Appendix F – Wetland Delineation Report

U.S. ARMY CORPS OF ENGINEERS
REQUEST FOR CORPS JURISDICTIONAL DETERMINATION

*Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Program of the U.S. Army Corps of Engineers; Final Rule for 33 CFR Parts 320-332. **Principal Purpose**: The information that you provide will be used in evaluating your request to determine whether there are any aquatic resources within the project area subject to federal jurisdiction under the regulatory authorities referenced above. **Routine Uses**: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be made available as part of a public notice as required by federal law. Your name and property location where federal jurisdiction is to be determined will be included in the approved jurisdictional determination (AJD), which will be made available to the public on the District's website and on the Headquarters USACE website. **Disclosure**: Submission of requested information is voluntary; however, if information is not provided, the request for an AJD cannot be evaluated nor can an AJD be issued.

CORPS USE ONLY:
DATE RECEIVED:

PROJECT NO.:

1. PROPERTY LOCATION:

Street Address: 85th Street/I-29 Interchange
City/Township/Parish: Sioux Falls / Delapre Township
County: Lincoln State: South Dakota
Acreage of Parcel/Review Area for JD: 451
Section: 14 Township: 100 Range: 51
Latitude: -96.796455 Longitude: -96.796455
(For linear projects, please include the center point of the proposed alignment.)

2.REQUESTOR CONTACT INFORMATION:

Typed or Printed Name: Bailey Nelson (Agent)
Company Name: SEH
Street Address: 3535 Vadnais Center Drive
City: St. Paul State: MN ZIP: 55110
Phone Number: (651) 490-2116
E-mail: bnelson@sehinc.com

3. MAP: Please attach a survey/plat map and vicinity map identifying location and review area for the JD.

4. REASON FOR REQUEST (check as many as applicable):

- ☐ I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all aquatic resources.
- ☐ I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all jurisdictional aquatic resources under Corps authority.
- ☒ I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps, and the JD would be used to avoid and minimize impacts to jurisdictional aquatic resources and as an initial step in a future permitting process.
- ☐ I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps; this request is accompanied by my permit application and the JD is to be used in the permitting process.
- ☐ I intend to construct/develop a project or perform activities in a navigable water of the U.S. which is included on the district Section 10 list and/or is subject to the ebb and flow of the tide.
- ☒ A Corps JD is required in order to obtain my local/state authorization.
- ☐ I intend to contest jurisdiction over a particular aquatic resource and request the Corps confirm that jurisdiction does/does not exist over the aquatic resource on the parcel.
- ☐ I believe that the site may be comprised entirely of dry land.
- ☐ Other: _____

5. TYPE OF DETERMINATION BEING REQUESTED:

- ☒ I am requesting an approved JD.
- ☐ I am requesting a preliminary JD.
- ☐ I am requesting a "no permit required" letter as I believe my proposed activity is not regulated.
- ☐ I am unclear as to which JD I would like to request and require additional information to inform my decision.

6. OWNERSHIP DETAILS:

- ☐ I currently own this property.
- ☐ I plan to purchase this property.
- ☒ I am an agent/consultant acting on behalf of the requestor.
- ☐ Other (please explain:) _____

By signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a person or entity with such authority, to and do hereby grant Corps personnel right of entry to legally access the site if needed to perform the JD. Your signature shall be an affirmation that you possess the requisite property rights to request a JD on the subject property.

Signature: Bailey Nelson Date: 1/6/2020

Wetland Delineation Report

85th Street Business District Joint Venture Group

85th Street Interchange

Lincoln County, South Dakota

OWNJV 149418 | January 2020

SEH

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Engineers | Architects | Planners | Scientists

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January 6, 2020

RE: 85th Street Interchange
Lincoln County, South Dakota
Wetland Delineation Report
SEH No. OWNJV 149418 30.90

Joel Dykstra
RMB, PO Box 2524
Sioux Falls, SD 57101

Dear Mr. Joel Dykstra:

Please find enclosed the Wetland Delineation Report for 85th Street Interchange in Sioux Falls and Delapre Township in Lincoln County, South Dakota. This Report presents the results of the field delineation for wetlands performed on November 25, 2018 and July 25, 2019 completed by Rebecca Beduhn (PWS #2758, CPSS # 333315). The field delineation included on-site identification, classification, and boundary determinations of wetland basins following the 1987 U.S. Army Corps of Engineers *Wetlands Delineation Manual* and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (USACE 2010).

Thank you for the opportunity to provide wetland services to the 85th Street Business District Joint Venture Group. Short Elliott Hendrickson Inc. (SEH®) is pleased to provide you with this information for your records and review. If you have any questions, please contact me directly at 651.490.2146 or via e-mail at rbeduhn@sehinc.com.

Sincerely,

Rebecca Beduhn
Professional Wetland Scientist
Certified Professional Soil Scientist

Wetland Delineation Report

85th Street Interchange

Prepared for:
85th Street Business District Joint Venture Group
RMB, PO Box 2524
Sioux Falls, SD 57101

Prepared by:
Short Elliott Hendrickson Inc.
3535 Vadnais Center Drive
St. Paul, MN 55110-5196
651.490.2000

The procedures described in this report and the field methods used constitute an official wetland delineation in accordance with the 1987 U.S. Army Corps of Engineers *Wetlands Delineation Manual* and applicable *Regional Supplement*.

The field delineation was completed by Rebecca Beduhn. The methodology meets the standards and criteria described in the manual, and conforms to the applicable standards and regulations in force at the time the fieldwork was completed. The results reflect conditions present at the time of the delineation.

I hereby certify that this report was prepared by me or under my direct supervision.

Prepared by: Bailey Nelson — 9/16/2019
Bailey Nelson, Wetland Biologist — Date
Minnesota Certified Wetland Delineator, No. 5279

Reviewed by: Rebecca L. Beduhn — 9/25/2019
Rebecca Beduhn, Wetland Scientist — Date
Professional Wetland Scientist, No. 2758
Certified Professional Soil Scientist, No. 333315

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85th Street Interchange

Prepared for 85th Street Business District Joint Venture Group

1 Introduction

The purpose of this study was to investigate the project area, identify areas meeting the technical criteria for wetlands, delineate the jurisdictional extent of the wetland basins, and classify the wetland habitat as part of the completion of an Environmental Assessment (EA) for potential impacts associated with the upgrade of the 85th Street interchange along Interstate 29 (I-29). This field delineation will be the basis on which wetland impacts from the proposed project will be determined.

This report describes the methodology and results of the field delineation performed on November 13, 2018. Wetlands were verified in July 2019 to ensure the placement of the boundary was correct. All wetlands remained unchanged, and wetland hydrology indicators were observed. Figures referred to in the text are included at the end of the report.

1.1 Site Description

The project site is located in Sioux Falls and Delapre Township in Lincoln County, South Dakota as shown on **Figure 1.**

Table 1 is a summary of the project location based on the Public Land Survey System. The project site is located in the following townships, sections, and ranges:

Township	Section	Range
100	13	51
100	14	51
100	18	50
100	19	50

Figure 2 shows the site on a 2016 aerial photograph background. The project corridor is defined by potential alignments for a new interchange along I-29 for 85th Street. The approximately 465-acre area of interest is bounded on the north by 269th Street (CR 102), on the east by Tallgrass Avenue, on the south by 271st Street (CR 106), and on the west by 469th Avenue (CR 111). The site is located in the Lower Big Sioux Watershed.

The project site consists of a variety of upland and wetland plant communities. The wetland and upland communities onsite are described in more detail in the following sections.

2 Wetland Delineation

2.1 Wetlands Definition

Wetlands are defined in federal Executive Order 11990 as follows:

> "Those areas that are inundated or saturated by surface or ground water 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."

According to U.S. Army Corps of Engineers *Wetlands Delineation Manual* (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (USACE 2010), one positive indicator (except in certain situations) from each of three elements must be present in order to make a positive wetland determination, which are as follows:

- Greater than 50 percent dominance of hydrophytic plant species.
- Presence of hydric soil.
- The area is either permanently or periodically inundated, or soil is saturated to the surface during the growing season of the dominant vegetation.

2.2 Methodology

Level 1 (onsite inspection unnecessary) delineation was applied where the wetlands were not accessible. Level 2 (onsite inspection necessary) delineation was applied for all other areas within the corridor.

2.2.1 Level 1 Resource Review

Various data sets were collected in order to aid in the identification of wetland areas including:

Aerial Photography:

- U.S. Geological Survey black and white aerial photographs (2016) (**Figure 2)**.

Elevation Data:

- MNDNR LiDAR data for South Dakota (**Figure 5**).

Ancillary Data:

- The Natural Resources Conservation Service (NRCS) Soil Survey Geographic Maps (SSURGO) for Lincoln County (**Figure 4**).
- U.S. Fish and Wildlife Service National Wetlands Inventory (NWI) (**Figure 3**).

Wetland boundary lines were digitized using a compilation of the data described above. The general process involved identifying areas that are potential wetland and then determining a boundary for those wetlands. Once an area was identified as wetland, the DEM and higher resolution aerial photographs where used to aid in boundary determination.

2.2.2 Level 2 Delineation Field Procedures

The project site was examined on November 13, 2018 for areas meeting the technical wetland criteria in accordance with the U.S. Army Corps of Engineers *Wetlands Delineation Manual* (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (USACE 2010). The site was revisited on July 25th, 2019 to verify that wetlands delineated late in the season were accurate under normal conditions. No changes to boundaries or types were made during the 2nd visit.

The delineation procedures in the Corps *Manual* (*i.e.*, the Routine Onsite Determination Method), in combination with wetland indicators and guidance provided in the *Regional Supplement* were applied for this delineation. Where differences in the two documents occur, the *Regional Supplement* takes precedence over the Corps *Manual* for applications in the *Midwest Region* (USACE 2010).

Field notes, samples, and photographs were taken at representative locations in each wetland basin, with data transect locations following spacing guidelines in the *Regional Supplement.* The respective wetland and upland plots for each wetland were documented on Wetland Determination Data Forms (**Appendix A**). Relevant photographs of the site and representative sample locations are included in **Appendix B**; all other photographs will be retained on file at SEH.

The locations of the delineated wetland boundaries were collected with a sub-meter accuracy Global Positioning System (GPS) unit and mapped. The results of the delineation are shown on **Figures 6 and 7**. The sample points noted identify where data was collected.

2.2.3 Previously Delineated Wetlands

Wetlands 4, 5, 6, 10, 11, 12, 13, 30, 31, 32, and 34 were previously delineated by others and approved by the USACE. The boundaries were verified and in most cases additional data was collected. If additional data was collected, data forms were prepared and a HGM assessment was done. A map showing these wetlands in addition to supplemental documents from the USACE for these delineations are included in **Appendix E**.

2.3 Hydrophytic/Wetland Vegetation

Wetland plant species nomenclature follows the *National Wetland Plant List* (USACE 2016). Identification was aided when necessary with field guides for the region. Vegetation was sampled in nested circular plots: 5-ft radius for herbaceous species, 15-ft radius for shrubs, and 30-ft radius for trees and vines.

2.4 Hydric/Wetland Soils

Soils were observed for hydric soil characteristics. Soils were examined in cores taken with a Dutch auger. Soil profiles were observed at a depth necessary to confirm hydric soil characteristics. Typical soil profile depths are typically within 18-24 inches below ground surface to allow for: (1) observation of an adequate portion of the soil profile to determine presence/absence of hydric soil characteristics; (2) observation of hydrology including depth to the water table and saturated soils; and, (3) identification of disturbances (*e.g.*, buried horizon, plow line, etc.). Soil color determinations were made using Munsell Soil Color Charts (Gretag-Macbeth 1994). Site soil characteristics were compared to those mapped and described in the

Soil Survey for Lincoln County (USDA 2019). Hydric soil characteristics were compared to those identified in the *Midwest Regional Supplement* (USACE 2010) and the most recent version of the NRCS publication *Field Indicators of Hydric Soils in the United States, Version 8.1* (USDA 2017).

2.5 Hydrology

Primary and secondary indicators of hydrology were identified in the field to determine the presence or absence of wetland hydrology, as described in the *Midwest Regional Supplement* (USACE 2010), and are listed in each wetland description. However, saturation and/or water tables were not able to be observed as the water was frozen at the time of the first site visit. Wetlands were verified during the 2019 growing season, and wetland hydrology indicators were observed.

3 Hydrogeomorphic (HGM) Assessment

The Hydrogeomophic (HGM) Approach is a method to assess the functional condition of wetlands by using data from a range of physical characteristics of the wetland collected during the field delineation. The HGM Approach incorporates data collected from the wetlands by using mathematic models to provide a level of wetland condition for each function. When combined in an aggregation equation, these functions produce a functional capacity index (FCI), a measure of the functional capacity of a wetland relative to reference standard wetlands on a scale of 0.0 – 1.0. A low FCI indicates that the wetland is performing a function at a level that is below that characteristic of reference standard.

While the FCI scores alone define relationships between variables of the wetland, when they are combined with the area of the wetland, a Functional Capacity Unit (FCU) score is generated. The FCU provides a basis for determination of impact and mitigation.

The HGM Approach was utilized on the 34 field delineated wetland basins described above. HGM was not used on wetlands that were previously delineated by others where new data was not taken. HGM scores were calculated as required for the wetland delineation. A summary table of the HGM scores is included below. Full calculations for HGM can be found in the Hydrogeomophic Model Worksheets in **Appendix D**. The total HGM score for the site is 858.50 FCUs.

The Prairie Pothole and Slope models were used for the wetlands in this project. Those that were mostly linear wetlands on low gradient slopes were characterized under the slope HGM model. Wetlands that were characterized under the Prairie Pothole HGM model were those that are within closed-contours.

Please see **Appendix D** for the HGM results table.

4 Results

At the time of the delineation, the active growing season for the area had concluded, but plants were identifiable as were the soil and hydrology indicators. The *Regional Supplement* (USACE 2010) describes several criteria for an active growing season, which include fresh growth on wetland herbaceous vegetative species, bud break on trees or shrubs, and/or active flowering plants.

The field delineation was conducted under precipitation conditions that were normal as compared to the historical average for the region according to National Weather Service (**Appendix C**). Most of the vegetation was identifiable, including all dominant species.

43 wetland basins were identified, delineated, and classified (**Figures 6 and 7**). The Wetland Determination Data Forms (**Appendix A**) indicate the dominant species of vegetation and the soil and hydrologic characteristics at representative locations around each basin. **Table 1** is a summary of the size and classification of each wetland basin delineated using Level 1 delineation methods and **Table 2** is a summary of the size and classification of each wetland basin delineated using Level 2 delineation methods.

The wetlands are grouped by HGM classification followed by Cowardin classification below **Table 2**.

4.1 Level 1 Delineation

Table 1 – Level 1 Wetland and Aquatic Resources

Wetland ID	Figure	Size (acres)[1]	HGM Classification	Latitude	Longitude
Wetland 33	Figure 6-2	0.0000[2]	Prairie Pothole	43.4861	-96.7958
Wetland 35	Figures 6-1 and 6-2	0.2186	Slope	43.4829	-96.7971
Wetland 36	Figure 6-1	0.2915	Slope	43.4685	-96.7963
Wetland 37	Figure 6-1	0.0000[2]	Prairie Pothole	43.4664	-96.7961

[1] Size includes areas of wetland within the area of investigation only. Wetlands may extend beyond the limits of the area investigated and actual wetland size may be larger than that indicated.

[2] Project area has been revised since original site visit in 2018. This basin is no longer within the project limits.

* Previously Delineated Wetland by others

4.2 Level 2 Delineation

Table 2 – Level 1 Wetland and Aquatic Resources

Wetland ID	Figure	Size (acres)[1]	HGM Classification	Lat	Long
Wetland 1	Figures 6-1 and 6-2	1.0355	Prairie Pothole	43.4760	-96.7945
Wetland 2	Figures 6-1 and 6-2	2.0282	Slope	43.4763	-96.7956
Wetland 3	Figures 6-1 and 6-2	0.6978	Slope	43.4760	-96.7927
Wetland 4*	Figure 6-2	0.0994	Slope	43.4818	-96.7948
Wetland 5*	Figures 6-1 and 6-2	1.4022	Prairie Pothole	43.4748	-96.7946

Wetland ID	Figure	Size (acres)[1]	HGM Classification	Lat	Long
Wetland 6*	Figure 6-1	2.0970	Prairie Pothole	43.4749	-96.7923
Wetland 7	Figure 6-1	0.0000[2]	Prairie Pothole	43.4720	-96.7941
Wetland 8	Figure 6-1	0.2329	Prairie Pothole	43.4721	-96.7957
Wetland 9	Figure 6-1	0.2507	Prairie Pothole	43.4735	-96.7956
Wetland 10*	Figure 6-1	1.5382	Slope	43.4749	-96.7999
Wetland 11*	Figures 6-1, 6-2, and 6-3	5.9340	Slope	43.4778	-96.7979
Wetland 12*	Figures 6-1 and 6-3	3.3435	Prairie Pothole	43.4750	-96.8026
Wetland 13*	Figures 6-1 and 6-3	0.0319	Prairie Pothole	43.4752	-96.8053
Wetland 14	Figures 6-3 and 6-4	0.7490	Prairie Pothole	43.4758	-96.8114
Wetland 15	Figures 6-3 and 6-4	0.3751	Slope	43.4754	-96.8107
Wetland 16	Figure 6-4	0.4261	Slope	43.4757	-96.8145
Wetland 17	Figure 6-4	0.7141	Slope	43.4758	-96.8171
Wetland 18	Figure 6-4	0.1251	Slope	43.4754	-96.8174
Wetland 19	Figure 6-4	0.4161	Slope	43.4757	-96.8223
Wetland 20	Figure 6-4	0.0940	Slope	43.4754	-96.8221
Wetland 21	Figure 6-4	0.0793	Slope	43.4754	-96.8248
Wetland 22	Figure 6-2	0.0000[2]	Slope	43.4865	-96.8003
Wetland 23	Figures 6-2 and 6-3	1.7661	Slope	43.4822	-96.7981
Wetland 24	Figures 6-2 and 6-3	0.1306	Slope	43.4817	-96.7994
Wetland 25	Figure 6-3	2.0234	Slope	43.4811	-96.7994
Wetland 26	Figure 6-3	1.6802	Slope	43.4843	-96.8067
Wetland 27	Figure 6-3	2.9032	Slope	43.4811	-96.8067
Wetland 28	Figure 6-3	0.2129	Prairie Pothole	43.4820	-96.8060
Wetland 29	Figure 6-3	0.9682	Prairie Pothole	43.4872	-96.8068
Wetland 30*	Figure 6-1	0.2320	Prairie Pothole	43.4896	-96.8060
Wetland 31*	Figure 6-1	0.0995	Prairie Pothole	43.4704	-96.7982
Wetland 32*	Figure 6-1	0.5616	Prairie Pothole	43.4695	-96.7977
Wetland 33	Figure 6-2	0.0000[2]	Prairie Pothole	43.4861	-96.7958
Wetland 34*	Figure 6-2	5.4493	Slope	43.4907	-96.7807
Wetland 38	Figures 6-1 and 6-2	0.0312	Slope	43.4755	-96.7981

Wetland ID	Figure	Size (acres)[1]	HGM Classification	Lat	Long
Wetland 39	Figures 6-1 and 6-2	0.0176	Slope	43.4756	-96.8023
Wetland 40	Figure 6-3	0.1701	Slope	43.4756	-96.8088
Wetland 41	Figure 6-4	0.1690	Slope	43.4755	-96.8153
Wetland 42	Figure 6-3	0.0924	Slope	43.4894	-96.8064
Wetland 43	Figure 6-3	0.1069	Slope	43.4770	-96.8064

[1] Size includes areas of wetland within the area of investigation only. Wetlands may extend beyond the limits of the area investigated and actual wetland size may be larger than that indicated.

