	Ephemeral	Jurisdictional	15	Service Road Permanent Impact: 0.007 acre Temporary Impact: 0.020 acre Collector Line Feature to be bored; no impacts
2H	Unnamed tributary of Cannonball River	0.178	46.624532	-102.697301	Ephemeral	Jurisdictional	13	Outside survey area; no impacts
3H	Unnamed tributary of Cannonball River	0.183	46.624672	-102.691500	Ephemeral	Jurisdictional	13	Outside survey area; no impacts
		1.553	46.607833	-102.690494	Intermittent	Jurisdictional	14, 16	Outside survey area; no impacts
4H	Unnamed tributary of Cannonball River	0.263	46.573461	-102.783090	Ephemeral	Jurisdictional	7	Outside survey area; no impacts
1I	Unnamed tributary of Cannonball River	0.078	46.574396	-102.806074	Ephemeral	Jurisdictional	7	Collector Line Feature to be bored; no impacts
2I	Unnamed tributary of Cannonball River	0.019	46.588937	-102.731476	Ephemeral	Jurisdictional	11, 14	Outside survey area; no impacts
1L	Unnamed tributary of Cannonball River	0.797	46.602479	-102.920553	Ephemeral	Jurisdictional	2	Outside survey area; no impacts
1N	Unnamed tributary of Cannonball River	0.123	46.619737	-102.886990	Ephemeral	Jurisdictional	1	Collector line; feature to be bored; no impacts

¹ Note that only the USACE can render an approved JD. The likely jurisdictional status listed in Table 5 only reflect Tetra Tech's understanding of Jurisdictional WoUS. Without a USACE-rendered JD, impacts should be minimized or avoided to these streams. No material impacts are anticipated to the wetlands listed in this table regardless of likely Jurisdictional status, because the Project has been designed to avoid or minimize impacts.

Table 6. Ponds Observed in the Study Area

Pond ID	Acres	Latitude	Longitude	Likely Jurisdictional Status¹	Sheet Map Number	Project Infrastructure Surveyed Area
BR2-POND-1D	0.125	46.596622	-102.802966	Jurisdictional	6, 7	Outside survey area; no impacts
BR2-POND-2D	0.162	46.596702	-102.803812	Jurisdictional	6, 7	Outside survey area; no impacts
BR2-POND-1G	0.653	46.589791	-102.728895	Jurisdictional	14	Outside survey area; no impacts
BR2-POND-2G	0.435	46.596908	-102.786229	Jurisdictional	6, 7	Outside survey area; no impacts
BR2-POND-1H	1.676	46.625833	-102.911751	Jurisdictional	1	Outside survey area; no impacts
BR2-POND-2H	0.390	46.593005	-102.810274	Non-Jurisdictional	7	Outside survey area; no impacts
BR2-POND-1K	0.003	46.600995	-102.728104	Jurisdictional	14	Outside survey area; no impacts
BR2-POND-1L	0.634	46.617973	-102.912656	Jurisdictional	1	Outside survey area; no impacts
BR2-POND-1M	0.275	46.623300	-102.791882	Jurisdictional	5, 6	Outside survey area; no impacts
BR2-POND-2M	0.320	46.621985	-102.836304	Jurisdictional	3	Outside survey area; no impacts

¹ Note that only the USACE can render an approved JD. The likely jurisdictional status listed in Table 6 only reflect Tetra Tech's understanding of Jurisdictional WoUS. Without a USACE-rendered JD, impacts should be minimized or avoided to these ponds. No material impacts are anticipated to the wetlands listed in this table regardless of likely Jurisdictional status, because the Project has been designed to avoid or minimize impacts.

4. Conclusions and Recommendations

Fifty-nine delineated features are shown on the sheet maps included as **Appendix 1, Figure 3**. These 59 features include 38 wetlands, 11 streams, and 10 ponds. Fifty-one features were mapped in previous alignments and are now outside of the temporary disturbance areas or will be bored to avoid impacts. Additionally, two features occur in the construction easement. Wetlands or other WoUS that occur in construction easements should be flagged and avoided. The remaining six delineated features occur within temporary disturbance areas for the service roads and electrical collection lines. Anticipated infrastructure impacts to these wetlands or other WoUS features are summarized below.

4.1 Service Roads

Impacts to wetlands or other WoUS from the construction of service roads are anticipated to be limited to four locations. Based on the current layout, three wetlands and one stream features intersect the temporary and permanent disturbance areas for services roads. Wetlands and other WoUS should be avoided whenever possible and by minimizing the temporary disturbance when unavoidable. The proposed temporary disturbance for service roads is an approximate 50-foot right-of-way. Using the current alignment and approximate disturbance areas listed in **Table 1**, permanent impacts to any single and complete project would be less than the 0.1 acre threshold that would require a PCN submittal to the USACE. The permanent impacts by wetland are listed in Table 7 below.

Table 7. Permanent Impacts to Wetlands or Other WoUS

Feature ID	Feature Type	Permanent Impacts (acre)	Sheet Map Number
Wetland 3H	Wetland	0.012	1
Wetland 10I	Wetland	0.016	16
Wetland 1L	Wetland	0.088	7
BR2-STR-1H	Stream	0.007	15

4.2 Electrical Collection Lines

Twelve features are intersected by proposed electrical collection lines. Based on the current layout, nine wetlands and three stream features intersect the temporary disturbance areas for electrical collection lines. The installation of electrical collection lines is typically considered a temporary disturbance. USACE recommends the installation of electrical collection lines using a direct bury technique. This process is not regulated by the USACE and is, therefore, not subject to permitting. If this technique is not available, installation of the electrical collection lines by trenching is regulated under the Section 404 permitting process because it causes the temporary placement of dredged material in jurisdictional features. Brady Wind II has committed to boring

under the delineated features where they intersect with collection lines (**Figure 3**). Boring under jurisdictional features is also not regulated by the USACE; therefore, no PCN or permit would likely be required.

4.3 USACE Permitting

Based on the estimated permanent and temporary impacts to wetlands and other WoUS from the proposed Project, a CWA Section 404 permit is not required. If no permit is required, but minor permanent and temporary impacts are necessary, the USACE would likely require the action follow the General and Regional Conditions of the applicable nationwide permits (NWP) included in **Appendix 3**. NWP #12—Utility Line Activities and NWP #14—Linear Transportation Activities are the two permits that likely may apply to the proposed Project. NWP 12 applies to projects that involve utilities activities; NWP 14 was established for linear transportation projects (e.g., roads). The USACE emphasizes the following measures to minimize impacts to wetlands or other WoUS:

- Use mats or other measures to minimize soil disturbance in jurisdictional areas.
- Ensure no temporary fills remain in the jurisdictional areas.
- Return any affected jurisdictional areas to pre-construction contours and revegetate the affected areas.