[2] Project area has been revised since original site visit in 2018. This basin is no longer within the project limits.

* Previously Delineated Wetland by others

4.2.1 Prairie Pothole HGM Class Wetlands

Table 3 – Summary of Prairie Pothole Wetlands

Wetland ID	Figure	Cowardin Classification	Size (acres)[1]
Wetland 1	Figures 6-1 and 6-2	PEM1C	1.0355
Wetland 5	Figures 6-1 and 6-2	PEM1A	1.4022
Wetland 6	Figure 6-1	PEM1C	2.0970
Wetland 8	Figure 6-1	PEM1B	0.2329
Wetland 9	Figure 6-1	PEM1C	0.2507
Wetland 12	Figures 6-1 and 6-3	PEM1B	3.3435
Wetland 13*	Figures 6-1 and 6-3	PEM1C	0.0319
Wetland 14	Figures 6-3 and 6-4	PUBH	0.7490
Wetland 28	Figure 6-3	PEM1B	0.2129
Wetland 29	Figure 6-3	PEM1B	0.9682
Wetland 30*	Figure 6-1	PEM1A	0.2320
Wetland 31*	Figure 6-1	PEM1A	0.0995
Wetland 32*	Figure 6-1	PEM1C	0.5616
		Total acreage	**11.2169**

[1] Size includes areas of wetland within the area of investigation only. Wetlands may extend beyond the limits of the area investigated and actual wetland size may be larger than that indicated.

[1] Size includes areas of wetland within the area of investigation only. Wetlands may extend beyond the limits of the area investigated and actual wetland size may be larger than that indicated.

[2] Project area has been revised since original site visit in 2018. This basin is no longer within the project limits.

* Previously Delineated Wetland by others

4.2.1.1 PEM1A

Wetlands 5, 30, and 31 are PEM1A classified wetlands located within the project limits (**Figure 6**). Data was not taken for Wetlands 30 and 31, as they were previously delineated by others, and it presumed site conditions had not changed.

The dominant vegetation in Wetland 5 included lakebank sedge (*Carex lacustris* – OBL) and northern water-plantain (*Alisma triviale* – OBL) in the herbaceous stratum.

The soil profile of the wetland met technical hydric soil indicator F6 – Redox Dark Surface. The Lincoln County soil survey identifies soils in this wetland as predominantly nonhydric, inconsistent with field observations. This contradiction is likely due to the accuracy of the soil survey and the disturbed soils on site associated with farming practices.

Wetlands were verified during the 2019 growing season, and wetland hydrology indicators were observed.

The wetland boundary placement was primarily based upon a topographic change and a change in vegetation dominance. Dominant vegetation in the upland included soybeans (*Glycine max* – NI). Upland soils did not meet for hydric soils criteria. Hydrology indicators were not observed in the upland.

4.2.1.2 PEM1B

Wetlands 8, 12, 28, and 29 are PEM1B classified wetlands located within the project limits (**Figures 6-1 through 6-4**).

The dominant vegetation in these wetlands included northern water plantain, reed canary grass (*Phalaris arundinacea* – FACW), and freshwater cordgrass (*Spartina pectinata* – FACW), in the herbaceous stratum.

The soil profile of these wetlands met technical hydric soil indicator F6 – Redox Dark Surface. The Lincoln County soil survey identifies soils in this wetland as predominantly hydric or partially hydric, consistent with field observations.

Wetlands were verified during the 2019 growing season, and wetland hydrology indicators were observed.

The wetland boundary placement was primarily based upon a topographic change and a change in vegetation dominance. Dominant vegetation in the upland included corn (*Zea mays* – NI) and soybeans. Upland soils did not meet hydric soils criteria. Hydrology indicators were not observed in the upland.

4.2.1.3 PEM1C

Wetlands 1, 9, 13, and 32 are PEM1C classified wetlands located within the project limits (**Figures 6-1 through 6-4**). Data was not taken for Wetlands 13 and 32, as they were previously delineated by others.

The dominant vegetation in these wetlands included narrow-leaf cat-tail (*Typha angustifolia* – OBL), Kentucky blue grass (*Poa pratensis* – FAC), soybeans, and blunt spike-rush (*Eleocharis obtusa* – OBL) in the herbaceous stratum.

The soil profile of these wetlands met technical hydric soil indicator F6 – Redox Dark Surface. The Lincoln County soil survey identifies soils in this wetland as predominantly hydric or partially hydric, consistent with field observations.

Wetlands were verified during the 2019 growing season, and wetland hydrology indicators were observed.

The wetland boundary placement was primarily based upon a topographic change and a change in vegetation dominance. Dominant vegetation in the upland included yellow bristle grass (*Setaria pumila* – FAC), an unidentifiable sedge species (*Carex spp.*), and soybeans. Upland soils did not meet hydric soils criteria. Hydrology indicators were not observed in the upland.

4.2.1.4 PUBH

Wetland 14 is a PUBH classified wetland located within the project limits (**Figures 6-3 and 6-4**).

The dominant vegetation in this wetland included reed canary grass.

The soil profile in this wetland met technical hydric soil indicator F6 – Redox Dark Surface. The Lincoln County soil survey identifies soils in this wetland as predominantly hydric, consistent with field observations.

Wetlands were verified during the 2019 growing season, and wetland hydrology indicators were observed.

The wetland boundary placement was primarily based upon a topographic change and a change in vegetation dominance. Dominant vegetation in the upland included Kentucky blue grass. Upland soils did not meet hydric soils criteria. Hydrology indicators were not observed in the upland.

4.2.2 Slope HGM Class Wetlands

Table 4 – Summary of Slope Wetlands

Wetland ID	Figure	Cowardin Classification	Size (acres)[1]
Wetland 2	Figures 6-1 and 6-2	PEM1C	2.0282
Wetland 3	Figures 6-1 and 6-2	PEM1B	0.6978
Wetland 4	Figure 6-2	PEM1B	0.0994
Wetland 10	Figure 6-1	PEM1A	1.5382
Wetland 11	Figures 6-1, 6-2, and 6-3	PEM1B / PEM1C	5.9340
Wetland 15	Figures 6-3 and 6-4	PEM1A	0.3751
Wetland 16	Figure 6-4	PEM1B	0.4261
Wetland 17	Figure 6-4	PEM1C	0.7141
Wetland 18	Figure 6-4	PEM1C	0.1251
Wetland 19	Figure 6-4	PEM1C	0.4161
Wetland 20	Figure 6-4	PEM1B	0.0940
Wetland 21	Figure 6-4	PEM1B	0.0793
Wetland 23	Figures 6-2 and 6-3	PEM1C	1.7661

Wetland ID	Figure	Cowardin Classification	Size (acres)[1]
Wetland 24	Figures 6-2 and 6-3	PEM1A	0.1306
Wetland 25	Figure 6-3	PEM1B	2.0234
Wetland 26	Figure 6-3	PEM1B	1.6802
Wetland 27	Figure 6-3	PEM1B	2.9032
Wetland 38	Figures 6-1 and 6-2	PEM1B	0.0312
Wetland 39	Figures 6-1 and 6-2	PEM1C	0.0176
Wetland 40	Figure 6-3	PEM1B	0.1701
Wetland 41	Figure 6-4	PEM1B	0.1690
Wetland 42	Figure 6-3	PEM1B	0.0924
Wetland 43	Figure 6-3	PEM1B	0.1069
		Total acreage	**21.6181**

[1] Size includes areas of wetland within the area of investigation only. Wetlands may extend beyond the limits of the area investigated and actual wetland size may be larger than that indicated.

[1] Size includes areas of wetland within the area of investigation only. Wetlands may extend beyond the limits of the area investigated and actual wetland size may be larger than that indicated.

[2] Project area has been revised since original site visit in 2018. This basin is no longer within the project limits.

* Previously Delineated Wetland by others

4.2.2.1 PEM1A

Wetlands 10, 15, and 24 are PEM1A classified wetlands located within the project limits (**Figures 6-1 through 6-6**).

The dominant vegetation in the wetlands included freshwater cord grass, dark green bulrush (*Scirpus atrovirens* – OBL), curly dock (*Rumex crispus* – FAC), reed canary grass, and corn.

The soil profiles of the fresh (wet) meadow communities met technical hydric soil indicator F6 – Redox Dark Surface. The Lincoln County soil survey identifies soils in these wetlands as predominantly hydric and predominantly hydric, partially consistent with field observations.

Wetlands were verified during the 2019 growing season, and wetland hydrology indicators were observed.

The wetland boundary placement was primarily based upon a topographic change and a change in vegetation dominance. Dominant vegetation in the upland included soybeans, Kentucky blue grass, and corn. Upland soils did not meet hydric soils criteria. Hydrology indicators were not observed in the upland.

4.2.2.2 PEM1B

Wetlands 3, 4, 16, 20, 21, 25, 26, 27, 38, 40, 41, 42, 43 and a portion of 11 are PEM1B classified wetlands located within the project limits (**Figures 6-1 through 6-6**).

The dominant vegetation in the wetlands included reed canary grass, corn, tall scouring-rush (*Equisetum hyemale* – FACW), narrow-leaf cat-tail, and uptight (*Carex stricta* – OBL).

The soil profiles of the fresh (wet) meadow communities met technical hydric soil indicators F7 – Depleted Dark Surface and/or F6 – Redox Dark Surface. The Lincoln County soil survey identifies soils in this wetland as predominantly hydric, partially hydric, and predominantly hydric, partially consistent with field observations.

Wetlands were verified during the 2019 growing season, and wetland hydrology indicators were observed.

The wetland boundary placement was primarily based upon a topographic change and a change in vegetation dominance. Dominant vegetation in the upland included yellow bristle grass, an unidentifiable sedge species, corn, soybeans, and Kentucky blue grass. Upland soils did not meet hydric soils criteria. Hydrology indicators were not observed in the upland.

4.2.2.3 PEM1C

Wetlands 2, 17, 18, 19, 23, and 39 are PEM1C classified wetlands located within the project limits (**Figures 6-1 through 6-6**).

The dominant vegetation in the wetlands included narrow-leaf cat-tail, reed canary grass, dark-green bulrush, and Kentucky blue grass.

The soil profiles of the fresh (wet) meadow communities met technical hydric soil indicators F7 – Depleted Dark Surface and/or F6 – Redox Dark Surface. The Lincoln County soil survey identifies soils in this wetland as predominantly hydric and predominantly hydric, partially consistent with field observations.

Wetlands were verified during the 2019 growing season, and wetland hydrology indicators were observed.

The wetland boundary placement was primarily based upon a topographic change and a change in vegetation dominance. Dominant vegetation in the upland included yellow bristle grass, an unidentifiable sedge species, corn, soybeans, and Kentucky blue grass. Upland soils did not meet hydric soils criteria. Hydrology indicators were not observed in the upland.

5 Regulatory Considerations

Wetlands in the project area are regulated by agencies at the local, regional, state, and federal levels including the USACE and the EPA at the federal level. It is presumed that the USACE has jurisdiction over all the wetlands in the project are due to their and connectivity proximity to the River. The primary state agencies in involved in wetlands protection include the South Dakota Department of Environment and Natural Resources (SDDENR), South Dakota Department of Game, Fish, and Parks (SDGFP), and the South Dakota Department of Agriculture (SDDA). These agencies may require a field review of the wetland delineation.

Construction plans that propose any direct alteration or indirect impact to wetlands or watercourses within the project area will require permits from the appropriate regulatory agencies. Violation of wetland regulations can result in substantial civil and/or criminal penalties.

6 Bibliography

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Figures

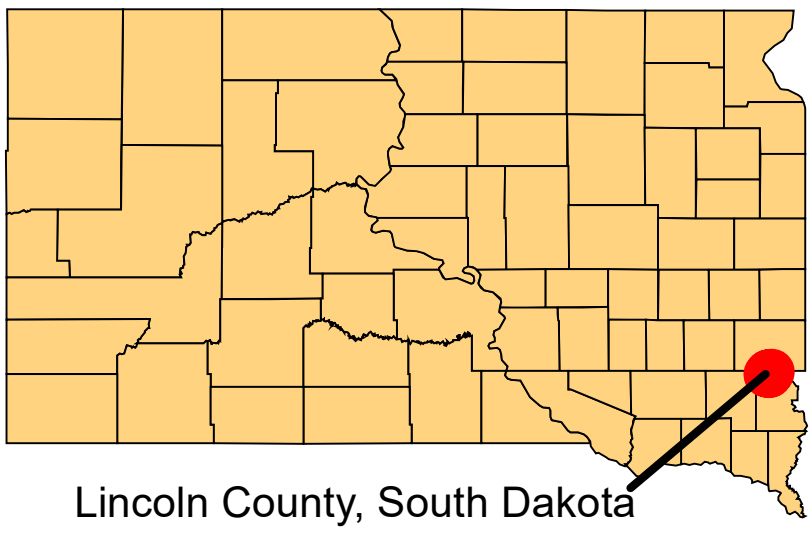
Legend

Revised Area of Investigation

0 2 4 Miles

N W E S

Lincoln County, South Dakota



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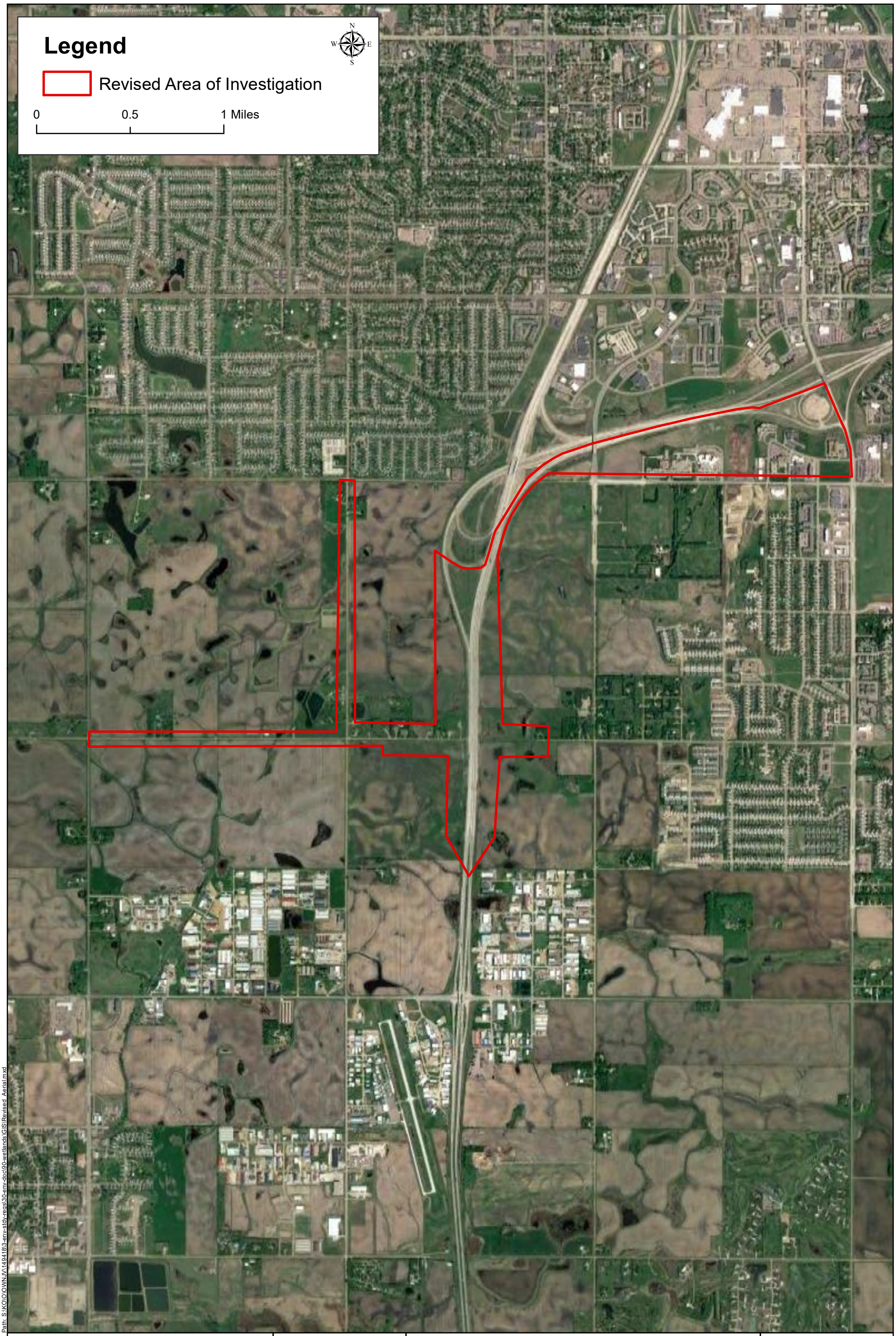
SEH 3535 VADNAIS CENTER DR. ST. PAUL, MN 55110 PHONE: (651) 490-2000 FAX: (888) 908-8166 TF: (800) 325-2055 www.sehinc.com	Project: OWNJV 149418 Print Date: 9/14/2019 Map by: bnelson Projection: UTM NAD 83 Zone 14N Source: SEH, ESRI, SDDOT, USGS, FWS, NRCS, Google	***SITE LOCATION*** 85th Street Interchange Lincoln County, South Dakota

Figure 1



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AERIAL PHOTOGRAPHY

85th Street Interchange
Lincoln County, South Dakota

Figure 2

Legend

Revised Area of Investigation

Wetland Type

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine

0 0.5 1 Miles

N W E S

469th AVE

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NATIONAL WETLANDS INVENTORY (NWI)

85th Street Interchange
Lincoln County, South Dakota

Figure 3

Legend

Revised Area of Investigation

Hydric Rating

- Predominantly Hydric
- Partially Hydric
- Predominantly Nonhydric
- Nonhydric

0 0.5 1 Miles

Map Unit	Soil Name	Map Unit	Soil Name
AcA	Alcester silty clay loam, 0 to 2 percent slopes	EpD	Ethan-Betts loams, 9 to 15 percent slopes
AcA	Alcester silty clay loam, cool, 0 to 2 percent slopes	EsB	Egan-Shindler complex, 2 to 6 percent slopes
Af	Alcester silty clay loam, channeled	EsC	Egan-Shindler complex, 6 to 9 percent slopes
Ba	Baltic silty clay loam, 0 to 1 percent slopes	EuC	Ethan-Egan complex, 6 to 9 percent slopes
Bb	Baltic silty clay loam, ponded	EwB	Egan-Worthing complex, 0 to 6 percent slopes
Bo	Bon loam, 0 to 2 percent slopes, occasionally flooded	HuA	Huntimer silty clay loam, 0 to 2 percent slopes
Bp	Orthents, loamy	La	Lamo silty clay loam, cool, 0 to 2 percent slopes, occasionally flooded
Ca	Chancellor-Tetonka complex, 0 to 2 percent slopes	Mh	Baltic silty clay loam, ponded
Cc	Chancellor-Tetonka complex, 0 to 2 percent slopes	Or	Orthents, loamy
Cd	Chancellor-Viborg silty clay loams	Sa	Salmo silty clay loam, very wet
Ch	Chancellor-Wakonda-Tetonka complex	SkD2	Shindler-Egan complex, 9 to 15 percent slopes, eroded
Ch	Chaska loam, channeled	Te	Tetonka silt loam, 0 to 2 percent slopes, frequently ponded
Cm	Clamo silty clay, 0 to 1 percent slopes	W	Water
DcA	Davis loam, 0 to 2 percent slopes	Wa	Wakonda-Chancellor complex, 0 to 2 percent slopes
Dd	Davison-Crossplain clay loams, 0 to 2 percent slopes	WeA	Wentworth silty clay loam, 0 to 2 percent slopes
DmA	Dempster silt loam, 0 to 2 percent slopes	WhA	Wentworth-Chancellor silty clay loams, 0 to 2 percent slopes
EaB	Egan silty clay loam, 3 to 6 percent slopes	WhA	Wentworth-Trent complex, 0 to 2 percent slopes
EcB	Egan-Chancellor silty clay loams, 0 to 4 percent slopes	Wo	Worthing silty clay loam, 0 to 1 percent slopes
EeB	Egan-Ethan-Trent complex, 1 to 6 percent slopes	Wr	Worthing-Davison complex, 0 to 2 percent slopes
EfA	Egan-Trent silty clay loams, 0 to 2 percent slopes	Ws	Worthing silty clay loam, 0 to 1 percent slopes
EgB	Egan-Wentworth-Trent complex, 2 to 6 percent slopes		

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Map by: bnelson
Projection: UTM NAD 83 Zone 14N
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Lincoln County Soil Survey
85th Street Interchange
Lincoln County, South Dakota

Figure 4

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Revised Area of Investigation

Elevation

High : 477.604

Low : 429.354

0 0.75 1.5 Miles

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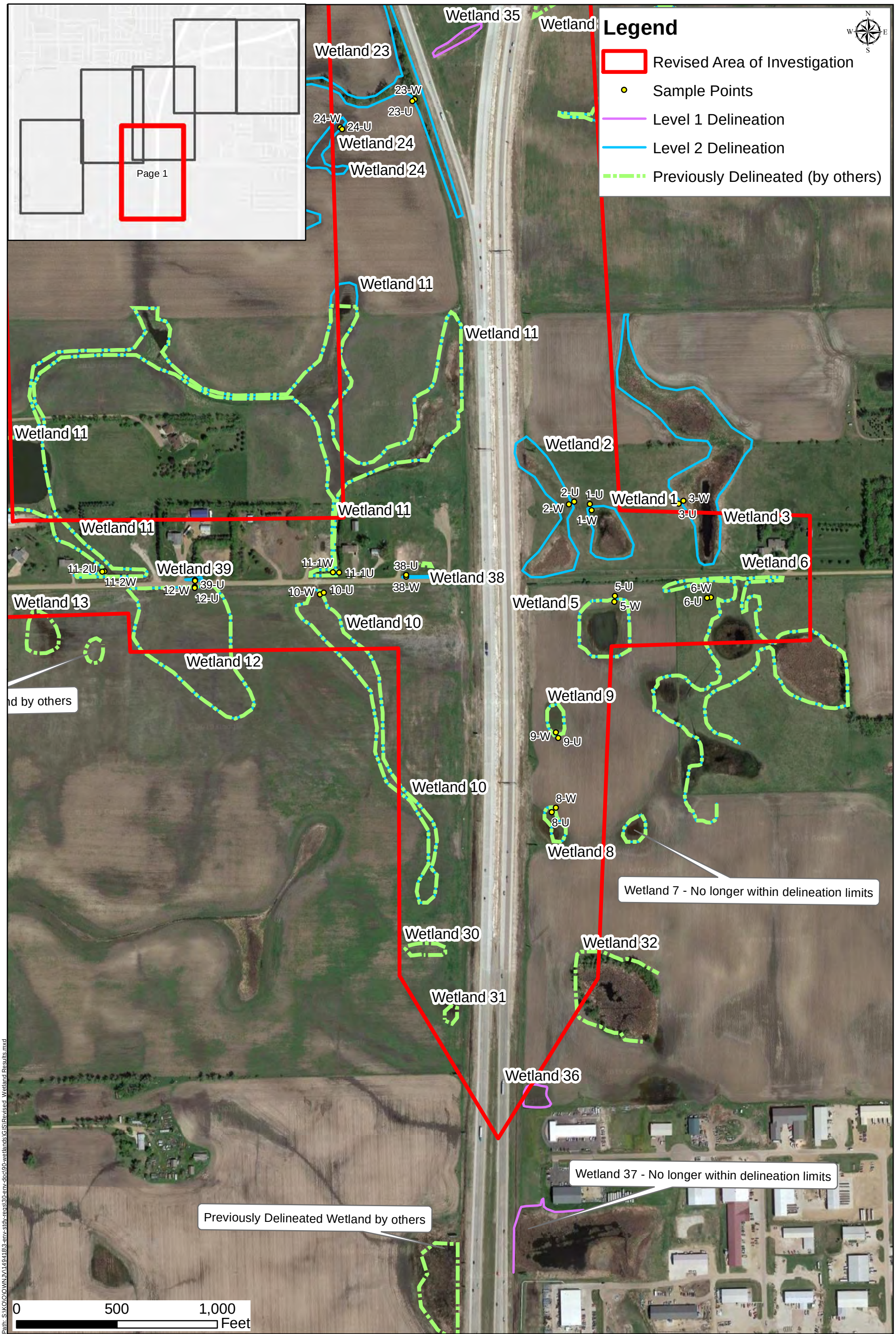
LIDAR TOPOGRAPHY
85th Street Interchange
Lincoln County, South Dakota

Figure 5



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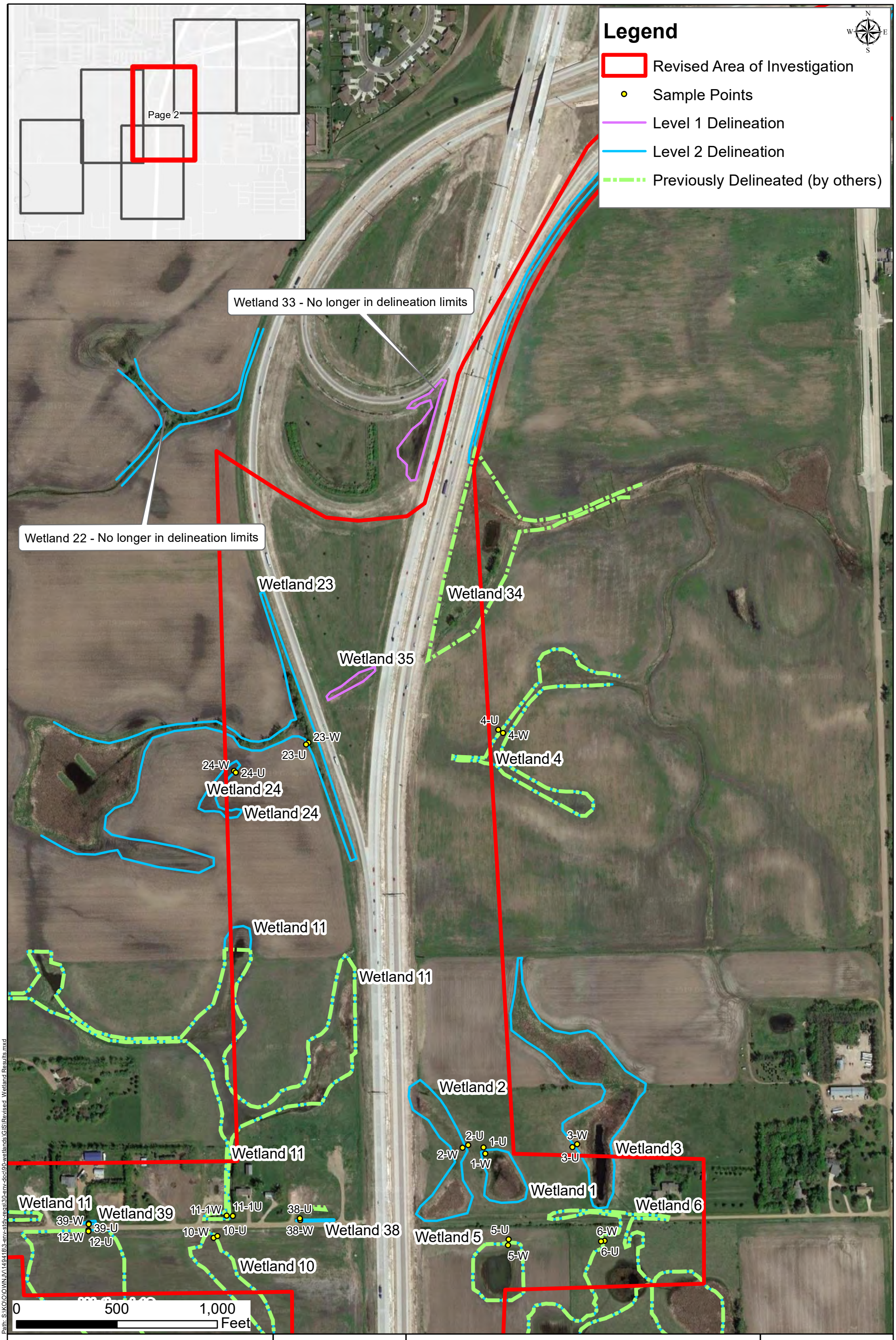
Wetland Delineation Results - Revised

85th Street Interchange
Lincoln County, South Dakota

Figure 6-1



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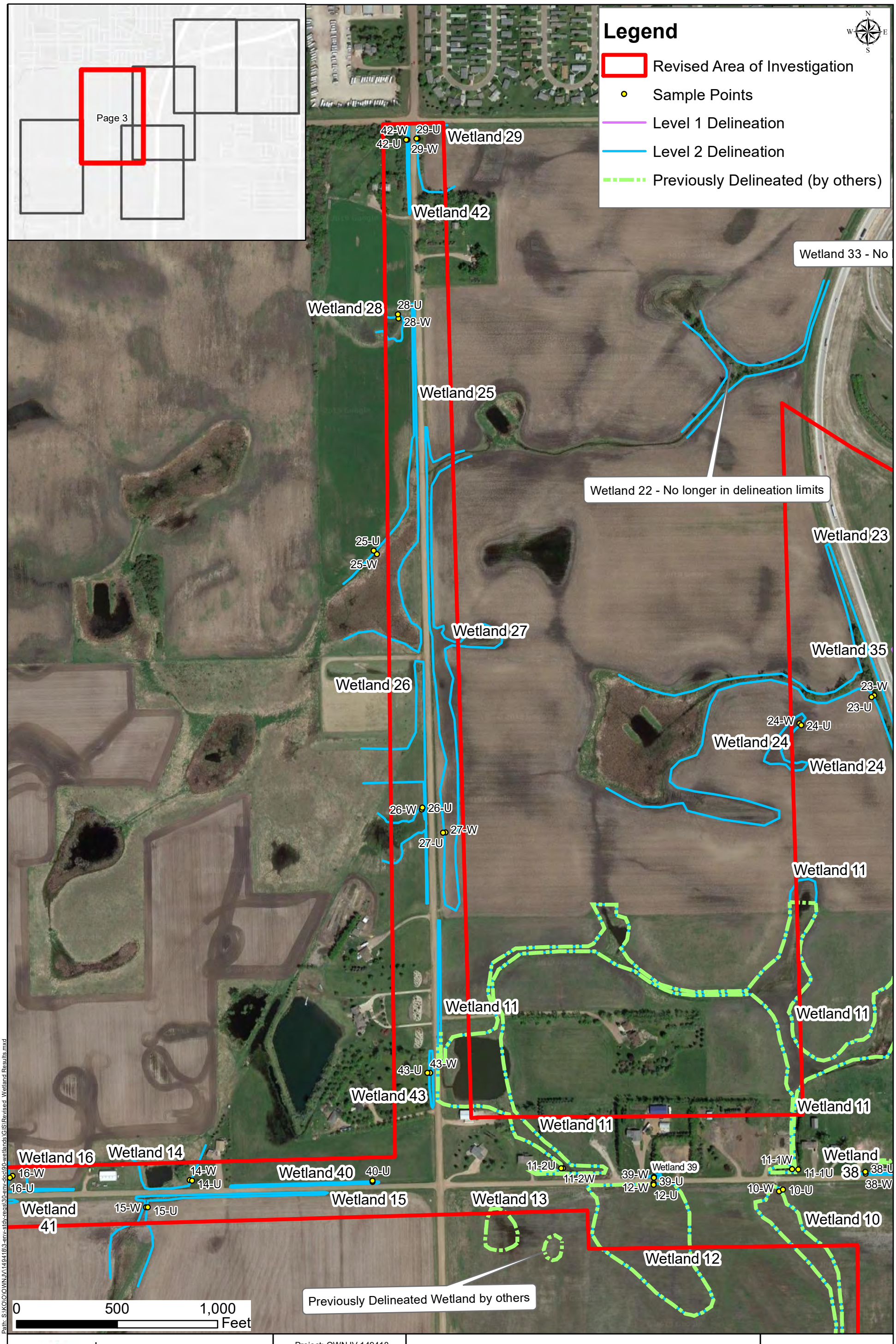
Print Date: 9/16/2019

Map by: bnelson
Projection: UTM NAD Zone 14N
Source: SEH ESRI SDDOT, USGS, FWS, NRCS

Wetland Delineation Results

85th Street Interchange
Lincoln County, South Dakota

Figure 6-2



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Map by: bnelson
Projection: UTM NAD Zone 14N
Source: SEH ESRI SDDOT, USGS, FWS, NRCS

Wetland Delineation Results

85th Street Interchange
Lincoln County, South Dakota

Figure 6-3

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Map by: bnelson
Projection: UTM NAD Zone 14N
Source: SEH ESRI SDDOT, USGS, FWS, NRCS

Wetland Delineation Results

85th Street Interchange
Lincoln County, South Dakota

Figure 6-4

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Map by: bnelson
Projection: UTM NAD Zone 14N
Source: SEH ESRI SDDOT, USGS, FWS, NRCS

Wetland Delineation Results

85th Street Interchange
Lincoln County, South Dakota

Figure 6-5

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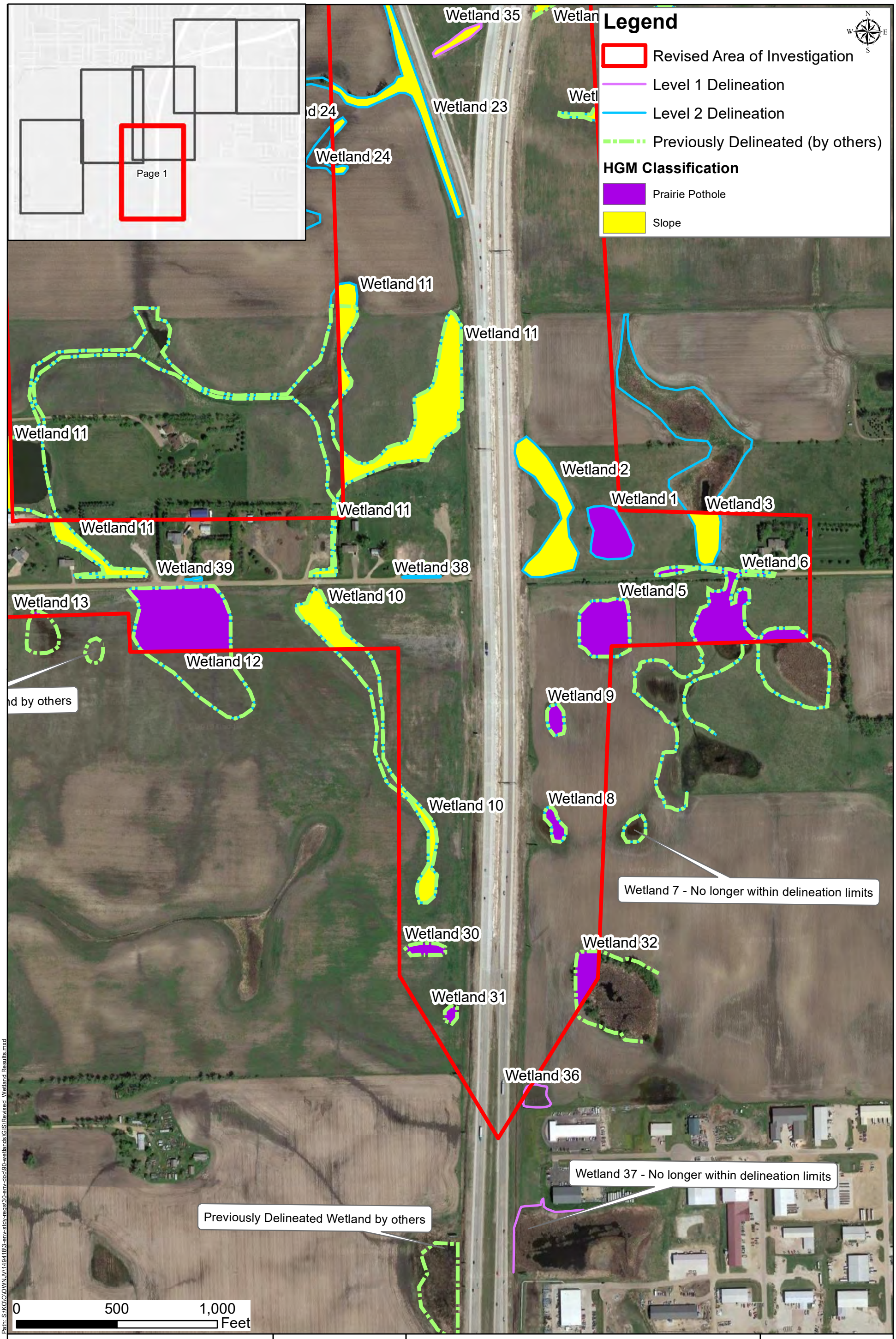
Print Date: 9/16/2019