Tetra Tech also recommends Brady Wind II follow best management practices (BMPs) included as **Appendix 4** during construction of the proposed Project to further avoid and minimize impacts to wetlands and other WoUS. The following bullet points summarize some of these BMPs that are specific to wetlands and other WoUS:

- BMP-6: avoid and/or minimize impacting drainage features such as ditches, culverts, levees, tiles, terraces.
- BMP-13: identify, avoid, and/or minimize adverse impacts to wetlands and waterbodies, including placing structure foundations below the OHWM of WoUS.
- BMP-16: service road construction should minimize impacting streams.
- BMP-22: all permanent or temporary crossings of waterbodies should be designed to maintain low flows for aquatic species movement and designed to function during high flows.
- BMP-25: work within WoUS should occur during periods of low flow or no flow.

5. References

- Chapman, S., Omernik, J., Freeouf, J., Huggins, D., McCauley, J., Freeman, C., Steinauer, G., Angelo, R., and Schlepp, R. 2001. Ecoregions of North Dakota (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,950,000).
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe, 1979. Classification of Wetlands and Deepwater Habitats of the United States. United States Government Printing Office. Washington, D.C. GPO024-010-00524-6.
- Environmental Protection Agency (EPA). 2015. The Clean Water Rule Fact Check. Accessed December 2015. Available Online: http://www.epa.gov/sites/production/files/2015-05/documents/fact_sheet_fact_check_clean_water_rule.pdf
- Lichvar, Robert W. 2014. The National Wetland Plant List. Report ERDC/CRREL TR-12-11. U.S. Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory.
- McGregor, R.L. (Coord. Ed.). 1986. Flora of the Great Plains. The Great Plains Flora Association. University Press of Kansas. Lawrence, Kansas.
- Gretag/Macbeth. 2009. Munsell® Soil Color Charts 2009 Revision. New Windsor, NY.
- Stevens, Orin Alva. 1963. Handbook of North Dakota Plants. North Dakota Institute for Regional Studies.
- USACE (U.S. Army Corps of Engineers). 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region. Version 2.0. ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- . 1987. Corps of Engineers Wetland Delineation Manual. Environmental Laboratory. U.S. Army Corps of Engineers Waterways Experiment Station. Technical Report Y-87-1. January.
- U.S. Department of Agriculture-Farm Service Bureau. 2015. National Agricultural Imagery Program. Aerial photography for Study Area.

USDA-NRCS (U.S. Department of Agriculture-Natural Resources Conservation Service). 2015. Hydric Soils. Shapefile. Accessed 5/5/15. Available online: <http://sdmdataaccess.nrcs.usda.gov/>

USFWS (United States Fish and Wildlife Service) 2015. National Wetlands Inventory. Shapefile. Accessed 5/5/2015. Available online: <http://www.fws.gov/wetlands/Data/Data-Download.html>

USGS (United States Geologic Survey). 2015a. National Hydrography Dataset. Shapefile. Accessed 5/5/15. Available online: <ftp://nhdftp.usgs.gov/DataSets/Staged/SubRegions/>

———. 2015b. The National Map. Raster. Accessed 5/5/15. Available online: <ftp://nhdftp.usgs.gov/DataSets/Staged/SubRegions/>

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











Appendix 1: Figures

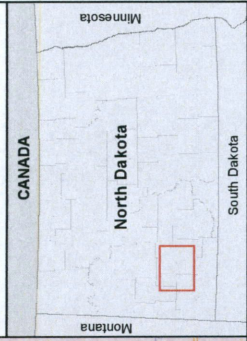
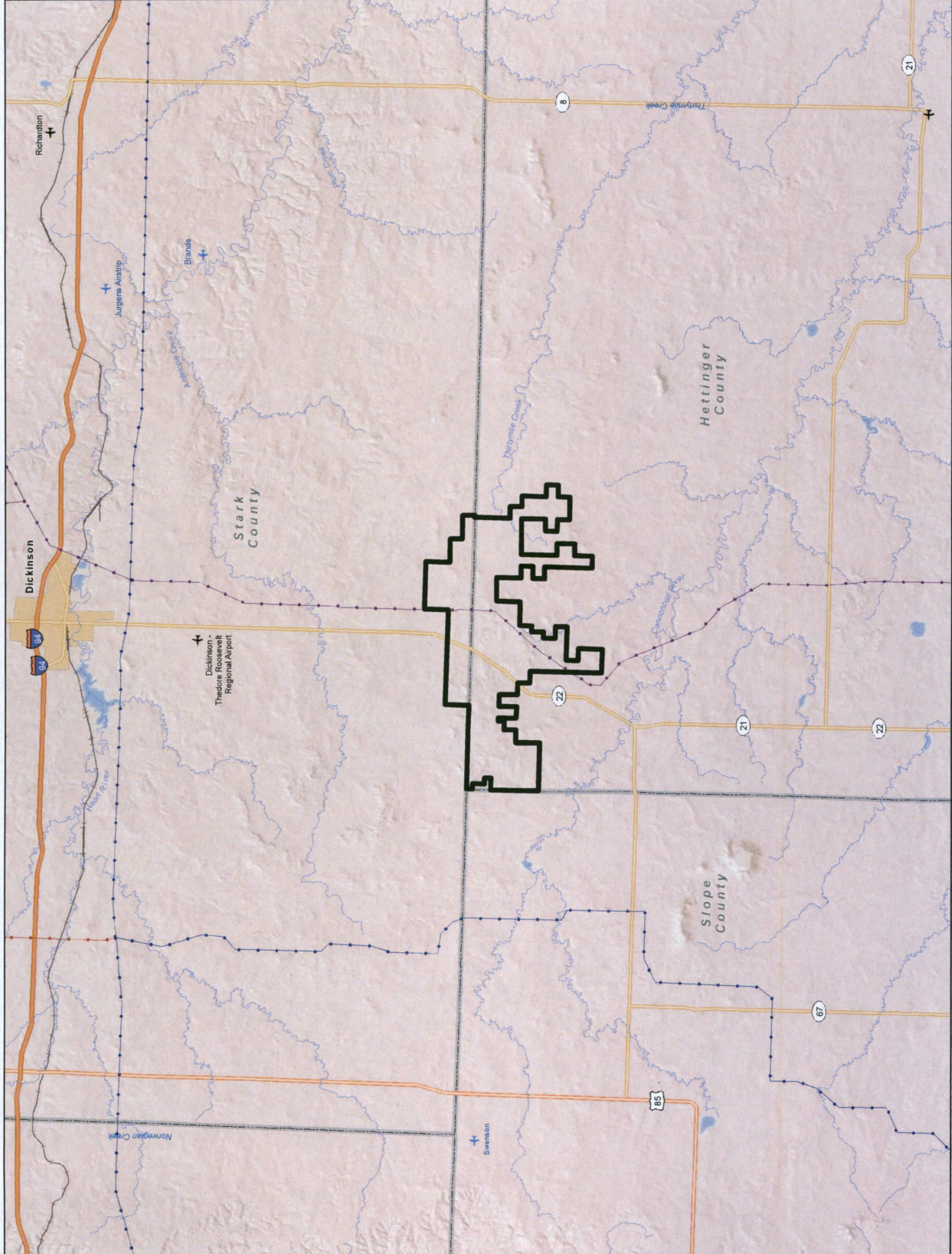
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Figure 1
Project Vicinity