Map by: bnelson
Projection: UTM NAD Zone 14N
Source: SEH ESRI SDDOT, USGS, FWS, NRCS

Wetland Delineation Results

85th Street Interchange
Lincoln County, South Dakota

Figure 6-6



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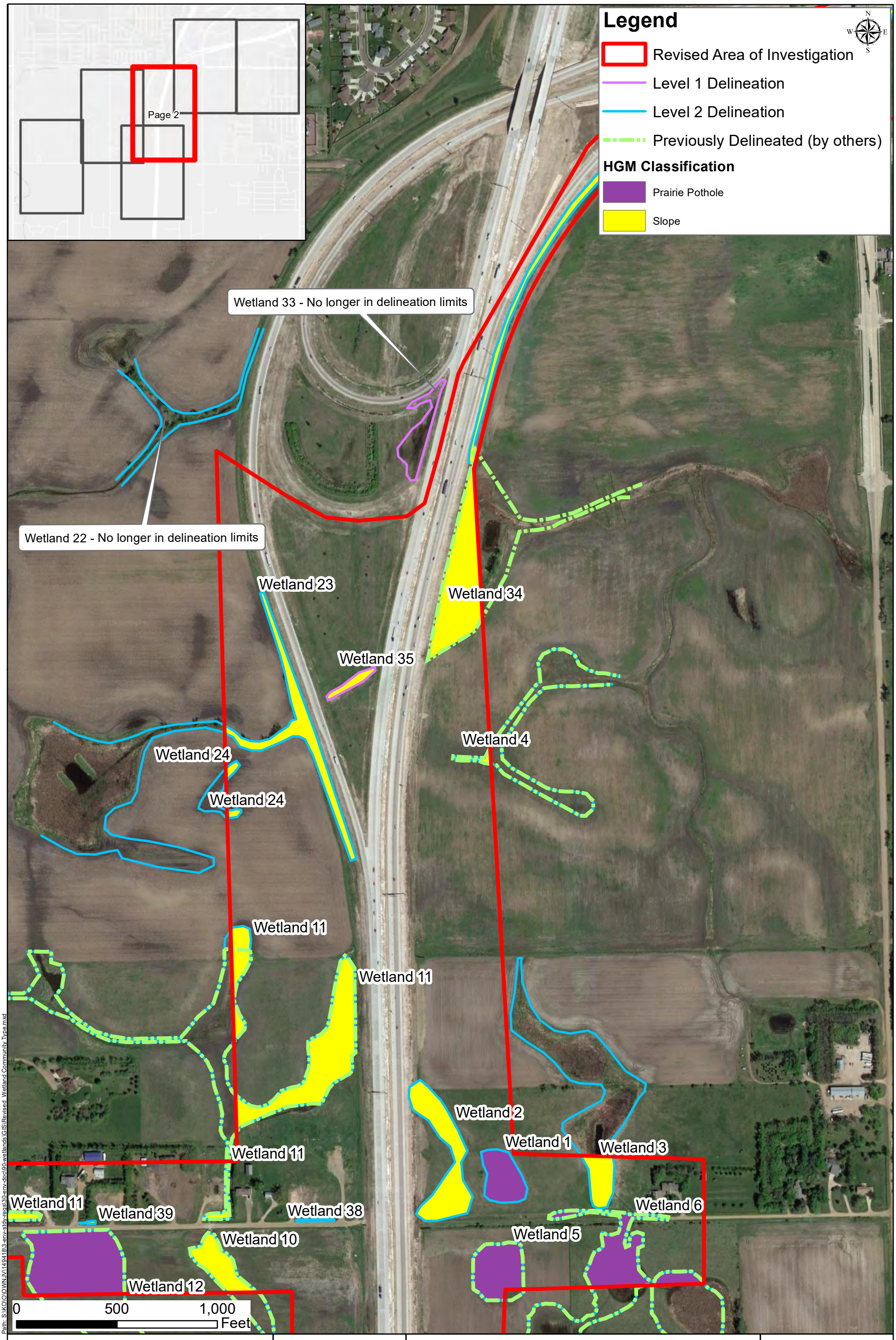
Project: OWNJV 149418
Print Date: 10/1/2019

Map by: bnelson
Projection: UTM NAD Zone 14N
Source: SEH ESRI SDDOT, USGS, FWS, NRCS

HGM Classification

85th Street Interchange
Lincoln County, South Dakota

Figure 7-1



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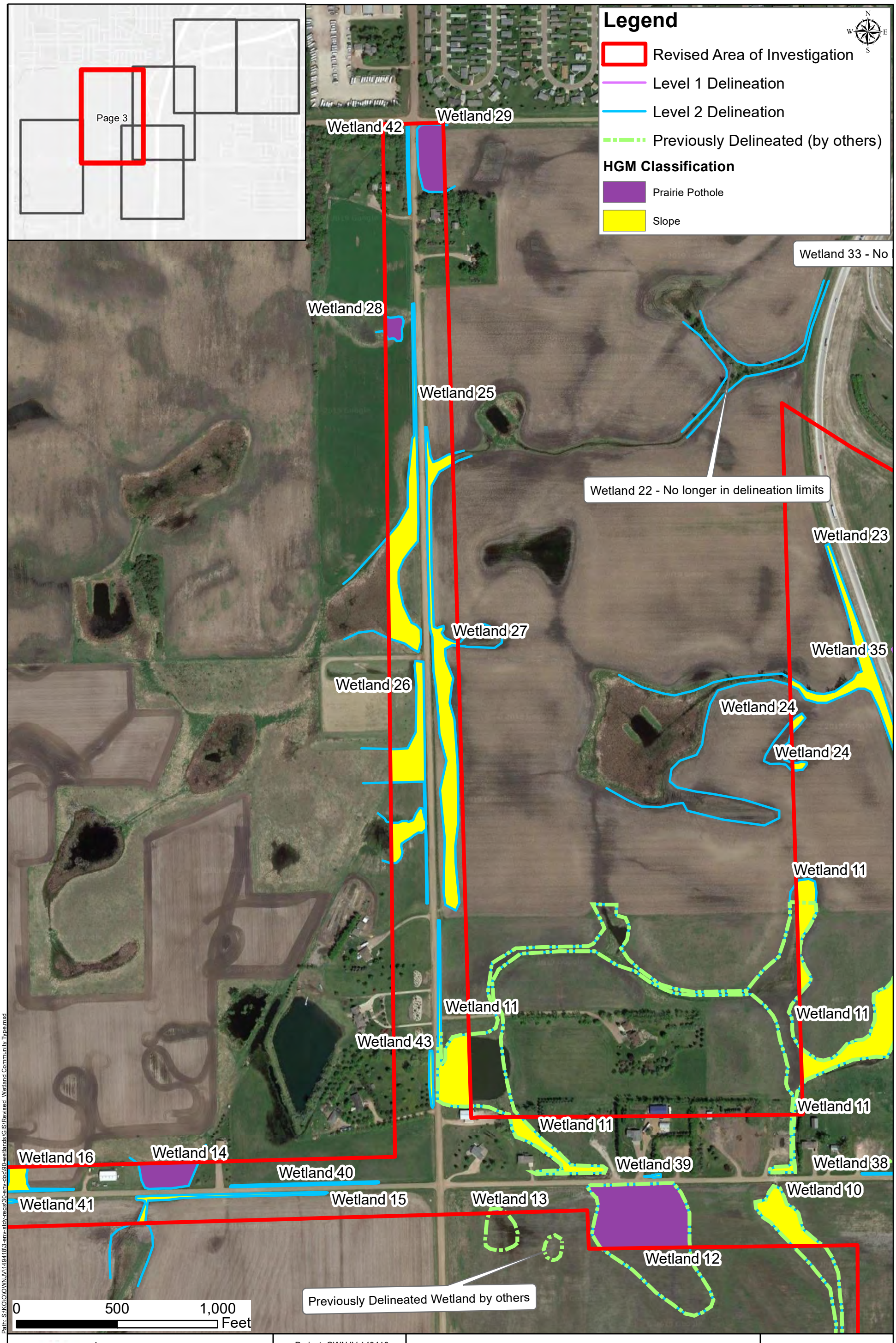
Project: OWNJV 149418
Print Date: 9/12/2019

Map by: bnelson
Projection: UTM NAD Zone 14N
Source: SEH ESRI SDDOT, USGS, FWS, NRCS

HGM Classification
85th Street Interchange
Lincoln County, South Dakota

Figure 7-2



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Print Date: 9/12/2019

Map by: bnelson
Projection: UTM NAD Zone 14N
Source: SEH ESRI SDDOT, USGS, FWS, NRCS

HGM Classification

85th Street Interchange
Lincoln County, South Dakota

Figure 7-3

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Projection: UTM NAD Zone 14N
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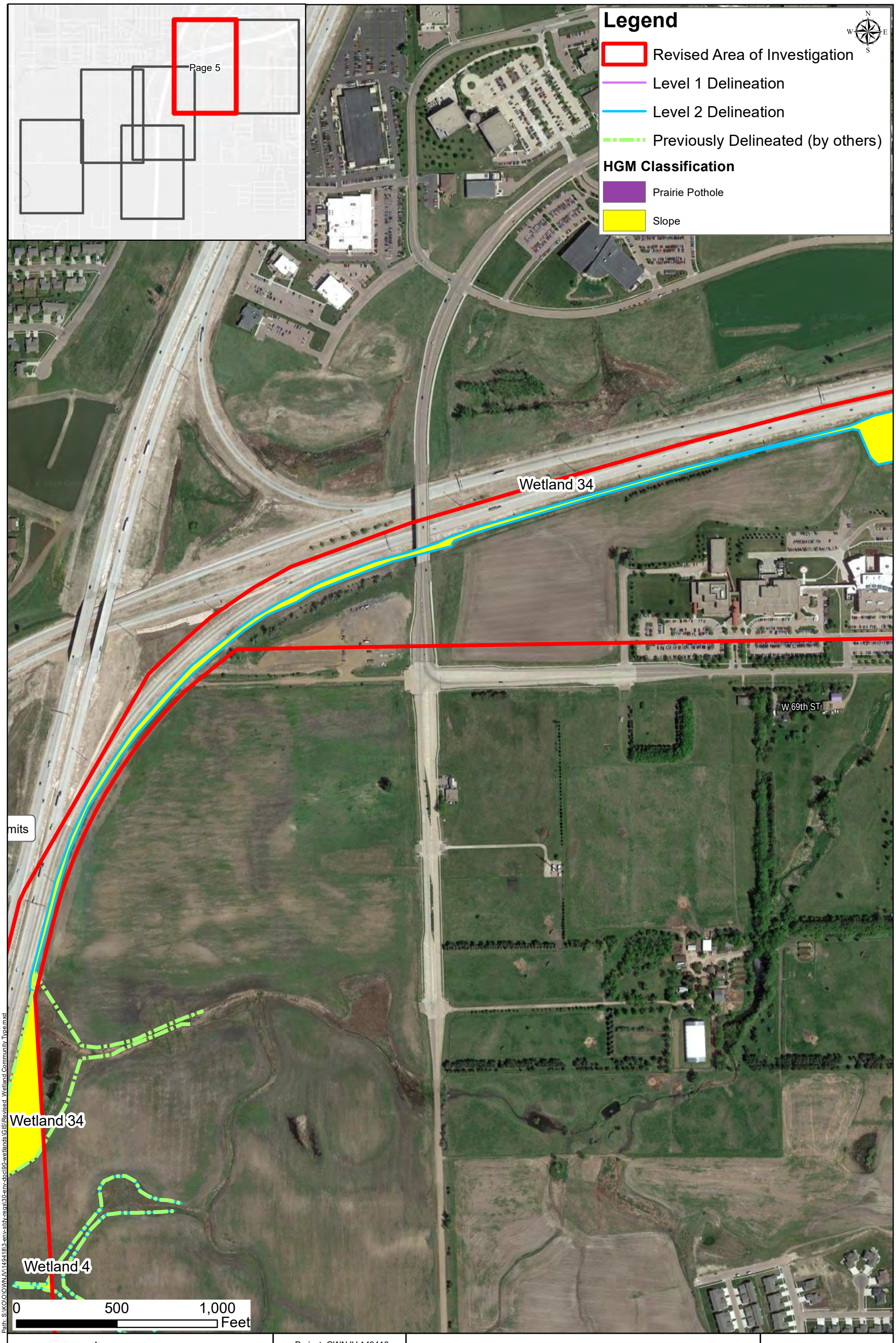
HGM Classification

85th Street Interchange
Lincoln County, South Dakota

Figure 7-4



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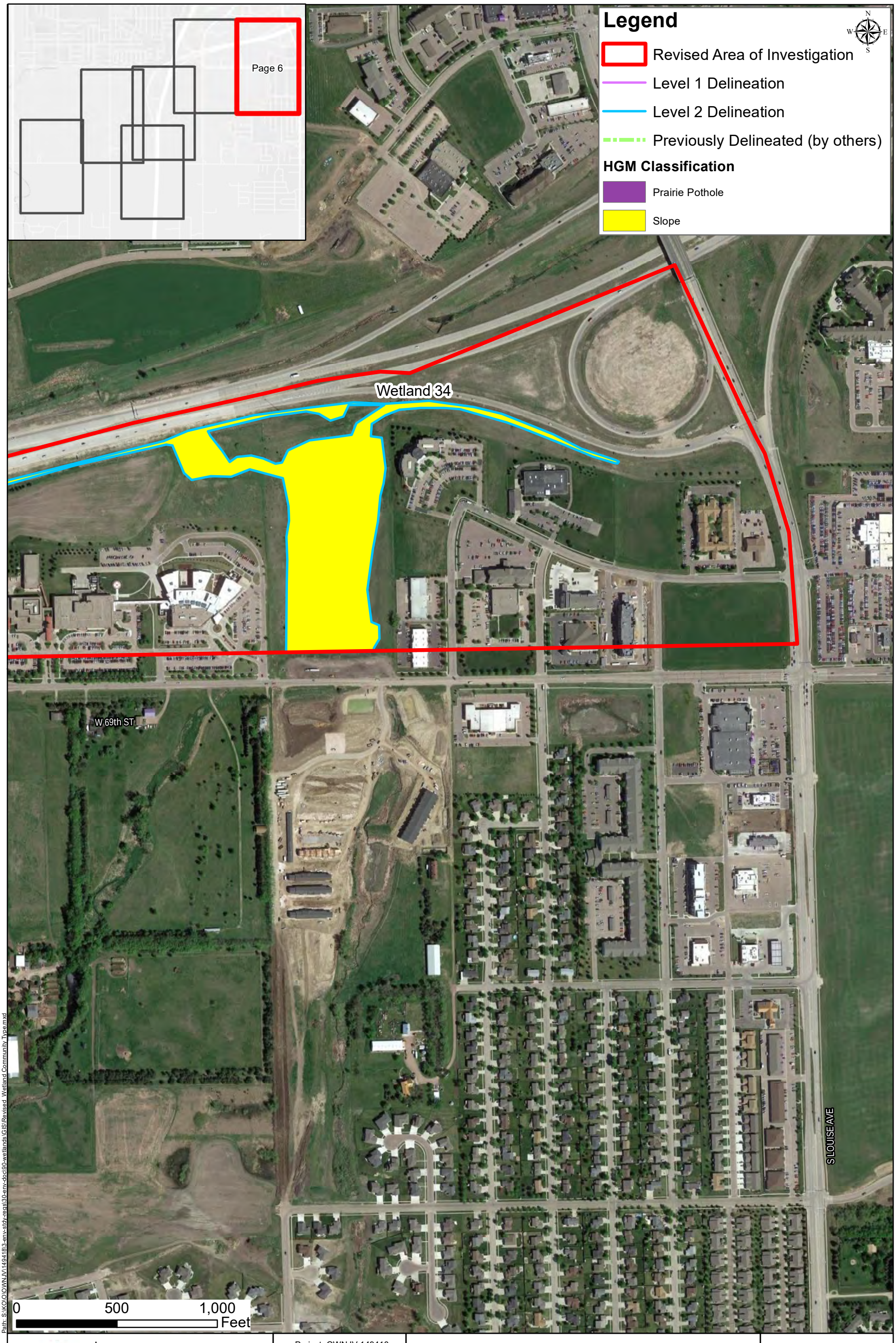
Projection: UTM NAD Zone 14N
Source: SEH ESRI SDDOT, USGS, FWS, NRCS

HGM Classification

85th Street Interchange
Lincoln County, South Dakota

Figure 7-5



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HGM Classification

85th Street Interchange
Lincoln County, South Dakota

Figure 7-6

Appendix A

Wetland Delineation Data Forms

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 1-U
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS18R50W
Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None
Slope (%): 3 | Lat: 43.4765 | Long: -96.7949 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Egan-Chancellor silty clay loams, 0 to 4 percent slopes | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y
Hydric soil present? N
Indicators of wetland hydrology present? N

Is the sampled area within a wetland? N
If yes, optional wetland site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Setaria pumila* -- *Yellow Bristle Grass*	80	Y	FAC
2	*Carex spp.* --	20	Y	NI
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 2 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	80	x 3 =	240	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	80	(A)	240	(B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 1-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14	10YR 2/1	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 1-W
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS18R50W
Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave
Slope (%): 1 | Lat: 43.4764 | Long: -96.7948 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Egan-Chancellor silty clay loams, 0 to 4 percent slopes | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y
Hydric soil present? Y
Indicators of wetland hydrology present? Y

Is the sampled area within a wetland? Y
If yes, optional wetland site ID: Wetland 1

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)			Absolute % Cover	Dominant Species	Indicator Status
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)					
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Herb stratum (Plot size: 5' Radius)					
1	*Typha angustifolia*	-- *Narrow-Leaf Cat-Tail*	60	Y	OBL
2	*Poa pratensis*	-- *Kentucky Blue Grass*	15	N	FAC
3	*Carex lacustris*	-- *Lakebank Sedge*	15	N	OBL
4	*Spartina pectinata*	-- *Freshwater Cord Grass*	10	N	FACW
5		--			
6		--			
7		--			
8		--			
9		--			
10		--			
			100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)					
1	--				
2	--				
			0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 1 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	75	x 1 =	75
FACW species	10	x 2 =	20
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		140 (B)

Prevalence Index = B/A = 1.40

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 1-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-4	7.5YR 2.5/2	100					Silty Clay Loam	
4-16	10YR 2/1	95	10YR 3/6	5	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches):	___
Water table present?	Yes	___	No	X	Depth (inches):	___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 2-U

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS18R50W

Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None

Slope (%): 3 | Lat: 43.47649503 | Long: -96.79514624 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Egan-Chancellor silty clay loams, 0 to 4 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

(If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	Y
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N