Brady II Wind Energy Center
Stark and Hettinger Counties, North Dakota

Legend

-  Study Area (2/23/16)
-  Existing Transmission Lines
-  115kV Transmission Line
-  230kV Transmission Line
-  345kV Transmission Line
- Transportation**
-  Public Airport
-  Private Airport
-  Interstate
-  Highway
-  Major Road
-  Railroad
-  County Boundary
-  Urban Area

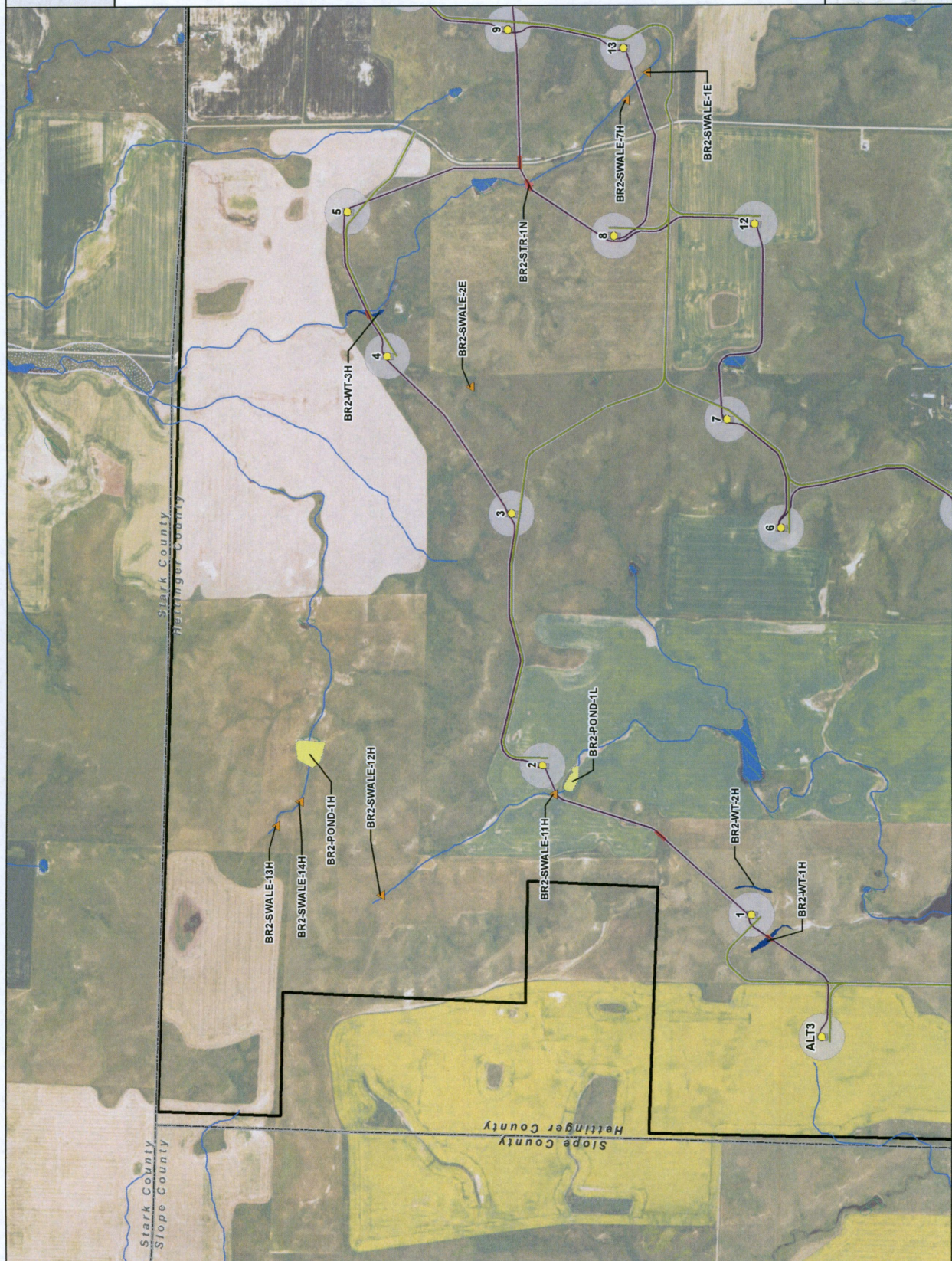
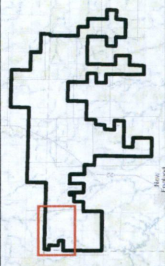
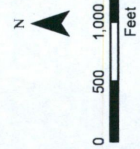


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Figure 3
Project Area Wetlands
Sheet 1 of 17

Brady II Wind Energy Center
 Stark and Hettinger Counties, North Dakota

- Legend**
- Proposed Project Area (4/12/16)
 - County Boundary
 - Major Road
 - Proposed Project Infrastructure
 - Turbines (4/22/16)
 - Collection Lines (4/28/16)
 - Service Roads (5/2/16)
 - Collection Line Boring Locations (4/28/16)
 - Desktop Analysis Data
 - Permanent Disturbance Area
 - Temporary Disturbance Area
 - NHD Stream or Waterbody
 - NWI Wetland
 - 100-year Flood Zone
 - Field Delineated Features
 - Swale
 - Pond
 - Stream
 - Wetland

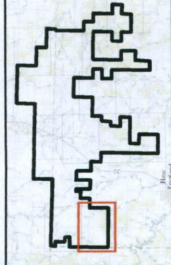
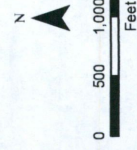


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Figure 3
Project Area Wetlands
Sheet 2 of 17

Brady II Wind Energy Center
 Stark and Hettinger Counties, North Dakota

- Legend**
- Proposed Project Area (4/12/16)
 - County Boundary
 - Major Road
 - Proposed Project Infrastructure
 - Turbines (4/22/16)
 - Collection Lines (4/28/16)
 - Service Roads (5/2/16)
 - Collection Line Boring Locations (4/28/16)
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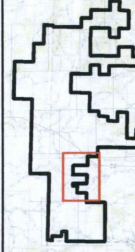
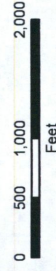


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Figure 3
Project Area Wetlands
Sheet 4 of 17

Brady II Wind Energy Center
 Stark and Hettinger Counties, North Dakota

- Legend**
- Proposed Project Area (4/12/16)
 - County Boundary
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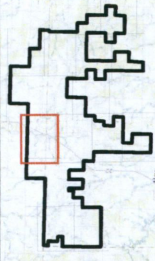


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Figure 3
Project Area Wetlands
Sheet 5 of 17

Brady II Wind Energy Center
 Stark and Hettinger Counties, North Dakota

- Legend**
- Proposed Project Area (4/12/16)
 - County Boundary
 - Major Road
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 - Turbines (4/22/16)
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 - Wetland