If yes, optional wetland site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Setaria pumila* -- *Yellow Bristle Grass*	80	Y	FAC
2	*Carex spp.* --	20	Y	NI
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	80	x 3 =	240
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	80 (A)		240 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 2-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14	10YR 2/2	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 2-W
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS18R50W
Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave
Slope (%): 1 | Lat: 43.47645947 | Long: -96.79525073 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Egan-Chancellor silty clay loams, 0 to 4 percent slopes | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y
Hydric soil present? Y
Indicators of wetland hydrology present? Y

Is the sampled area within a wetland? Y
If yes, optional wetland site ID: Wetland 2

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)			Absolute % Cover	Dominant Species	Indicator Status
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)					
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Herb stratum (Plot size: 5' Radius)					
1	*Typha angustifolia*	-- *Narrow-Leaf Cat-Tail*	80	Y	OBL
2	*Carex lacustris*	-- *Lakebank Sedge*	10	N	OBL
3	*Poa pratensis*	-- *Kentucky Blue Grass*	5	N	FAC
4	*Spartina pectinata*	-- *Freshwater Cord Grass*	5	N	FACW
5		--			
6		--			
7		--			
8		--			
9		--			
10		--			
			100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)					
1	--				
2	--				
			0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 1 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	90	x 1 =	90
FACW species	5	x 2 =	10
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		115 (B)

Prevalence Index = B/A = 1.15

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 2-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	5YR 3/1	100					Silty Clay Loam	
6-18	10YR 2/1	95	2.5YR 3/6	5	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):	2
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 3-U

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS18R50W

Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None

Slope (%): 4 | Lat: 43.47642718 | Long: -96.79318805 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Tentonka silt loam, 0 to 2 percent slopes, frequently ponded | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

(If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? Y	
Hydric soil present? N	**Is the sampled area within a wetland?** N
Indicators of wetland hydrology present? N	If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Setaria pumila* -- *Yellow Bristle Grass*	80	Y	FAC
2	*Carex spp.* --	20	Y	FACW
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	80	x 3 =	240
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		280 (B)

Prevalence Index = B/A = 2.80

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 3-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-16	10YR 2/1	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 3-W
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS18R50W
Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave
Slope (%): 1 | Lat: 43.47646679 | Long: -96.79309889 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Tentonka silt loam, 0 to 2 percent slopes, frequently ponded | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y
Hydric soil present? Y
Indicators of wetland hydrology present? Y

Is the sampled area within a wetland? Y
If yes, optional wetland site ID: Wetland 3

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)			Absolute % Cover	Dominant Species	Indicator Status
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)					
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Herb stratum (Plot size: 5' Radius)					
1	*Phalaris arundinacea*	-- *Reed Canary Grass*	70	Y	FACW
2	*Spartina pectinata*	-- *Freshwater Cord Grass*	20	N	FACW
3	*Typha angustifolia*	-- *Narrow-Leaf Cat-Tail*	10	N	OBL
4	*Scirpus cyperinus*	-- *Cottongrass Bulrush*	5	N	OBL
5	*Hordeum jubatum*	-- *Fox-Tail Barley*	5	N	FAC
6	*Asclepias syriaca*	-- *Common Milkweed*	5	N	FACU
7	*Aster spp.*	--	5	N	N/A
8		--			
9		--			
10		--			
			120	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)					
1	--				
2	--				
			0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 1 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	15	x 1 =	15
FACW species	90	x 2 =	180
FAC species	5	x 3 =	15
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column totals	115 (A)		230 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 3-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-16	10YR 2/2	95	2.5YR 4/6	5	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches):	___
Water table present?	Yes	___	No	X	Depth (inches):	___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 4-U

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS18R50W

Landform (hillslope, terrace, etc.): Backslope | Local relief (concave, convex, none): None

Slope (%): 4 | Lat: 43.4821618 | Long: -96.79437184 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Chancellor-Tetonka complex, 0 to 2 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

(If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? N	
Hydric soil present? N	**Is the sampled area within a wetland?** N
Indicators of wetland hydrology present? N	If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Zea mays* -- *Corn*	100	Y	NI
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	0	(A)	0	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 4-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-15	10YR 2/2	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 4-W
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS18R50W
Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave
Slope (%): 1 | Lat: 43.48211507 | Long: -96.79428685 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Chancellor-Tetonka complex, 0 to 2 percent slopes | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y
Hydric soil present? Y
Indicators of wetland hydrology present? Y

Is the sampled area within a wetland? Y
If yes, optional wetland site ID: Wetland 4

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)			Absolute % Cover	Dominant Species	Indicator Status
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)					
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Herb stratum (Plot size: 5' Radius)					
1	*Zea mays*	-- *Corn*	60	Y	NI
2	*Phalaris arundinacea*	-- *Reed Canary Grass*	30	Y	FACW
3	*Arctium minus*	-- *Lesser Burrdock*	10	N	FACU
4	*Rumex crispus*	-- *Curly Dock*	5	N	FAC
5		--			
6		--			
7		--			
8		--			
9		--			
10		--			
			105	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)					
1	--				
2	--				
			0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 2 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	5	x 3 =	15
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column totals	45 (A)		115 (B)

Prevalence Index = B/A = 2.56

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL

Sampling Point: 4-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14	10YR 2/1	90	10YR 4/6	10	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):	1
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 5-U
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS19R50W
Landform (hillslope, terrace, etc.): footslope | Local relief (concave, convex, none): None
Slope (%): 2 | Lat: 43.47519242 | Long: -96.79443002 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Egan-Chancellor silty clay loams, 0 to 4 percent slopes | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? N
Hydric soil present? N
Indicators of wetland hydrology present? N

Is the sampled area within a wetland? N
If yes, optional wetland site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0 = Total Cover		
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0 = Total Cover		
Herb stratum (Plot size: 5' Radius)				
1	*Glycine max* -- *Soybeans*	60	Y	NI
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		60 = Total Cover		
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0 = Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across all Strata: 1 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	0	(A)	0	(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 5-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-10	10YR 2/2	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 5-W
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS19R50W
Landform (hillslope, terrace, etc.): Toeslope | Local relief (concave, convex, none): Concave
Slope (%): 1 | Lat: 43.47511001 | Long: -96.79444333 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Egan-Chancellor silty clay loams, 0 to 4 percent slopes | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y
Hydric soil present? Y
Indicators of wetland hydrology present? Y

Is the sampled area within a wetland? Y
If yes, optional wetland site ID: Wetland 5

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)			Absolute % Cover	Dominant Species	Indicator Status
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)					
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Herb stratum (Plot size: 5' Radius)					
1	*Carex lacustris*	-- *Lakebank Sedge*	50	Y	OBL
2	*Alisma triviale*	-- *Northern Water-Plantain*	30	Y	OBL
3	*Rumex crispus*	-- *Curly Dock*	5	N	FAC
4	*Hordeum jubatum*	-- *Fox-Tail Barley*	5	N	FAC
5	*Persicaria lapathifolia*	-- *Dock-Leaf Smartweed*	5	N	FACW
6	*Scirpus atrovirens*	-- *Dark-Green Bulrush*	5	N	OBL
7	*Schoenoplectus tabernaemontani*	-- *Soft-Stem Club-Rush*	5	N	OBL
8	*Glycine max*	-- *Soybeans*	5	N	NI
9		--			
10		--			
			110	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)					
1	--				
2	--				
			0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across all Strata: 2 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	90	x 1 =	90
FACW species	5	x 2 =	10
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	105 (A)		130 (B)

Prevalence Index = B/A = 1.24

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 5-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-16	7.5YR 3/1	95	7.5YR 5/6	5	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):	3
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 6-U

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS19R50W

Landform (hillslope, terrace, etc.): footslope | Local relief (concave, convex, none): None

Slope (%): 5 | Lat: 43.47513194 | Long: -96.79269862 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Egan-Chancellor silty clay loams, 0 to 4 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

(If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? N	
Hydric soil present? N	**Is the sampled area within a wetland?** N
Indicators of wetland hydrology present? N	If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Glycine max* -- *Soybeans*	50	Y	NI
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		50	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	0	(A)	0	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 6-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	10YR 3/1	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 6-W
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS19R50W
Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave
Slope (%): 0 | Lat: 43.4751389 | Long: -96.79263129 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Egan-Chancellor silty clay loams, 0 to 4 percent slopes | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y
Hydric soil present? Y
Indicators of wetland hydrology present? Y

Is the sampled area within a wetland? Y
If yes, optional wetland site ID: Wetland 6

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)			Absolute % Cover	Dominant Species	Indicator Status
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)					
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Herb stratum (Plot size: 5' Radius)					
1	*Schoenoplectus tabernaemontani*	-- *Soft-Stem Club-Rush*	50	Y	OBL
2	*Phalaris arundinacea*	-- *Reed Canary Grass*	30	Y	FACW
3	*Spartina pectinata*	-- *Freshwater Cord Grass*	10	N	FACW
4	*Rumex crispus*	-- *Curly Dock*	5	N	FAC
5	*Hordeum jubatum*	-- *Fox-Tail Barley*	5	N	FAC
6	*Xanthium strumarium*	-- *Rough Cockleburr*	5	N	FAC
7	*Carex lacustris*	-- *Lakebank Sedge*	5	N	OBL
8		--			
9		--			
10		--			
			110	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)					
1	--				
2	--				
			0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across all Strata: 2 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	55	x 1 =	55
FACW species	40	x 2 =	80
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	110 (A)		180 (B)

Prevalence Index = B/A = 1.64

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 6-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-5	10YR 2/1	100					Silty Clay Loam	
5-18	10YR 2/2	90	10YR 5/6	10	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):	2
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 8-U

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS19R50W

Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None

Slope (%): 3 | Lat: 43.47225829 | Long: -96.79572263 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Egan silty clay loam, 3 to 6 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

(If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? N

Hydric soil present? N

Indicators of wetland hydrology present? N

Is the sampled area within a wetland? N

If yes, optional wetland site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Glycine max* -- *Soybeans*	100	Y	NI
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	0	(A)	0	(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 8-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	10YR 3/2	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 8-W
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS19R50W
Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave
Slope (%): 1 | Lat: 43.47232063 | Long: -96.79564298 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Egan silty clay loam, 3 to 6 percent slopes | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y
Hydric soil present? Y
Indicators of wetland hydrology present? Y

Is the sampled area within a wetland? Y
If yes, optional wetland site ID: Wetland 8

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)			Absolute % Cover	Dominant Species	Indicator Status
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)					
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Herb stratum (Plot size: 5' Radius)					
1	*Alisma triviale*	-- *Northern Water-Plantain*	75	Y	OBL
2	*Typha angustifolia*	-- *Narrow-Leaf Cat-Tail*	5	N	OBL
3	*Hordeum jubatum*	-- *Fox-Tail Barley*	5	N	FAC
4	*Poa palustris*	-- *Fowl Blue Grass*	5	N	FACW
5	*Eleocharis obtusa*	-- *Blunt Spike-Rush*	5	N	OBL
6		--			
7		--			
8		--			
9		--			
10		--			
			95	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)					
1	--				
2	--				
			0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 1 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	85	x 1 =	85
FACW species	5	x 2 =	10
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	95 (A)		110 (B)

Prevalence Index = B/A = 1.16

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
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SOIL

Sampling Point: 8-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-2	2.5YR 2.5/2	100					Silty Clay Loam	
2-16	10YR 2/1	95	10YR 3/6	5	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):	2
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 9-U
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS19R50W
Landform (hillslope, terrace, etc.): footslope | Local relief (concave, convex, none): None
Slope (%): 2 | Lat: 43.47326979 | Long: -96.79556719 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Chancellor-Viborg silty clay loams | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? N
Hydric soil present? N
Indicators of wetland hydrology present? N

Is the sampled area within a wetland? N
If yes, optional wetland site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0 = Total Cover		
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0 = Total Cover		
Herb stratum (Plot size: 5' Radius)				
1	*Glycine max* -- *Soybeans*	70	Y	NI
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		70 = Total Cover		
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0 = Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across all Strata: 1 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	0	(A)	0	(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation
____ Dominance test is >50%
____ Prevalence index is ≤3.0*
____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 9-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14	10YR 3/2	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 9-W
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS19R50W
Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave
Slope (%): 0 | Lat: 43.47334944 | Long: -96.79560556 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Chancellor-Viborg silty clay loams | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y
Hydric soil present? Y
Indicators of wetland hydrology present? Y

Is the sampled area within a wetland? Y
If yes, optional wetland site ID: Wetland 9

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)			Absolute % Cover	Dominant Species	Indicator Status
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)					
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Herb stratum (Plot size: 5' Radius)					
1	*Poa pratensis*	-- *Kentucky Blue Grass*	30	Y	FAC
2	*Glycine max*	-- *Soybeans*	10	Y	NI
3	*Eleocharis obtusa*	-- *Blunt Spike-Rush*	10	Y	OBL
4		--			
5		--			
6		--			
7		--			
8		--			
9		--			
10		--			
			50	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)					
1	--				
2	--				
			0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across all Strata: 3 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	10	x 1 =	10
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	40 (A)		100 (B)

Prevalence Index = B/A = 2.50

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL

Sampling Point: 9-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14	10YR 3/2	90	10YR 5/6	10	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):	2
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 10-U

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS19R50W

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none): None

Slope (%): 5 | Lat: 43.4753405 | Long: -96.79989607 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Worthing silty clay loam, 0 to 1 percent slopes | NWI Classification: PEM1C

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N	**Is the sampled area within a wetland?**	N
Hydric soil present?	N	If yes, optional wetland site ID:	
Indicators of wetland hydrology present?	N		

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Glycine max* -- *Soybeans*	100	Y	NI
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	0	(A)	0	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 10-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14	10YR 2/2	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 10-W

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS19R50W

Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave

Slope (%): 0 | Lat: 43.47531934 | Long: -96.79996803 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Worthing silty clay loam, 0 to 1 percent slopes | NWI Classification: PEM1C

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y	
Hydric soil present? Y	**Is the sampled area within a wetland?** Y
Indicators of wetland hydrology present? Y	If yes, optional wetland site ID: Wetland 10

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)			Absolute % Cover	Dominant Species	Indicator Status
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)					
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Herb stratum (Plot size: 5' Radius)					
1	*Spartina pectinata*	-- *Freshwater Cord Grass*	15	Y	FACW
2	*Scirpus atrovirens*	-- *Dark-Green Bulrush*	10	Y	OBL
3	*Rumex crispus*	-- *Curly Dock*	10	Y	FAC
4	*Persicaria lapathifolia*	-- *Dock-Leaf Smartweed*	5	N	FACW
5	*Typha angustifolia*	-- *Narrow-Leaf Cat-Tail*	5	N	OBL
6	*Glycine max*	-- *Soybeans*	5	N	NI
7	--				
8	--				
9	--				
10	--				
			50	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)					
1	--				
2	--				
			0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	15	x 1 =	15
FACW species	20	x 2 =	40
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	45 (A)		85 (B)

Prevalence Index = B/A = 1.89

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 10-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-5	10YR 3/1	100					Silty Clay Loam	
5-18	10YR 2/1	95	10YR 4/6	5	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):	2
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 11-1U
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS18R50W
Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None
Slope (%): 2 | Lat: 43.47561 | Long: -96.79959 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Worthing silty clay loam, 0 to 1 percent slopes | NWI Classification: PEM1Cx
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N
If yes, optional wetland site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Poa pratensis* -- *Kentucky Blue Grass*	100	Y	FAC
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 1 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	100	x 3 =	300	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	100	(A)	300	(B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 11-1U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14	10YR 3/1	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 11-1W

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS18R50W

Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave

Slope (%): 0 | Lat: 43.47561 | Long: -96.79971 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Worthing silty clay loam, 0 to 1 percent slopes | NWI Classification: PEM1Cd

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y	
Hydric soil present? Y	**Is the sampled area within a wetland?** Y
Indicators of wetland hydrology present? Y	If yes, optional wetland site ID: Wetland 11

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Phalaris arundinacea* -- *Reed Canary Grass*	100	Y	FACW
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	100	x 2 =	200	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	100	(A)	200	(B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL

Sampling Point: 11-1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	10YR 2/1	90	10YR 5/8	5	C	M	Silty Clay Loam	
			10YR 5/2	5	D	M		
8-16	10YR 2/1	95	10YR 5/8	5	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- X Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches):	___
Water table present?	Yes	___	No	X	Depth (inches):	___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 11-2U
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS18R50W
Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None
Slope (%): 4 | Lat: 43.47571024 | Long: -96.80404252 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Egan-Worthing complex, 0 to 6 percent slopes | NWI Classification: PEM1Cx
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N
If yes, optional wetland site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Poa pratensis* -- *Kentucky Blue Grass*	100	Y	FAC
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 1 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	100	x 3 =	300
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		300 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 11-2U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	10YR 3/1	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 11-2W

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS18R50W

Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave

Slope (%): 0 | Lat: 43.47571184 | Long: -96.80400468 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Egan-Worthing complex, 0 to 6 percent slopes | NWI Classification: PEM1Cx

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y
Hydric soil present?	Y
Indicators of wetland hydrology present?	Y
Is the sampled area within a wetland?	Y
If yes, optional wetland site ID:	Wetland 11

Remarks: (Explain alternative procedures here or in a separate report.)

Typhj

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)			Absolute % Cover	Dominant Species	Indicator Status
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)					
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Herb stratum (Plot size: 5' Radius)					
1	*Typha angustifolia*	-- *Narrow-Leaf Cat-Tail*	70	Y	OBL
2	*Scirpus atrovirens*	-- *Dark-Green Bulrush*	15	N	OBL
3	*Phragmites australis*	-- *Common Reed*	15	N	FACW
4		--			
5		--			
6		--			
7		--			
8		--			
9		--			
10		--			
			100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)					
1	--				
2	--				
			0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	85	x 1 =	85
FACW species	15	x 2 =	30
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		115 (B)

Prevalence Index = B/A = 1.15

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 11-2W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	10YR 2/2	85	10YR 5/8	10	C	M	Silty Clay Loam	
			10YR 5/2	5	D	M		
8-16	10YR 2/1	95	10YR 5/8	5	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- X Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):	1
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 12-U

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS18R50W

Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None

Slope (%): 4 | Lat: 43.47545196 | Long: -96.80231414 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Baltic silty clay loam, ponded | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? N

Hydric soil present? N

Indicators of wetland hydrology present? N

Is the sampled area within a wetland? N

If yes, optional wetland site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Glycine max* -- *Soybeans*	100	Y	NI
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	0	(A)	0	(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 12-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	10YR 2/1	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 12-W
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS18R50W
Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave
Slope (%): 1 | Lat: 43.47547072 | Long: -96.80231417 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Baltic silty clay loam, ponded | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y
Hydric soil present? Y
Indicators of wetland hydrology present? Y

Is the sampled area within a wetland? Y
If yes, optional wetland site ID: Wetland 12

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)			Absolute % Cover	Dominant Species	Indicator Status
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)					
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Herb stratum (Plot size: 5' Radius)					
1	*Phalaris arundinacea*	-- *Reed Canary Grass*	60	Y	FACW
2	*Spartina pectinata*	-- *Freshwater Cord Grass*	30	Y	FACW
3	*Poa pratensis*	-- *Kentucky Blue Grass*	10	N	FAC
4	*Glycine max*	-- *Soybeans*	10	N	NI
5		--			
6		--			
7		--			
8		--			
9		--			
10		--			
			110	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)					
1	--				
2	--				
			0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across all Strata: 2 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	90	x 2 =	180
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		210 (B)

Prevalence Index = B/A = 2.10

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 12-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14	10YR 2/1	95	10YR 5/8	5	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches):	___
Water table present?	Yes	___	No	X	Depth (inches):	___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 14-U

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W

Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None

Slope (%): 5 | Lat: 43.47567538 | Long: -96.8109661 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Worthing silty clay loam, 0 to 1 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y	
Hydric soil present? N	**Is the sampled area within a wetland?** N
Indicators of wetland hydrology present? N	If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Poa pratensis* -- *Kentucky Blue Grass*	100	Y	FAC
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	100	x 3 =	300
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		300 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
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SOIL **Sampling Point:** 14-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14	10YR 2/1	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 14-W

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W

Landform (hillslope, terrace, etc.): footslope | Local relief (concave, convex, none): Concave

Slope (%): 3 | Lat: 43.47568483 | Long: -96.81100629 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Worthing silty clay loam, 0 to 1 percent slopes | NWI Classification: PEM1/ABF

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y	
Hydric soil present? Y	**Is the sampled area within a wetland?** Y
Indicators of wetland hydrology present? Y	If yes, optional wetland site ID: Wetland 14

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)			Absolute % Cover	Dominant Species	Indicator Status
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)					
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Herb stratum (Plot size: 5' Radius)					
1	*Phalaris arundinacea*	-- *Reed Canary Grass*	90	Y	FACW
2	*Typha angustifolia*	-- *Narrow-Leaf Cat-Tail*	10	N	OBL
3	--				
4	--				
5	--				
6	--				
7	--				
8	--				
9	--				
10	--				
			100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)					
1	--				
2	--				
			0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	10	x 1 =	10
FACW species	90	x 2 =	180
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		190 (B)

Prevalence Index = B/A = 1.90

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Center of basin is unvegetated--open water.

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL

Sampling Point: 14-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-10	10YR 3/1	95	10YR 4/6	5	C	M	Silty Clay Loam	
10-16	10YR 3/1	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):	1
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 15-U

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS14R51W

Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None

Slope (%): 4 | Lat: 43.47532942 | Long: -96.81180722 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Worthing silty clay loam, 0 to 1 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y	
Hydric soil present? N	**Is the sampled area within a wetland?** N
Indicators of wetland hydrology present? N	If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Poa pratensis* -- *Kentucky Blue Grass*	100	Y	FAC
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	100	x 3 =	300
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		300 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 15-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-10	10YR 2/1	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 15-W
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS14R51W
Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave
Slope (%): 1 | Lat: 43.47533006 | Long: -96.81184058 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Worthing silty clay loam, 0 to 1 percent slopes | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y
Hydric soil present? Y
Indicators of wetland hydrology present? Y

Is the sampled area within a wetland? Y
If yes, optional wetland site ID: Wetland 15

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Phalaris arundinacea* -- *Reed Canary Grass*	100	Y	FACW
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 1 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	100	x 2 =	200	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	100	(A)	200	(B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 15-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14	10YR 2/2	95	7.5YR 4/6	5	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches):	___
Water table present?	Yes	___	No	X	Depth (inches):	___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 16-U

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W

Landform (hillslope, terrace, etc.): Backslope | Local relief (concave, convex, none): None

Slope (%): 5 | Lat: 43.47577956 | Long: -96.81437875 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Egan-Worthing complex, 0 to 6 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

(If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	N		
Hydric soil present?	N	**Is the sampled area within a wetland?**	N
Indicators of wetland hydrology present?	N	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Glycine max* -- *Soybeans*	100	Y	NI
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	0	(A)	0	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL

Sampling Point: 16-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14	10YR 3/1	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 16-W
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W
Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave
Slope (%): | Lat: 43.47580546 | Long: -96.81432842 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Egan-Worthing complex, 0 to 6 percent slopes | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation , soil , or hydrology significantly disturbed?
Are vegetation , soil , or hydrology naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y
Hydric soil present? Y
Indicators of wetland hydrology present? Y

Is the sampled area within a wetland? Y
If yes, optional wetland site ID: Wetland 16

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)			Absolute % Cover	Dominant Species	Indicator Status
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)					
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Herb stratum (Plot size: 5' Radius)					
1	*Phalaris arundinacea*	-- *Reed Canary Grass*	50	Y	FACW
2	*Equisetum hyemale*	-- *Tall Scouring-Rush*	25	Y	FACW
3	*Typha angustifolia*	-- *Narrow-Leaf Cat-Tail*	25	Y	OBL
4		--			
5		--			
6		--			
7		--			
8		--			
9		--			
10		--			
			100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)					
1	--				
2	--				
			0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across all Strata: 3 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	25	x 1 =	25
FACW species	75	x 2 =	150
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		175 (B)

Prevalence Index = B/A = 1.75

Hydrophytic Vegetation Indicators:

- [ ] Rapid test for hydrophytic vegetation
- [X] Dominance test is >50%
- [X] Prevalence index is ≤3.0*
- [ ] Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 16-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-4	10YR 2/1	100					Silty Clay Loam	
4-18	10YR 2/1	95	7.5YR 4/6	5	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 17-U

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W

Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None

Slope (%): 4 | Lat: 43.47571582 | Long: -96.81768613 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Worthing silty clay loam, 0 to 1 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N		
Hydric soil present?	N	**Is the sampled area within a wetland?**	N
Indicators of wetland hydrology present?	N	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Glycine max* -- *Soybeans*	100	Y	NI
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	0	(A)	0	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 17-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14	10YR 3/1	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 17-W
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W
Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave
Slope (%): 1 | Lat: 43.4756712 | Long: -96.81761364 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Worthing silty clay loam, 0 to 1 percent slopes | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y
Hydric soil present? Y
Indicators of wetland hydrology present? Y

Is the sampled area within a wetland? Y
If yes, optional wetland site ID: Wetland 17

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)			Absolute % Cover	Dominant Species	Indicator Status
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)					
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Herb stratum (Plot size: 5' Radius)					
1	*Phalaris arundinacea*	-- *Reed Canary Grass*	50	Y	FACW
2	*Typha angustifolia*	-- *Narrow-Leaf Cat-Tail*	25	Y	OBL
3	*Scirpus atrovirens*	-- *Dark-Green Bulrush*	20	Y	OBL
4	*Persicaria lapathifolia*	-- *Dock-Leaf Smartweed*	5	N	FACW
5		--			
6		--			
7		--			
8		--			
9		--			
10		--			
			100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)					
1	--				
2	--				
			0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across all Strata: 3 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	45	x 1 =	45
FACW species	55	x 2 =	110
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		155 (B)

Prevalence Index = B/A = 1.55

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 17-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-4	7.5YR 2.5/2	100					Silty Clay Loam	
4-16	10YR 2/1	95	10YR 3/6	5	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):	2
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 18-U
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS14R51W
Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None
Slope (%): 3 | Lat: 43.4754002 | Long: -96.8171921 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Worthing silty clay loam, 0 to 1 percent slopes | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N	**Is the sampled area within a wetland?**	N
Hydric soil present?	N	If yes, optional wetland site ID:	
Indicators of wetland hydrology present?	N		

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Zea mays* -- *Corn*	100	Y	NI
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across all Strata: 1 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	0	(A)	0	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 18-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	5YR 3/1	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/25/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 18-W

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W

Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave

Slope (%): 0 | Lat: 43.47544078 | Long: -96.81721188 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Worthing silty clay loam, 0 to 1 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

(If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? Y

Hydric soil present? Y

Indicators of wetland hydrology present? Y

Is the sampled area within a wetland? Y

If yes, optional wetland site ID: Wetland 18

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)			Absolute % Cover	Dominant Species	Indicator Status
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)					
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Herb stratum (Plot size: 5' Radius)					
1	*Typha angustifolia*	-- *Narrow-Leaf Cat-Tail*	75	Y	OBL
2	*Phalaris arundinacea*	-- *Reed Canary Grass*	15	N	FACW
3	*Rumex crispus*	-- *Curly Dock*	5	N	FAC
4	*Persicaria lapathifolia*	-- *Dock-Leaf Smartweed*	5	N	FACW
5		--			
6		--			
7		--			
8		--			
9		--			
10		--			
			100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)					
1	--				
2	--				
			0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	75	x 1 =	75
FACW species	20	x 2 =	40
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		130 (B)

Prevalence Index = B/A = 1.30

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 18-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-16	10YR 2/2	90	2.5YR 4/6	10	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches):	___
Water table present?	Yes	___	No	X	Depth (inches):	___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 19-U

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W

Landform (hillslope, terrace, etc.): footslope | Local relief (concave, convex, none): None

Slope (%): 5 | Lat: 43.47567347 | Long: -96.82195162 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Chancellor-Tetonka complex, 0 to 2 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

(If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? N

Hydric soil present? N

Indicators of wetland hydrology present? N

Is the sampled area within a wetland? N

If yes, optional wetland site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Zea mays* -- *Corn*	100	Y	NI
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	0	(A)	0	(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 19-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-15	10YR 2/1	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/25/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 19-W

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W

Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave

Slope (%): 1 | Lat: 43.4756402 | Long: -96.82199103 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Chancellor-Tetonka complex, 0 to 2 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

(If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? Y

Hydric soil present? Y

Indicators of wetland hydrology present? Y

Is the sampled area within a wetland? Y

If yes, optional wetland site ID: Wetland 19

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Typha angustifolia* -- *Narrow-Leaf Cat-Tail*	80	Y	OBL
2	*Phalaris arundinacea* -- *Reed Canary Grass*	20	Y	FACW
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	80	x 1 =	80	
FACW species	20	x 2 =	40	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	100	(A)	120	(B)

Prevalence Index = B/A = 1.20

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 19-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-16	10YR 2/2	95	2.5YR 4/6	5	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):	2
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 20-U

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W

Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None

Slope (%): 4 | Lat: 43.47542369 | Long: -96.82199032 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Chancellor-Tetonka complex, 0 to 2 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

(If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? N

Hydric soil present? N

Indicators of wetland hydrology present? N

Is the sampled area within a wetland? N

If yes, optional wetland site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Zea mays* -- *Corn*	100	Y	NI
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	0	(A)	0	(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
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SOIL **Sampling Point:** 20-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	10YR 2/2	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 20-W

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W

Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave

Slope (%): 1 | Lat: 43.47542369 | Long: -96.82199032 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Chancellor-Tetonka complex, 0 to 2 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y	
Hydric soil present? Y	**Is the sampled area within a wetland?** Y
Indicators of wetland hydrology present? Y	If yes, optional wetland site ID: Wetland 20

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Phalaris arundinacea* -- *Reed Canary Grass*	100	Y	FACW
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	100	x 2 =	200	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	100	(A)	200	(B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 20-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	10YR 2/2	100					Silty Clay Loam	
6-18	10YR 2/2	95	7.5YR 4/6	5	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):	2
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 21-U

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W

Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None

Slope (%): 5 | Lat: 43.47544156 | Long: -96.82459694 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Chancellor-Viborg silty clay loams | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N	**Is the sampled area within a wetland?**	N
Hydric soil present?	N	If yes, optional wetland site ID:	
Indicators of wetland hydrology present?	N		

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Zea mays* -- *Corn*	100	Y	NI
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	0	(A)	0	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 21-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	10YR 3/1	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/25/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 21-W

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W

Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave

Slope (%): 1 | Lat: 43.47546259 | Long: -96.82460011 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Chancellor-Viborg silty clay loams | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	Y
Hydric soil present?	Y	If yes, optional wetland site ID:	Wetland 21
Indicators of wetland hydrology present?	Y		

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)			Absolute % Cover	Dominant Species	Indicator Status
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)					
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Herb stratum (Plot size: 5' Radius)					
1	*Phalaris arundinacea*	-- *Reed Canary Grass*	90	Y	FACW
2	*Typha angustifolia*	-- *Narrow-Leaf Cat-Tail*	10	N	OBL
3	--				
4	--				
5	--				
6	--				
7	--				
8	--				
9	--				
10	--				
			100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)					
1	--				
2	--				
			0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	10	x 1 =	10
FACW species	90	x 2 =	180
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		190 (B)

Prevalence Index = B/A = 1.90

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL

Sampling Point: 21-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	10YR 2/2	100					Silty Clay Loam	
6-16	10YR 2/2	90	10YR 4/6	10	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):	2
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 23-U

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS18R50W

Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None

Slope (%): 4 | Lat: 43.48202808 | Long: -96.79798958 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Egan silty clay loam, 3 to 6 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

(If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? N

Hydric soil present? N

Indicators of wetland hydrology present? N

Is the sampled area within a wetland? N

If yes, optional wetland site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Zea mays* -- *Corn*	100	Y	NI
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	0	(A)	0	(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:

Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 23-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	5YR 3/1	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 23-W
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS18R50W
Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave
Slope (%): 1 | Lat: 43.48205159 | Long: -96.79794228 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Egan silty clay loam, 3 to 6 percent slopes | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y
Hydric soil present? Y
Indicators of wetland hydrology present? Y

Is the sampled area within a wetland? Y
If yes, optional wetland site ID: Wetland 23

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1 *Populus deltoides*	-- *Eastern Cottonwood*	10	Y	FAC
2	--			
3	--			
4	--			
5	--			
		10	= Total Cover	

Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	

Herb stratum (Plot size: 5' Radius)				
1 *Phalaris arundinacea*	-- *Reed Canary Grass*	40	Y	FACW
2 *Typha angustifolia*	-- *Narrow-Leaf Cat-Tail*	20	Y	OBL
3 *Rumex crispus*	-- *Curly Dock*	10	N	FAC
4 *Poa pratensis*	-- *Kentucky Blue Grass*	10	N	FAC
5 *Zea mays*	-- *Corn*	10	N	NI
6 *Carex stricta*	-- *Uptight Sedge*	10	N	OBL
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	

Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across all Strata: 3 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	30	x 1 =	30	
FACW species	40	x 2 =	80	
FAC species	30	x 3 =	90	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	100	(A)	200	(B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL

Sampling Point: 23-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-4	5YR 3/1	100					Silty Clay Loam	
4-16	10YR 2/1	90	10YR 5/8	5	C	M	Silty Clay Loam	
			10YR 5/2	5	D	M		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- X Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):	1
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 24-U
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS18R50W
Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None
Slope (%): 4 | Lat: 43.48167052 | Long: -96.79932355 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Chancellor-Tetonka complex, 0 to 2 percent slopes | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? N
Hydric soil present? N
Indicators of wetland hydrology present? N

Is the sampled area within a wetland? N
If yes, optional wetland site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Zea mays* -- *Corn*	100	Y	NI
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across all Strata: 1 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	0	(A)	0	(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation
____ Dominance test is >50%
____ Prevalence index is ≤3.0*
____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 24-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	10YR 2/1	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 24-W

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS18R50W

Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave

Slope (%): 2 | Lat: 43.48169364 | Long: -96.79935367 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Chancellor-Tetonka complex, 0 to 2 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? N

Hydric soil present? Y

Indicators of wetland hydrology present? Y

Is the sampled area within a wetland? Y

If yes, optional wetland site ID: Wetland 24

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Zea mays* -- *Corn*	100	Y	NI
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	0	(A)	0	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

The corn in the wetland was stunted and stressed.

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:

Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 24-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-4	10YR 2/1	100					Silty Clay Loam	
4-14	10YR 2/1	95	7.5YR 4/6	5	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):	1
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 25-U
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W
Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None
Slope (%): 4 | Lat: 43.48420737 | Long: -96.80725087 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Baltic silty clay loam, ponded | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y
Hydric soil present? N
Indicators of wetland hydrology present? N

Is the sampled area within a wetland? N
If yes, optional wetland site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Glycine max* -- *Soybeans*	90	Y	NI
2	*Phalaris arundinacea* -- *Reed Canary Grass*	10	N	FACW
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across all Strata: 1 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	10	x 2 =	20	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	10	(A)	20	(B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 25-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14	10YR 3/1	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches):	___
Water table present?	Yes	___	No	X	Depth (inches):	___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 25-W
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W
Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave
Slope (%): 1 | Lat: 43.48415732 | Long: -96.80718817 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Baltic silty clay loam, ponded | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y
Hydric soil present? Y
Indicators of wetland hydrology present? Y

Is the sampled area within a wetland? Y
If yes, optional wetland site ID: Wetland 25

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)			Absolute % Cover	Dominant Species	Indicator Status
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)					
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Herb stratum (Plot size: 5' Radius)					
1	*Phalaris arundinacea*	-- *Reed Canary Grass*	80	Y	FACW
2	*Spartina pectinata*	-- *Freshwater Cord Grass*	10	N	FACW
3	*Typha angustifolia*	-- *Narrow-Leaf Cat-Tail*	10	N	OBL
4		--			
5		--			
6		--			
7		--			
8		--			
9		--			
10		--			
			100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)					
1	--				
2	--				
			0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 1 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	10	x 1 =	10
FACW species	90	x 2 =	180
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		190 (B)

Prevalence Index = B/A = 1.90

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL

Sampling Point: 25-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-2	10YR 3/1	100					Silty Clay Loam	
2-16	10YR 3/1	90	10YR 4/6	5	C	M	Silty Clay Loam	
			10YR 5/1	5	C	M		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- X Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 26-U
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W
Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None
Slope (%): 4 | Lat: 43.4806836 | Long: -96.80646345 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Chancellor-Tetonka complex, 0 to 2 percent slopes | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y
Hydric soil present? N
Indicators of wetland hydrology present? N

Is the sampled area within a wetland? N
If yes, optional wetland site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Poa pratensis* -- *Kentucky Blue Grass*	100	Y	FAC
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 1 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	100	x 3 =	300
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		300 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 26-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-16	10YR 3/1	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches):	___
Water table present?	Yes	___	No	X	Depth (inches):	___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 26-W
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W
Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave
Slope (%): 0 | Lat: 43.48065988 | Long: -96.80647575 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Chancellor-Tetonka complex, 0 to 2 percent slopes | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y	**Is the sampled area within a wetland?** Y
Hydric soil present? Y	If yes, optional wetland site ID: Wetland 26
Indicators of wetland hydrology present? Y	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Phalaris arundinacea* -- *Reed Canary Grass*	100	Y	FACW
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 1 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	100	x 2 =	200	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	100	(A)	200	(B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 26-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	10YR 3/1	95	10YR 4/6	5	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):	2
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 27-U