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Figure 3
Project Area Wetlands
Sheet 6 of 17

Brady II Wind Energy Center
 Stark and Hettinger Counties, North Dakota

- Legend**
- Proposed Project Area (4/12/16)
 - County Boundary
 - Major Road
 - Proposed Project Infrastructure
 - Turbines (4/22/16)
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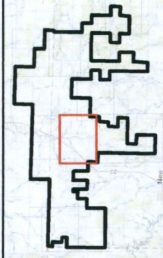
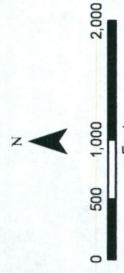
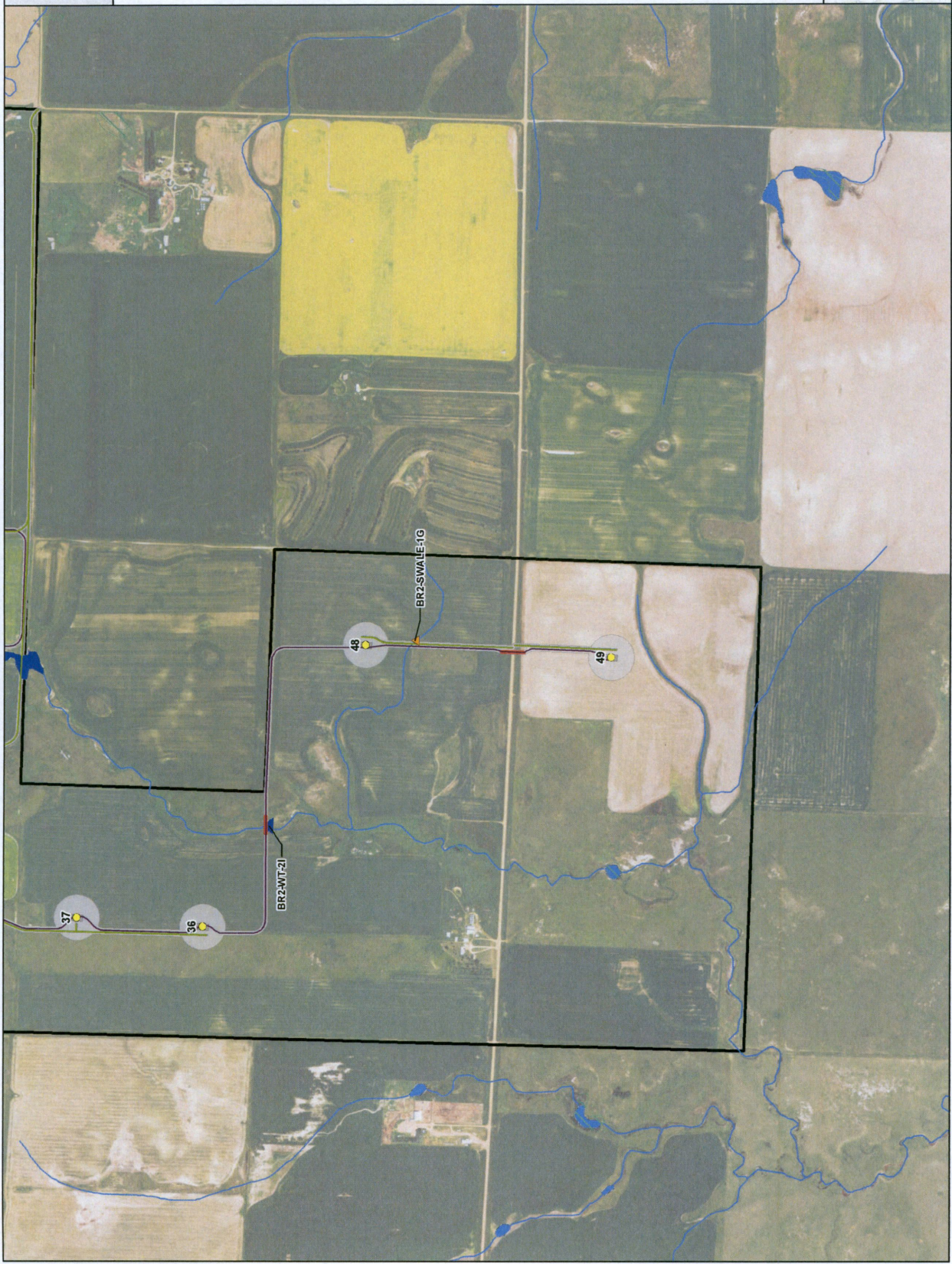
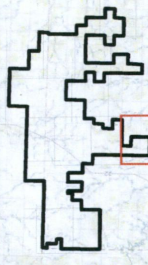
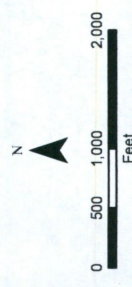


Figure 3
Project Area Wetlands
Sheet 8 of 17

Brady II Wind Energy Center
 Stark and Hettinger Counties, North Dakota

- Legend**
- Proposed Project Area (4/12/16)
 - County Boundary
 - Major Road
 - Proposed Project Infrastructure
 - Turbines (4/22/16)
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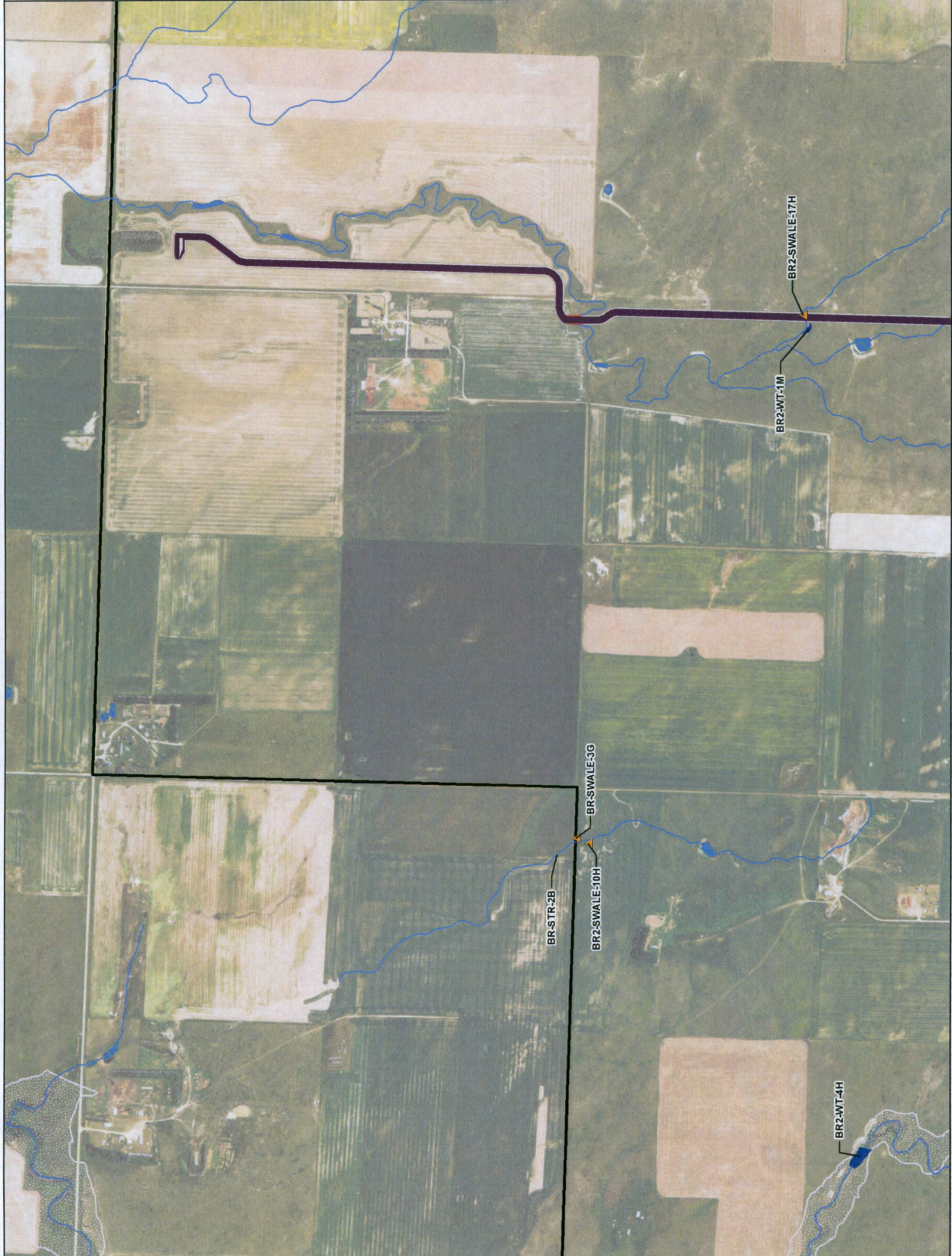
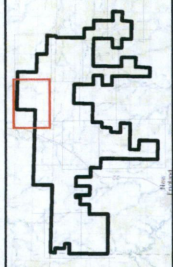
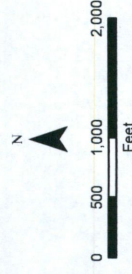


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Figure 3
Project Area Wetlands
Sheet 9 of 17

Brady II Wind Energy Center
 Stark and Hettinger Counties, North Dakota

- Legend**
- Proposed Project Area (4/12/16)
 - County Boundary
 - Major Road
 - Proposed Project Infrastructure
 - Turbines (4/22/16)
 - Collection Lines (4/28/16)
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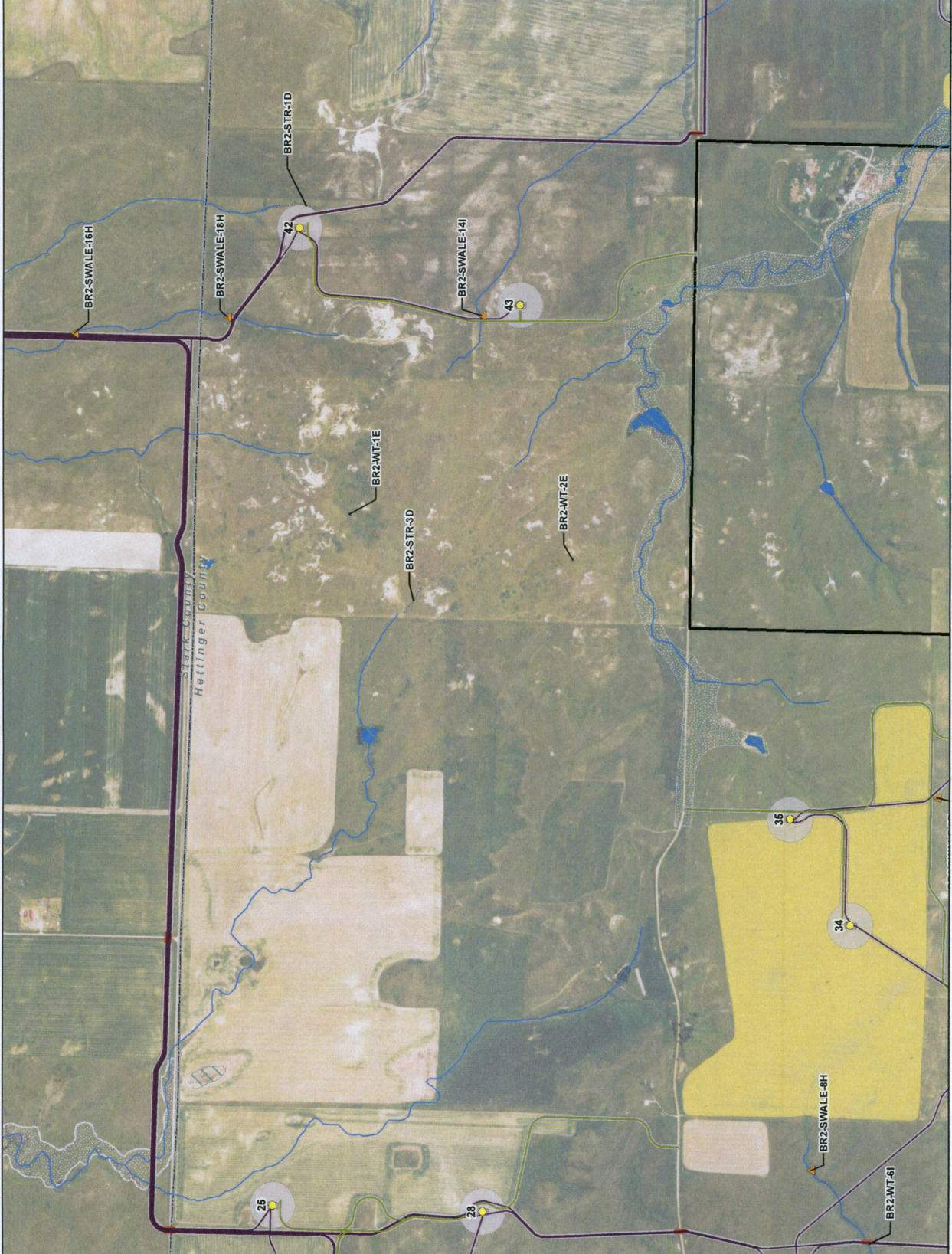
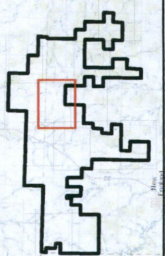
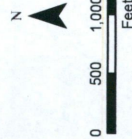


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Figure 3
Project Area Wetlands
Sheet 10 of 17