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS18R50W

Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None

Slope (%): 6 | Lat: 43.48033145 | Long: -96.80608575 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Wentworth silty clay loam, 0 to 2 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N		
Hydric soil present?	N	**Is the sampled area within a wetland?**	N
Indicators of wetland hydrology present?	N	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Zea mays* -- *Corn*	100	Y	NI
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	0	(A)	0	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 27-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14	10YR 2/2	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 27-W
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS18R50W
Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave
Slope (%): 1 | Lat: 43.48033383 | Long: -96.80604542 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Wentworth silty clay loam, 0 to 2 percent slopes | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y
Hydric soil present? Y
Indicators of wetland hydrology present? Y

Is the sampled area within a wetland? Y
If yes, optional wetland site ID: Wetland 27

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Phalaris arundinacea* -- *Reed Canary Grass*	100	Y	FACW
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 1 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	100	x 2 =	200	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	100	(A)	200	(B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 27-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14	10YR 2/2	95	10YR 4/6	5	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):	0.5
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 28-U

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W

Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None

Slope (%): 4 | Lat: 43.48742262 | Long: -96.80667704 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Egan-Worthing complex, 0 to 6 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? N

Hydric soil present? N

Indicators of wetland hydrology present? ____

Is the sampled area within a wetland? N

If yes, optional wetland site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Glycine max* -- *Soybeans*	100	Y	NI
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	0	(A)	0	(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 28-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14	10YR 2/1	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? ___

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 28-W

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W

Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave

Slope (%): 0 | Lat: 43.48736524 | Long: -96.80667104 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Egan-Worthing complex, 0 to 6 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	Y
Hydric soil present?	Y	If yes, optional wetland site ID:	Wetland 28
Indicators of wetland hydrology present?	Y		

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Phalaris arundinacea* -- *Reed Canary Grass*	60	Y	FACW
2	*Glycine max* -- *Soybeans*	10	N	NI
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		70	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	60 (A)		120 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 28-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	10YR 2/1	95	7.5YR 4/6	5	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):	1
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 29-U

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W

Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None

Slope (%): 6 | Lat: 43.48981066 | Long: -96.80624325 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Wentworth-Chancellor silty clay loams, 0 to 2 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? N	
Hydric soil present? N	**Is the sampled area within a wetland?** N
Indicators of wetland hydrology present? N	If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Zea mays* -- *Corn*	100	Y	NI
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	0	(A)	0	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 29-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	10YR 2/2	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 29-W

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS18R50W

Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave

Slope (%): 1 | Lat: 43.48981246 | Long: -96.80621945 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Wentworth-Chancellor silty clay loams, 0 to 2 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

(If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? Y	
Hydric soil present? Y	**Is the sampled area within a wetland?** Y
Indicators of wetland hydrology present? Y	If yes, optional wetland site ID: Wetland 29

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Phalaris arundinacea* -- *Reed Canary Grass*	90	Y	FACW
2	*Spartina pectinata* -- *Freshwater Cord Grass*	10	N	FACW
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	100	x 2 =	200	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	100	(A)	200	(B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 29-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	10YR 2/2	95	7.5YR 4/6	5	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):	1
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 07/25/19

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 34-1U

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS08R50W

Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None

Slope (%): 5 | Lat: 43.49082 | Long: -96.77695 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Alcester silty clay loam, channeled | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? N	
Hydric soil present? N	**Is the sampled area within a wetland?** N
Indicators of wetland hydrology present? N	If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)			Absolute % Cover	Dominant Species	Indicator Status
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)					
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Herb stratum (Plot size: 5' Radius)					
1	*Melilotus alba*	-- *White Sweet Clover*	45	Y	FACU
2	*Euphorbia virgata*	-- *Leafy Spurge*	20	Y	NI
3	*Poa pratensis*	-- *Kentucky Blue Grass*	15	N	FAC
4	*Monarda fistulosa*	-- *Oswego-Tea*	10	N	FACU
5	*Medicago sativa*	-- *Alfalfa*	5	N	FACU
6	*Panicum virgatum*	-- *Wand Panic Grass*	5	N	FAC
7	*Solidago rigida*	-- *Hard-Leaf Flat-Top-Golde*	5	N	FACU
8		--			
9		--			
10		--			
			105	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)					
1	--				
2	--				
			0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	65	x 4 =	260
UPL species	0	x 5 =	0
Column totals	85 (A)		320 (B)

Prevalence Index = B/A = 3.76

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 34-1U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	10YR 3/2	100					Silty Loam	
6-12	10YR 4/4	100					Silty Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 07/25/19
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 34-1W
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS08R50W
Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave
Slope (%): 1 | Lat: 43.490844 | Long: -96.776793 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Alcester silty clay loam, channeled | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y
Hydric soil present? Y
Indicators of wetland hydrology present? Y

Is the sampled area within a wetland? Y
If yes, optional wetland site ID: Wetland 34

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)			Absolute % Cover	Dominant Species	Indicator Status
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)					
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Herb stratum (Plot size: 5' Radius)					
1	*Typha angustifolia*	-- *Narrow-Leaf Cat-Tail*	70	Y	OBL
2	*Salix interior*	-- *Sandbar Willow*	20	N	FACW
3	*Phalaris arundinacea*	-- *Reed Canary Grass*	10	N	FACW
4	*Eleocharis obtusa*	-- *Blunt Spike-Rush*	10	N	OBL
5	*Solidago gigantea*	-- *Late Goldenrod*	10	N	FACW
6	--				
7	--				
8	--				
9	--				
10	--				
			120	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)					
1	--				
2	--				
			0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 1 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	80	x 1 =	80
FACW species	40	x 2 =	80
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	120 (A)		160 (B)

Prevalence Index = B/A = 1.33

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL

Sampling Point: 34-1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	10YR 2/2	100					Silty Loam	
6-16	10YR 4/2	90	7.5YR 4/6	10	C	M	Silty Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches):	___
Water table present?	Yes	___	No	X	Depth (inches):	___
Saturation present? (includes capillary fringe)	Yes	X	No	___	Depth (inches):	0

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 07/25/19
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 34-2U
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS08R50W
Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None
Slope (%): 5 | Lat: 43.493374 | Long: -96.77785 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Alcester silty clay loam, channeled | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	N		
Hydric soil present?	N	**Is the sampled area within a wetland?**	N
Indicators of wetland hydrology present?	N	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)			Absolute % Cover	Dominant Species	Indicator Status
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)					
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Herb stratum (Plot size: 5' Radius)					
1	*Poa pratensis*	-- *Kentucky Blue Grass*	35	Y	FAC
2	*Bromus inermis*	-- *Smooth Brome*	30	Y	FACU
3	*Euphorbia virgata*	-- *Leafy Spurge*	15	N	NI
4	*Asclepias syriaca*	-- *Common Milkweed*	10	N	FACU
5		--			
6		--			
7		--			
8		--			
9		--			
10		--			
			90	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)					
1	--				
2	--				
			0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 2 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	35	x 3 =	105
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column totals	75 (A)		265 (B)

Prevalence Index = B/A = 3.53

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 34-2U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	10YR 3/2	100					Silty Loam	
8-9	10YR 4/4	100					Silty Loam	
9								Rocks

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: Rocks
Depth (inches): 9

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 07/25/19
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 34-2W
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS08R50W
Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave
Slope (%): 1 | Lat: 43.493374 | Long: -96.77785 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Egan silty clay loam, 3 to 6 percent slopes | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y
Hydric soil present? Y
Indicators of wetland hydrology present? Y

Is the sampled area within a wetland? Y
If yes, optional wetland site ID: Wetland 34

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)			Absolute % Cover	Dominant Species	Indicator Status
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)					
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Herb stratum (Plot size: 5' Radius)					
1	*Hordeum jubatum*	-- *Fox-Tail Barley*	35	Y	FAC
2	*Echinochloa crus-galli*	-- *Large Barnyard Grass*	20	Y	FACW
3	*Rumex crispus*	-- *Curly Dock*	15	N	FAC
4	*Cyperus esculentus*	-- *Chufa*	10	N	FACW
5	*Phalaris arundinacea*	-- *Reed Canary Grass*	10	N	FACW
6		--			
7		--			
8		--			
9		--			
10		--			
			90	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)					
1	--				
2	--				
			0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across all Strata: 2 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	50	x 3 =	150
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	90 (A)		230 (B)

Prevalence Index = B/A = 2.56

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
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SOIL **Sampling Point:** 34-2W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-4	10YR 2/2	100					Silty Loam	
4-8	10YR 4/2	90	7.5YR 4/6	10	C	M	Silty Loam	
8-18	10YR 4/2	100					Silty Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):	0.5
Water table present?	Yes	X	No		Depth (inches):	0
Saturation present? (includes capillary fringe)	Yes	X	No		Depth (inches):	0

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 38U

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS18R50W

Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None

Slope (%): 5 | Lat: 43.47555403 | Long: -96.79834045 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Huntimer silty clay loam, 0 to 2 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	N
Hydric soil present?	N	If yes, optional wetland site ID:	
Indicators of wetland hydrology present?	N		

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Poa pratensis* -- *Kentucky Blue Grass*	100	Y	FAC
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	100	x 3 =	300
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		300 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 38-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	10YR 3/1	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 38-W
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS18R50W
Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave
Slope (%): 0 | Lat: 43.47552919 | Long: -96.79833825 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Huntimer silty clay loam, 0 to 2 percent slopes | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y
Hydric soil present? Y
Indicators of wetland hydrology present? Y

Is the sampled area within a wetland? Y
If yes, optional wetland site ID: Wetland 38

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)			Absolute % Cover	Dominant Species	Indicator Status
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)					
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Herb stratum (Plot size: 5' Radius)					
1	*Phalaris arundinacea*	-- *Reed Canary Grass*	70	Y	FACW
2	*Poa pratensis*	-- *Kentucky Blue Grass*	15	N	FAC
3	*Setaria pumila*	-- *Yellow Bristle Grass*	10	N	FAC
4	*Hordeum jubatum*	-- *Fox-Tail Barley*	5	N	FAC
5		--			
6		--			
7		--			
8		--			
9		--			
10		--			
			100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)					
1	--				
2	--				
			0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 1 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	30	x 3 =	90
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		230 (B)

Prevalence Index = B/A = 2.30

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL

Sampling Point: 38-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	10YR 2/1	90	10YR 5/8	5	C	M	Silty Clay Loam	
			10YR 5/2	5	D	M		
6-20	10YR 2/1	95	10YR 5/8	5	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- X Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches):	___
Water table present?	Yes	___	No	X	Depth (inches):	___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 39U
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS18R50W
Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None
Slope (%): 3 | Lat: 43.47555085 | Long: -96.80230912 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Egan-Worthing complex, 0 to 6 percent slopes | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y	**Is the sampled area within a wetland?** N
Hydric soil present? N	If yes, optional wetland site ID:
Indicators of wetland hydrology present? N	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Poa pratensis* -- *Kentucky Blue Grass*	100	Y	FAC
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 1 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	100	x 3 =	300
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		300 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 39-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14	10YR 2/1	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 39W
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS18R50W
Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave
Slope (%): 0 | Lat: 43.47556126 | Long: -96.80230874 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Egan-Worthing complex, 0 to 6 percent slopes | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y	**Is the sampled area within a wetland?** Y
Hydric soil present? Y	If yes, optional wetland site ID: Wetland 39
Indicators of wetland hydrology present? Y	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)			Absolute % Cover	Dominant Species	Indicator Status
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)					
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Herb stratum (Plot size: 5' Radius)					
1	*Typha angustifolia*	-- *Narrow-Leaf Cat-Tail*	60	Y	OBL
2	*Phalaris arundinacea*	-- *Reed Canary Grass*	20	Y	FACW
3	*Poa pratensis*	-- *Kentucky Blue Grass*	20	Y	FAC
4		--			
5		--			
6		--			
7		--			
8		--			
9		--			
10		--			
			100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)					
1	--				
2	--				
			0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across all Strata: 3 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	60	x 1 =	60
FACW species	20	x 2 =	40
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		160 (B)

Prevalence Index = B/A = 1.60

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL

Sampling Point: 39-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	10YR 2/1	90	10YR 4/6	5	C	M	Silty Clay Loam	
			10YR 5/1	5	C	M		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- X Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	X	No		Depth (inches):	1
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 40U
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W
Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None
Slope (%): 3 | Lat: 43.47560931 | Long: -96.80758242 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Egan-Worthing complex, 0 to 6 percent slopes | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	N
Hydric soil present?	N	If yes, optional wetland site ID:	
Indicators of wetland hydrology present?	N		

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Poa pratensis* -- *Kentucky Blue Grass*	100	Y	FAC
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across all Strata: 1 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	100	x 3 =	300
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		300 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 40-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-16	10YR 2/1	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 40W

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W

Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave

Slope (%): 0 | Lat: 43.47559263 | Long: -96.80758207 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Egan-Worthing complex, 0 to 6 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	Y
Hydric soil present?	Y	If yes, optional wetland site ID:	Wetland 40
Indicators of wetland hydrology present?	Y		

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)			Absolute % Cover	Dominant Species	Indicator Status
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)					
1	--				
2	--				
3	--				
4	--				
5	--				
			0	= Total Cover	
Herb stratum (Plot size: 5' Radius)					
1	*Phalaris arundinacea*	-- *Reed Canary Grass*	80	Y	FACW
2	*Carex stricta*	-- *Uptight Sedge*	20	Y	OBL
3	--				
4	--				
5	--				
6	--				
7	--				
8	--				
9	--				
10	--				
			100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)					
1	--				
2	--				
			0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	20	x 1 =	20
FACW species	80	x 2 =	160
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		180 (B)

Prevalence Index = B/A = 1.80

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 40-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-18	10YR 2/1	95	10YR 5/8	5	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches):	___
Water table present?	Yes	___	No	X	Depth (inches):	___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18
Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 41-U
Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W
Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None
Slope (%): 5 | Lat: 43.47544064 | Long: -96.81592679 | Datum: UTM NAD 83 Zone 14N
Soil Map Unit Name: Worthing silty clay loam, 0 to 1 percent slopes | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? N
Hydric soil present? N
Indicators of wetland hydrology present? N

Is the sampled area within a wetland? N
If yes, optional wetland site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Glycine max* -- *Soybeans*	100	Y	NI
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across all Strata: 1 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	0	(A)	0	(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 41-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	5YR 3/1	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 41-W

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W

Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave

Slope (%): 1 | Lat: 43.47546036 | Long: -96.81592608 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Worthing silty clay loam, 0 to 1 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	Y
Hydric soil present?	Y	If yes, optional wetland site ID:	Wetland 41
Indicators of wetland hydrology present?	Y		

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0 = Total Cover		
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0 = Total Cover		
Herb stratum (Plot size: 5' Radius)				
1	*Phalaris arundinacea* -- *Reed Canary Grass*	100	Y	FACW
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100 = Total Cover		
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0 = Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	100	x 2 =	200	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	100	(A)	200	(B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 41-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-16	10YR 2/2	90	2.5YR 4/6	10	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches):	___
Water table present?	Yes	___	No	X	Depth (inches):	___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 42- U

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W

Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): None

Slope (%): 5 | Lat: 43.48979865 | Long: -96.8064398 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Wentworth-Chancellor silty clay loams, 0 to 2 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

(If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? N	
Hydric soil present? N	**Is the sampled area within a wetland?** N
Indicators of wetland hydrology present? N	If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Glycine max* -- *Soybeans*	100	Y	NI
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	0	(A)	0	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- ____ Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 42-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14	10YR 2/1	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 42-W

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W

Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave

Slope (%): 1 | Lat: 43.48979897 | Long: -96.80641708 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Wentworth-Chancellor silty clay loams, 0 to 2 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

(If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? Y	
Hydric soil present? Y	**Is the sampled area within a wetland?** Y
Indicators of wetland hydrology present? Y	If yes, optional wetland site ID: Wetland 42

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Phalaris arundinacea* -- *Reed Canary Grass*	100	Y	FACW
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	100	x 2 =	200
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		200 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 42-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	10YR 2/1	95	7.5YR 4/6	5	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches):	___
Water table present?	Yes	___	No	X	Depth (inches):	___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 43-U

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W

Landform (hillslope, terrace, etc.): backslope | Local relief (concave, convex, none): Concave

Slope (%): 3 | Lat: 43.4770612 | Long: -96.80650158 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Worthing silty clay loam, 0 to 1 percent slopes | NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	N
Hydric soil present?	N	If yes, optional wetland site ID:	
Indicators of wetland hydrology present?	N		

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Poa pratensis* -- *Kentucky Blue Grass*	100	Y	FAC
2	--			
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:			
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	100	x 3 =	300
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		300 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 43-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14	10YR 2/1	100					Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 85th Street Interchange | City/County: Lincoln County | Sampling Date: 11/13/18

Applicant/Owner: 85th Street Business District Joint Venture Group | State: South Dakota | Sampling Point: 43-W

Investigator(s): Rebecca Beduhn | Section, Township, Range: T100NS13R51W

Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): Concave

Slope (%): 0 | Lat: 43.47706164 | Long: -96.80645197 | Datum: UTM NAD 83 Zone 14N

Soil Map Unit Name: Worthing silty clay loam, 0 to 1 percent slopes | NWI Classification: PEM1Cd

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed?

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? Are "normal circumstances" present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? Y

Hydric soil present? Y

Indicators of wetland hydrology present? Y

Is the sampled area within a wetland? If yes, optional wetland site ID: Wetland 43 — Y

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' Radius)		Absolute % Cover	Dominant Species	Indicator Status
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15' Radius)				
1	--			
2	--			
3	--			
4	--			
5	--			
		0	= Total Cover	
Herb stratum (Plot size: 5' Radius)				
1	*Phalaris arundinacea* -- *Reed Canary Grass*	70	Y	FACW
2	*Spartina pectinata* -- *Freshwater Cord Grass*	30	Y	FACW
3	--			
4	--			
5	--			
6	--			
7	--			
8	--			
9	--			
10	--			
		100	= Total Cover	
Woody vine stratum (Plot size: 30' Radius)				
1	--			
2	--			
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	100	x 2 =	200	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	100	(A)	200	(B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

Note: This data sheet has been adapted to use the 2012 National Wetland Plant List:
Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2012)

SOIL **Sampling Point:** 43-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-16	10YR 2/1	95	10YR 5/8	5	C	M	Silty Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Iron-Manganese Masses (F12) (**LRR K, L, M**)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches):	___
Water table present?	Yes	___	No	X	Depth (inches):	___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	___

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation and/or a water table were not able to be observed, as the water was frozen at the time of the site visit.