Brady II Wind Energy Center
 Stark and Hettinger Counties, North Dakota

- Legend**
- Proposed Project Area (4/12/16)
 - County Boundary
 - Major Road
 - Turbines (4/22/16)
 - Collection Lines (4/28/16)
 - Service Roads (5/2/16)
 - Collection Line Boring Locations (4/28/16)
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 - Permanent Disturbance Area
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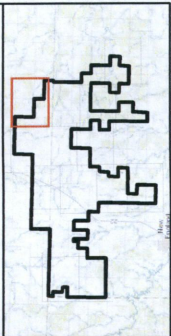


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Figure 3
Project Area Wetlands
Sheet 12 of 17

Brady II Wind Energy Center
 Stark and Hettinger Counties, North Dakota

- Legend**
- Proposed Project Area (4/12/16)
 - County Boundary
 - Major Road
 - Proposed Project Infrastructure**
 - Turbines (4/22/16)
 - Collection Lines (4/28/16)
 - Service Roads (5/2/16)
 - Collection Line Boring Locations (4/28/16)
 - Desktop Analysis Data**
 - Permanent Disturbance Area
 - Temporary Disturbance Area
 - NHD Stream or Waterbody
 - NWI Wetland
 - 100-year Flood Zone
 - Field Delineated Features**
 - Swale
 - Pond
 - Stream
 - Wetland

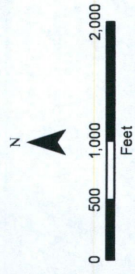


REPRODUCTION OF THIS MAP IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF THE PROJECT MANAGER.

Figure 3
Project Area Wetlands
Sheet 13 of 17

Brady II Wind Energy Center
 Stark and Hettinger Counties, North Dakota

- Legend**
- Proposed Project Area (4/12/16)
 - County Boundary
 - Major Road
 - Proposed Project Infrastructure
 - Turbines (4/22/16)
 - Collection Lines (4/28/16)
 - Service Roads (5/2/16)
 - Collection Line Boring Locations (4/28/16)
 - Desktop Analysis Data
 - Permanent Disturbance Area
 - Temporary Disturbance Area
 - NHD Stream or Waterbody
 - NWI Wetland
 - 100-year Flood Zone
 - Field Delineated Features
 - Swale
 - Pond
 - Stream
 - Wetland

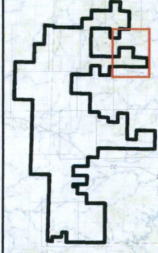
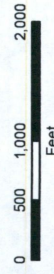


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Figure 3
Project Area Wetlands
Sheet 15 of 17

Brady II Wind Energy Center
 Stark and Hettinger Counties, North Dakota

- Legend**
- Proposed Project Area (4/12/16)
 - County Boundary
 - Major Road
 - Proposed Project Infrastructure
 - Turbines (4/22/16)
 - Collection Lines (4/28/16)
 - Service Roads (5/2/16)
 - Collection Line Boring Locations (4/28/16)
 - Desktop Analysis Data**
 - Permanent Disturbance Area
 - Temporary Disturbance Area
 - NHD Stream or Waterbody
 - NWI Wetland
 - 100-year Flood Zone
 - Field Delineated Features**
 - Swale
 - Pond
 - Stream
 - Wetland

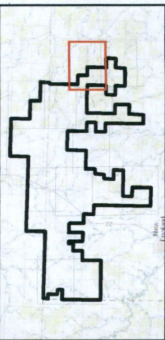
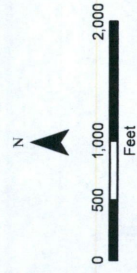


PROJECT IS BRADY WIND_147 Wetlands_V15_Sheet_15_of_17.mxd

Figure 3
Project Area Wetlands
Sheet 16 of 17

Brady II Wind Energy Center
 Stark and Hettinger Counties, North Dakota

- Legend**
- Proposed Project Area (4/12/16)
 - County Boundary
 - Major Road
 - Proposed Project Infrastructure
 - Turbines (4/22/16)
 - Collection Lines (4/28/16)
 - Service Roads (5/2/16)
 - Collection Line Boring Locations (4/28/16)
 - Desktop Analysis Data
 - Permanent Disturbance Area
 - Temporary Disturbance Area
 - NHD Stream or Waterbody
 - NWI Wetland
 - 100-year Flood Zone
 - Field Delineated Features
 - Swale
 - Pond
 - Stream
 - Wetland

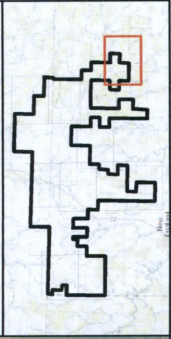
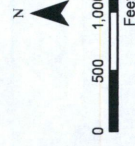


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Figure 3
Project Area Wetlands
Sheet 17 of 17

Brady II Wind Energy Center
 Stark and Hettinger Counties, North Dakota

- Legend**
- Proposed Project Area (4/12/16)
 - County Boundary
 - Major Road
 - Proposed Project Infrastructure
 - Turbines (4/22/16)
 - Collection Lines (4/28/16)
 - Service Roads (5/2/16)
 - Collection Line Boring Locations (4/28/16)
 - Desktop Analysis Data**
 - Permanent Disturbance Area
 - Temporary Disturbance Area
 - NHD Stream or Waterbody
 - NWI Wetland
 - 100-year Flood Zone
 - Field Delineated Features**
 - Swale
 - Pond
 - Stream
 - Wetland



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Appendix 2: Representative Photos

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Photo 1: View to the typical swale. This feature has no defined bed or banks and no scoured channel, and is therefore not a wetland.



Photo 2: View to the southwest of typical upland. An NHD flowline was mapped in this location, but this feature has no channel that exhibits wetland or other WoUS traits.



Photo 3: View to the south of Wetland 3H. This feature was likely a historic drainage feature that retains water in the topographic low points. Up gradient to the south, there is a man-made pond that contributes to the wetland function at this location.



Photo 4: View to the northeast of Wetland 7H. This feature follows a historic drainage feature exhibited several patches of prairie cord grass and had saturated soils. The likely jurisdictional wetland extends to the north and south paralleling the service road to Turbine 30, eventually intersecting one of the service road alignments.



Photo 5: View to the northeast of Wetland 10I. This wetland is formed in a historic drainage with well-developed croplands surrounding. Prairie cordgrass was the dominate species in the wetland that had a high water table and saturated soils.



Photo 6: View to the south of Wetland 1L. This wetland is a historic drainage system that has been modified with a series of agricultural use ponds. The series of ponds along the feature supports the wetland system by retaining water at or near the surface for prolonged periods of time. The topographical low point, where the proposed service intersects this feature is located approximately 20 feet behind the person in the photo.



Photo 7: View to the southeast of Wetland 1D. The feature likely ponds during the wet season based on the closed depression and the large amount of disturbance from cattle. Due to the heavy influence of cattle, vegetation identification was not successful. Wetland was determined by the presence of hydric soils and hydrology.



Photo 8: View facing northwest of Wetland 2D. This wetland is located in the topographical low point of a swale that runs through a plowed field.



Photo 9: View facing North of Wetland 3D. The wetland was dominated by fox-tail barley and was located in a depressional area. Wetland boundary was identified by vegetation breaks between the feature and the surrounding cropland.



Photo 10: View to the northeast of Wetland 1E. This wetland is located in a swale within a native grassland.

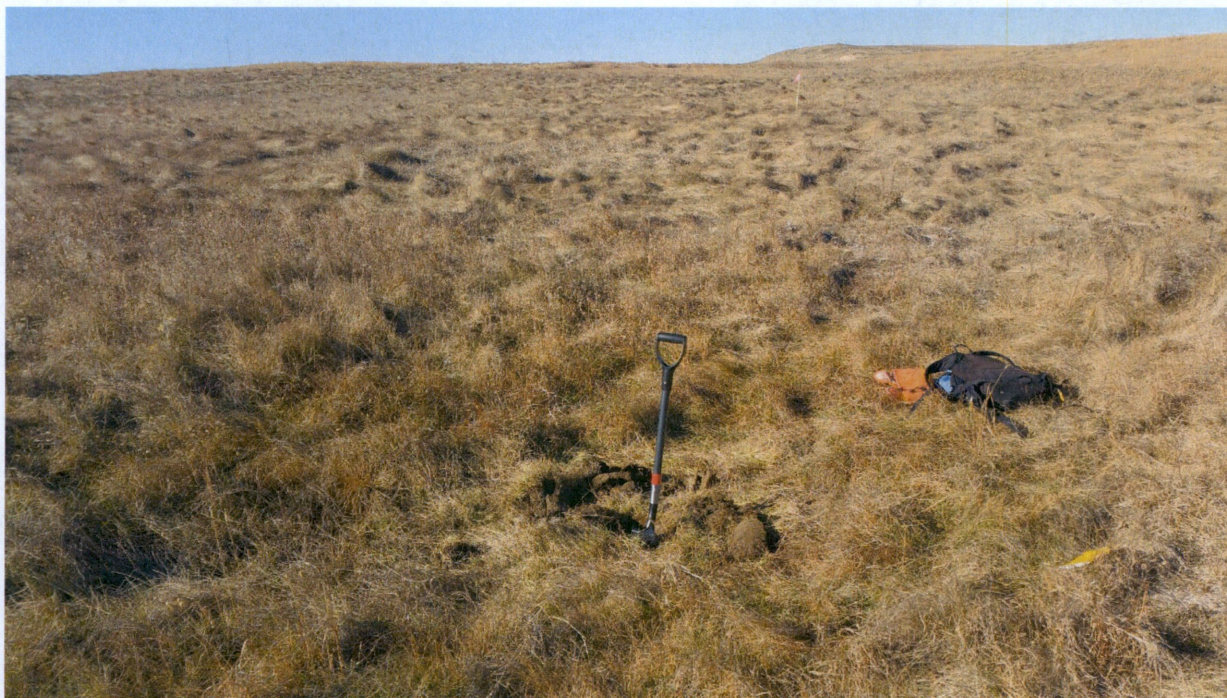


Photo 12: View to the southwest of Wetland 2E. The wetland is a narrow depressional feature within a rolling upland landscape.



Photo 13: View to the north of Wetland 3E. This wetland was previously mapped as by NWI and is part of a large wetland complex located in a topographically low point. The wetland is dominated by curly-top knotweed, an obligate wetland plant.



Photo 14: Wetland 4E. A slightly depressional wetland with a mix of native and non-native wetland plants.



Photo 15: Wetland 1F. Wetland located in a narrow drainage with a agricultural use pond located to the southwest. Pond is located in the background of the photo above the green berm.



Photo 16: Wetland 1G. A wetland formed in a drainageway adjacent to a road. The wetland is dominated by prairie cordgrass, facultative wetland species.



Photo 17: Wetland 2G. Wetland located in the drainageway between cropland. The dominate vegetation included reed canarygrass and prairie cordgrass, facultative wetland plants.



Photo 18: Wetland 1H. The wetland occurs in a drainage feature between croplands.



Photo 19: Wetland 2H. A depressional wetland in a swale. The swale was likely a historical drainage feature.



Photo 20: Wetland 4H. The wetland is located in a drainage feature. A pond is visible in the background of the photo and likely contributes to the wetland development. The area between the shovel and the clipboard marks the wetland boundary for this feature.



Photo 21: Wetland 5H and 6H. This is a wetland complex in a topographical low point that follows a historic drainage.



Photo 22: Wetlands 8I. This is a wetland along a roadside in a topographical low point that follows a historic drainage.



Photo 23: Wetlands 9I. This is a wetland was previously mapped as an NWI and follows an historic drainage features that is now a swale. The delineated wetland is identified by prairie cordgrass within a depressional area.



Photo 24: Wetlands 11I. This is a small wetland within a historic drainage feature. The feature is well defined with a distinct depression surrounded by developed croplands. The shovel in the foreground identifies the wetland/upland boundary.



Photo 25: Stream 3H. This is a typical stream found in croplands. The defined bed and banks are difficult to distinguish because of the dense vegetation covering the feature. The photo shows shape of the feature in the topographical low point looking up gradient.



Photo 26: Stream 2H. A typical stream within a grazed field. The stream is defined by the change in vegetation, defined channel and banks.



Photo 27: Pond 1D. A typical pond within a grazed field. The pond is a man-made feature used for cattle and agricultural use.

Appendix 3: USACE Nationwide Permits General and Regional Conditions

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Nationwide Permit General Conditions

Note:

To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of [33 CFR 330.1](#) through 330.6 apply to every NWP authorization. Note especially [33 CFR 330.5](#) relating to the modification, suspension, or revocation of any NWP authorization.

1. *Navigation.* (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. *Aquatic Life Movements.* No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.

3. *Spawning Areas.* Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. *Migratory Bird Breeding Areas.* Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. *Shellfish Beds.* No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWP 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. *Suitable Material.* No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. *Water Supply Intakes.* No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. *Adverse Effects From Impoundments.* If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. *Management of Water Flows.* To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. *Fills Within 100-Year Floodplains.* The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. *Equipment.* Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. *Soil Erosion and Sediment Controls.* Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. *Removal of Temporary Fills.* Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. *Proper Maintenance.* Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. *Single and Complete Project.* The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. *Wild and Scenic Rivers.* No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

17. *Tribal Rights.* No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. *Endangered Species.* (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the NWP activity, or whether additional ESA consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or

critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWP.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, The Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide web pages at <http://www.fws.gov/> or <http://www.fws.gov/ipac> and <http://www.noaa.gov/fisheries.html> respectively.

19. *Migratory Birds and Bald and Golden Eagles.* The permittee is responsible for obtaining any "take" permits required under the U.S. Fish and Wildlife Service's regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the U.S. Fish and Wildlife Service to determine if such "take" permits are required for a particular activity.

20. *Historic Properties.* (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address section 106 compliance for the NWP activity, or whether additional section 106 consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register

of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see [33 CFR 330.4\(g\)](#)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties on which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see [36 CFR 800.3\(a\)](#)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA ([16 U.S.C. 470h-2\(k\)](#)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. *Discovery of Previously Unknown Remains and Artifacts.* If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect

the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWP's 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWP's 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 31, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWP's only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of [33 CFR part 332](#).

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in minimal adverse effects on the aquatic environment.

(2) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

(3) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of [33 CFR 332.4\(c\)\(2\)-\(14\)](#) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see [33 CFR 332.3\(k\)\(3\)](#)).

(4) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.

(5) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream rehabilitation, enhancement, or preservation, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the restoration or establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to establish a riparian area

on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or establishing a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee programs, or separate permittee-responsible mitigation. For activities resulting in the loss of marine or estuarine resources, permittee-responsible compensatory mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

24. *Safety of Impoundment Structures.* To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. *Water Quality.* Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see [33 CFR 330.4\(c\)](#)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. *Coastal Zone Management.* In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see [33 CFR 330.4\(d\)](#)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. *Regional and Case-By-Case Conditions.* The activity must comply with any regional conditions that may have been added by the Division Engineer (see [33 CFR 330.4\(e\)](#)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its

section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. *Use of Multiple Nationwide Permits.* The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. *Transfer of Nationwide Permit Verifications.* If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

“When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.”

(Transferee)

(Date)

30. *Compliance Certification.* Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized work was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by [33 CFR 332.3\(l\)\(3\)](#) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the work and mitigation.

31. *Pre-Construction Notification—(a) Timing.* Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction

notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see [33 CFR 330.4\(f\)](#)) and/or Section 106 of the National Historic Preservation (see [33 CFR 330.4\(g\)](#)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in [33 CFR 330.5\(d\)\(2\)](#).

(b) *Contents of Pre-Construction Notification:* The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed project;

(3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause, including the anticipated amount of loss of water of the United States expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for

compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(4) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(5) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse effects are minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) *Form of Pre-Construction Notification:* The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) *Agency Coordination:* (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States, for NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of intermittent and ephemeral stream bed, and for all NWP 48 activities that require pre-construction notification, the district engineer will immediately provide (e.g., via email, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at [33 CFR 330.5](#).

(3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

Appendix 4: Best Management Practices

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Best Management Practices – Brady II Wind Energy Center

<u>Reference Number</u>	<u>Measure</u>
<u>BMP-1</u>	Minimize clearing vegetation within the ROW, consistent with applicable federal, state, and local regulations.
<u>BMP-2</u>	Vegetation removed during clearing should be disposed of according to federal, state, and local regulations.
<u>BMP-3</u>	Any herbicides used during construction and operations and maintenance should be applied according to label instructions and any federal, state, and local regulations.
<u>BMP-4</u>	Restrict vehicular travel to the ROW and other established areas within the construction, access, or maintenance easement(s).
<u>BMP-5</u>	Roads not otherwise needed for maintenance and operations should be restored to preconstruction conditions. Restoration practices may include decompacting, recontouring, and re-seeding. Roads needed for maintenance and operations should be retained.
<u>BMP-6</u>	Avoid and/or minimize damage to drainage features and other improvements such as ditches, culverts, levees, tiles, and terraces; however, if these features or improvements are inadvertently damaged, they should be repaired and or restored.
<u>BMP-7</u>	Emergency and spill response equipment should be kept on hand during construction.
<u>BMP-8</u>	Restrict the refueling and maintenance of vehicles and the storage of fuels and hazardous chemicals within at least 100 feet from wetlands, surface waterbodies, and groundwater wells, or as otherwise required by federal, state, or local regulations.
<u>BMP-9</u>	Minimize compaction of soils and rutting through appropriate use of construction equipment (e.g., low ground pressure equipment and temporary equipment mats).
<u>BMP-10</u>	Provide sanitary toilets convenient to construction; these should be located greater than 100 feet from any stream or tributary or to any wetland. These facilities should be regularly serviced and maintained; waste disposal should be properly manifested. Employees should be notified of sanitation regulations and should be required to use sanitary facilities.
<u>BMP-11</u>	Identify environmentally sensitive vegetation (e.g., wetlands, protected plant species, riparian areas, and large contiguous tracts of native prairie) and avoid and/or minimize impacts to these areas.

<u>BMP-12</u>	Identify and implement measures to control and minimize the spread of non-native invasive species and noxious weeds.
<u>BMP-13</u>	Identify, avoid, and/or minimize adverse effects to wetlands and waterbodies. Do not place structure foundations within the Ordinary High Water Mark (OHWM) of Waters of the United States (wetlands or streams).
<u>BMP-14</u>	Establish streamside management zones within 50 feet of both sides of intermittent and perennial streams and along margins of bodies of open water where removal of low-lying vegetation is minimized.
<u>BMP-15</u>	Selectively apply herbicides within streamside management zones.
<u>BMP-16</u>	Construct access roads to minimize disruption of natural drainage patterns including perennial, intermittent, and ephemeral streams.
<u>BMP-17</u>	Locate spoil piles from foundation excavations and electrical collection line trenches outside of streamside management zones.
<u>BMP-18</u>	Dewatering should be conducted in a manner designed to prevent soil erosion (e.g., through discharge of water to vegetated areas and/or the use of flow control devices).
<u>BMP-19</u>	Design infrastructure to avoid adverse changes to the base flood elevation within the 100-year floodplain.
<u>BMP-20</u>	Minimize fill for access roads and structure foundations within 100-year floodplains to avoid adverse changes to the base flood elevation.
<u>BMP-21</u>	Excavated trenches that are to be backfilled should separate the upper 12 inches of topsoil from the rest of the excavated material. The topsoil should be used as the final backfill.
<u>BMP-22</u>	All permanent and temporary crossings of waterbodies should be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of aquatic species. The crossings would also be constructed to withstand expected high flows. The crossings would not restrict or impede the passage of normal or high flows. Permanent structure placement within a Water of the United States will require permitting from the US Army Corps of Engineers.
<u>BMP-23</u>	Where tree removal is necessary in the ROW, this removal should be accomplished at ground level leaving root wads in place to aid in the stabilization of soils.

<u>BMP-24</u>	Appropriate sediment and erosion controls should be used to prevent erosion and to minimize the release of sediment from the project area to Waters of the U.S. These sediment and erosion controls should be installed prior to any land disturbance associated with construction and should be regularly inspected and maintained in effective operating condition for the duration of the construction phase. Additional erosion and sediment control measures should be further addressed in a Stormwater Management Plan.
<u>BMP-25</u>	To the extent practicable, work within Waters of the U.S. should occur during periods of low or no flow.
<u>BMP-26</u>	The movement of crews and equipment should be limited to the project area or construction easement, including access routes.
<u>BMP-27</u>	Construction staging and laydown areas should be located and arranged in a manner to avoid trees and vegetation and to minimize visual impacts to the extent practicable.