Appendix B

Site Photographs

Photo 1 Wetland 1 – Shallow Marsh

Photo 2 Wetland 1 – Shallow Marsh

Photo 3 Wetland 2 – Shallow Marsh

Photo 4 Wetland 2 – Shallow Marsh

Photo 5 Wetland 3 – Fresh (Wet) Meadow

Photo 6 Wetland 3 – Fresh (Wet) Meadow

Photo 7 Wetland 4 – Seasonally Flooded Basin

Photo 8 Wetland 4 – Seasonally Flooded Basin

Photo 9 Wetland 5 – Seasonally Flooded Basin

Photo 10 Wetland 5 – Seasonally Flooded Basin

Photo 11 Wetland 6 – Shallow Marsh

Photo 12 Wetland 6 – Shallow Marsh

Photo 13 Wetland 7 – Seasonally Flooded Basin

Photo 14 Wetland 7 – Seasonally Flooded Basin

Photo 15 Wetland 8 – Fresh (Wet) Meadow

Photo 16 Wetland 8 – Fresh (Wet) Meadow

Photo 17 Wetland 9 – Seasonally Flooded Basin

Photo 18 Wetland 9 – Seasonally Flooded Basin

Photo 19 Wetland 10 – Seasonally Flooded Basin

Photo 20 Wetland 10 – Seasonally Flooded Basin

Photo 21 Wetland 11 – Shallow Marsh

Photo 22 Wetland 11– Shallow Marsh

Photo 23 Wetland 12 – Fresh (Wet) Meadow

Photo 24 Wetland 12 – Fresh (Wet) Meadow

***Wetland 13 was previously delineation and, therefore, does not have corresponding pictures.**

Photo 25 Wetland 14 – Shallow Open Water

Photo 26 Wetland 14 – Shallow Open Water

Photo 27 Wetland 15 – Fresh (Wet) Meadow Ditch Portion

Photo 28 Wetland 15 – Fresh (Wet) Meadow (extends to the south outside of the project area and changes to Seasonally Flooded Basin

Photo 29 Wetland 16 – Fresh (Wet) Meadow

Photo 30 Wetland 16 – Fresh (Wet) Meadow

Photo 31 Wetland 17 – Fresh (Wet) Meadow

Photo 32 Wetland 17 – Fresh (Wet) Meadow

Photo 33 Wetland 18 – Fresh (Wet) Meadow

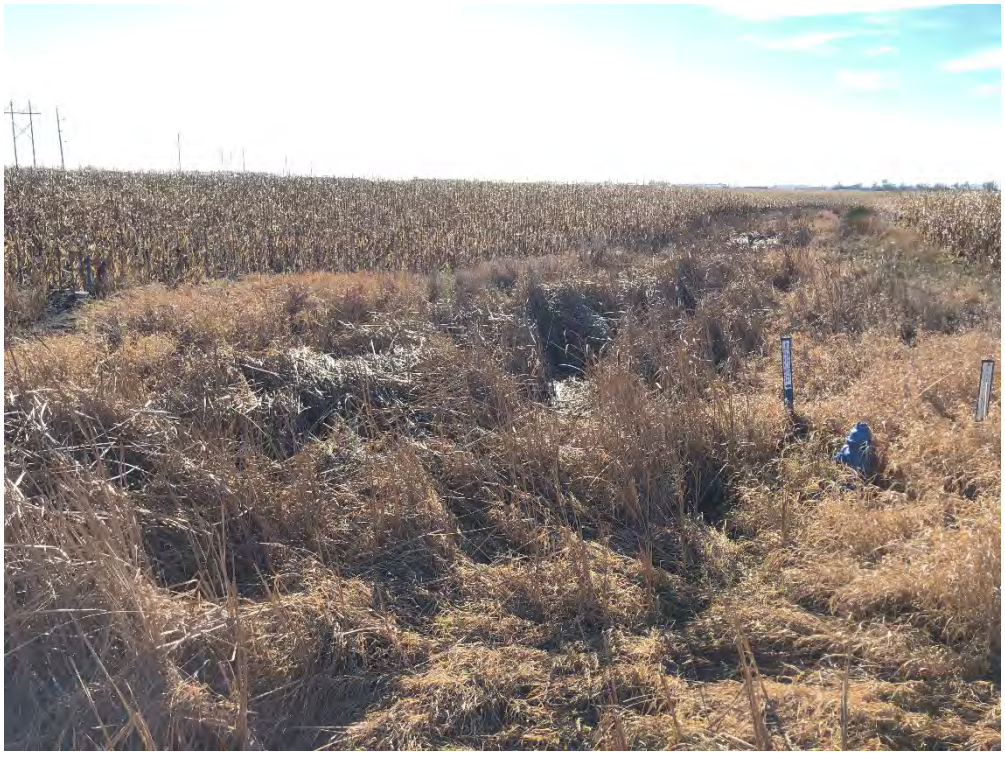


Photo 34 Wetland 18 – Fresh (Wet) Meadow

Photo 35 Wetland 19 – Shallow Marsh

Photo 36 Wetland 19 – Shallow Marsh

Photo 37 Wetland 20 – Fresh (Wet) Meadow

Photo 38 Wetland 20 – Fresh (Wet) Meadow

Photo 39 Wetland 21 – Fresh (Wet) Meadow

Photo 40 Wetland 21 – Fresh (Wet) Meadow

Photo 41 Wetland 22 – Fresh (Wet) Meadow

Photo 42 Wetland 22 – Fresh (Wet) Meadow

Photo 43 Wetland 23 – Shallow Marsh

Photo 44 Wetland 23 – Shallow Marsh

Photo 45 Wetland 24 – Seasonally Flooded Basin

Photo 46 Wetland 24 – Seasonally Flooded Basin

Photo 47 Wetland 25 – Fresh (Wet) Meadow

Photo 48 Wetland 25 – Fresh (Wet) Meadow

Photo 49 Wetland 26 – Fresh (Wet) Meadow

Photo 50 Wetland 26 – Fresh (Wet) Meadow

Photo 51 Wetland 27 – Fresh (Wet) Meadow

Photo 52 Wetland 27 – Fresh (Wet) Meadow

Photo 53 Wetland 28 – Fresh (Wet) Meadow

Photo 54 Wetland 28 – Fresh (Wet) Meadow

Photo 55 Wetland 29 – Fresh (Wet) Meadow

Photo 56 Wetland 29 – Fresh (Wet) Meadow

Photo 57 Wet Ditch A – Fresh (Wet) Meadow

Photo 58 Wet Ditch B – Shallow Marsh

Photo 59 Wet Ditch C

Photo 60 Wet Ditch D

Photo 61 Wet Ditch E

Photo 62 Wet Ditch F

Photo 63 Wetland 34

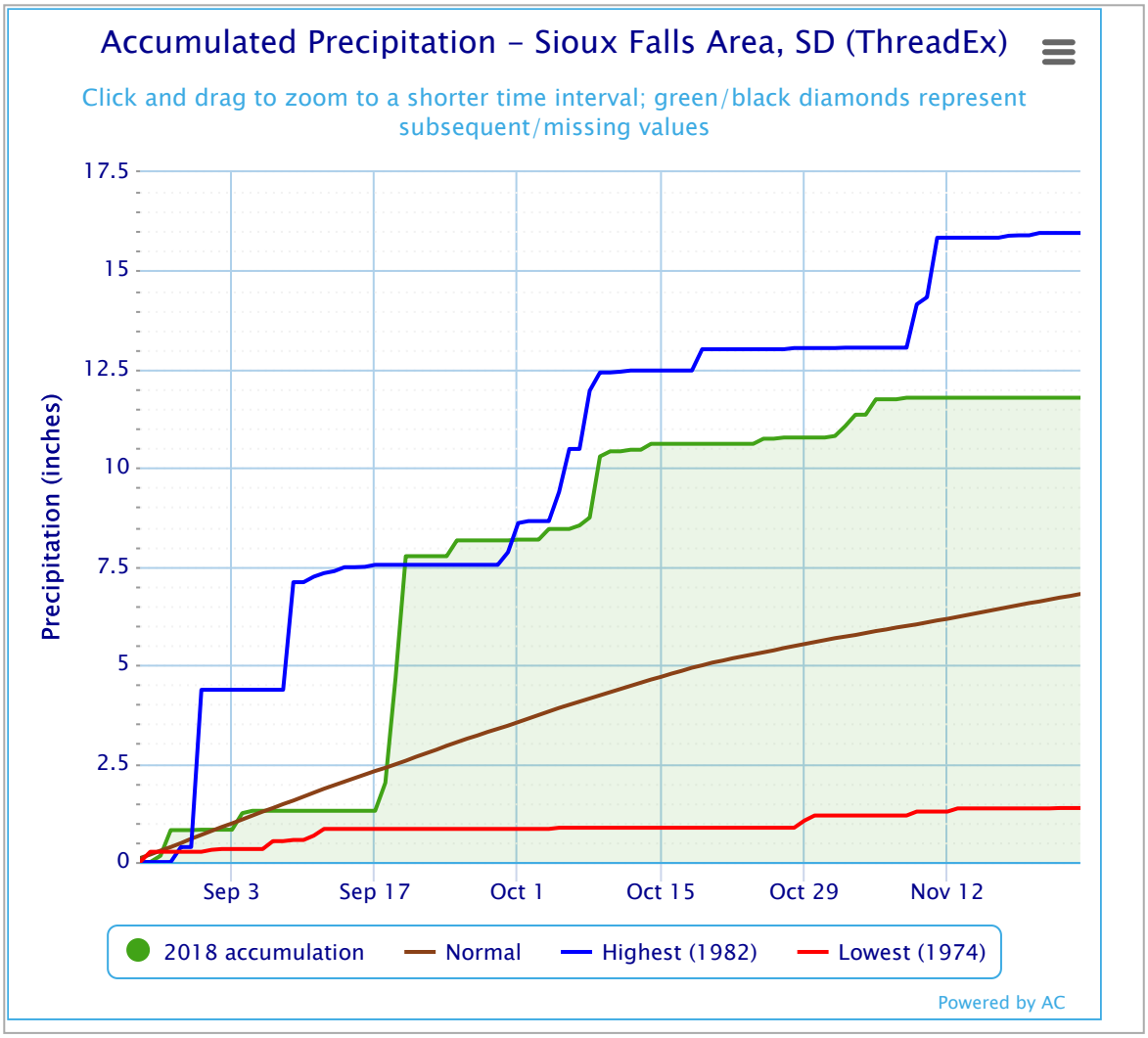
Photo 64 Wetland 34

Photo 65 Wetland 36 (Level 1) Field Verified

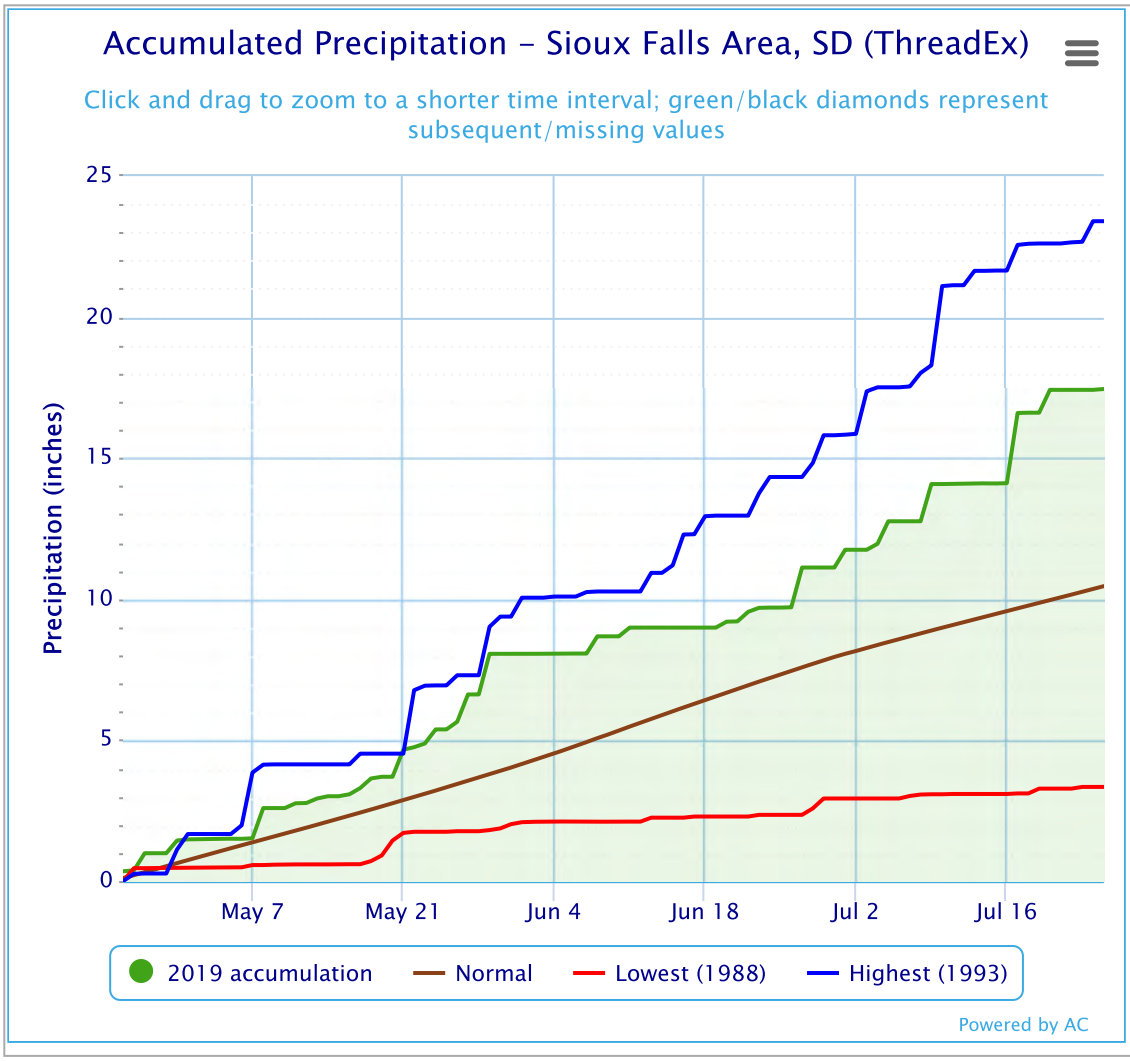
Photo 66 Wetland 36 (Level 1) Field Verified

Appendix C

Climate



Note regarding subsequent/missing values



Note regarding subsequent/missing values

Appendix D

Hydrogeomorphic Functional Assessment Workbooks

				Function								
Wetland Name	Wetland Size (acres)[3]	HGM Method	Prairie Pothole Function / Slope Function	Water Storage / Mod. Groundwater Flow	Groundwater Recharge / Vel. Reduc. Surf. Water	Retain Particulates / Elemental & Nutrient Cycling	Dissolved Substances / Retention of particulates	Carbon Cycling / Organic Carbon Export	Provide Faunal Habitat / Maint of Plant Comm.	Alternate Formula / Habitat Dispersion	Total FCI[1]	Total FCU[2]
1	1.04	Prairie Pothole		0.72	0.59	0.59	0.77	0.67	0.68	0.44	4.46	4.64
2	2.03	Slope		0.81	0.86	0.53	0.59	0.81	0.62	0.57	4.79	9.71
3	5.28	Slope		0.84	0.89	0.49	0.71	0.75	0.67	0.56	4.92	25.57
4	16.93	Slope		0.65	0.40	0.53	0.41	0.51	0.32	0.30	3.12	52.78
5	1.49	Prairie Pothole		0.94	0.76	0.65	0.61	0.61	0.68	0.60	4.85	7.23
6	9.12	Prairie Pothole		0.94	0.82	0.82	0.79	0.74	0.81	0.60	5.52	50.33
8	0.24	Prairie Pothole		0.94	0.81	0.61	0.60	0.57	0.65	0.55	4.73	1.13
9	0.25	Prairie Pothole		0.94	0.81	0.60	0.56	0.52	0.61	0.53	4.57	1.14
10	2.52	Slope		0.69	0.46	0.48	0.45	0.51	0.44	0.36	3.38	8.46
11	11.50	Slope		0.77	0.85	0.52	0.68	0.81	0.62	0.52	4.77	54.87
12	5.53	Prairie Pothole		0.65	0.63	0.20	0.54	0.44	0.52	0.38	3.36	18.65
14	1.27	Prairie Pothole		0.93	0.74	0.78	0.77	0.67	0.72	0.64	5.25	6.67
15	2.90	Slope		0.76	0.66	0.48	0.53	0.64	0.53	0.48	4.07	11.80
16	0.48	Slope		0.77	0.68	0.52	0.26	0.77	0.67	0.56	4.22	2.02
17	28.38	Slope		0.77	0.85	0.46	0.68	0.75	0.67	0.52	4.70	133.57
18	17.00	Slope		0.81	0.87	0.48	0.68	0.75	0.62	0.53	4.72	80.31
19	7.18	Slope		0.78	0.70	0.48	0.65	0.66	0.56	0.48	4.30	30.87
20	36.26	Slope		0.69	0.45	0.48	0.44	0.50	0.38	0.35	3.26	118.44
21	1.24	Slope		0.73	0.61	0.48	0.48	0.60	0.47	0.41	3.78	4.69
23	10.62	Slope		0.81	0.87	0.48	0.70	0.75	0.62	0.54	4.76	50.53
24	0.46	Prairie Pothole		0.70	0.42	0.55	0.41	0.51	0.32	0.30	3.20	1.47
25	4.57	Slope		0.81	0.87	0.48	0.70	0.75	0.62	0.56	4.78	22.00
26	2.86	Prairie Pothole		0.94	0.85	0.73	0.72	0.63	0.71	0.50	5.08	14.52
27	3.44	Prairie Pothole		0.81	0.87	0.48	0.68	0.75	0.62	0.53	4.72	16.06
28	1.00	Prairie Pothole		0.94	0.85	0.58	0.58	0.53	0.63	0.50	4.61	4.59
29	2.13	Prairie Pothole		0.94	0.78	0.69	0.67	0.62	0.65	0.56	4.91	10.44
34	25.90	Slope		0.68	0.61	0.41	0.70	0.74	0.82	0.44	4.39	113.77
38	0.03	Slope		0.35	0.63	0.49	0.76	0.68	0.53	0.54	3.98	0.12
39	0.02	Slope		0.35	0.62	0.49	0.74	0.68	0.53	0.51	3.91	0.08
40	0.17	Slope		0.35	0.66	0.49	0.75	0.69	0.53	0.53	4.00	0.68
41	0.17	Slope		0.35	0.47	0.39	0.74	0.56	0.45	0.42	3.37	0.57
42	0.09	Slope		0.35	0.61	0.49	0.72	0.68	0.53	0.49	3.87	0.35
43	0.11	Slope		0.35	0.62	0.49	0.74	0.68	0.53	0.51	3.91	0.43

1. FCI = Functional Capacity Index

2. FCU = Functional Capacity Units

3. Size includes the estimated area of the entire wetland for HGM calculations, which includes the wetland area outside of the project limits. This area is not being proposed for approval.

Summary Sheet

USER NOTE: **Do not enter any data in this worksheet. All data and calculations are entered for you using previously entered information. If any of this information is incorrect, enter the correct information in the appropriate worksheet.**

Project Name/Location:

85th Street Interchange
Lincoln County, South Dakota
Wetland #1

	Variable	Data entered		Subindex
Vegetation	$V_{GRASSCONT}$	wetland perimeter (feet):	838.00	1.00
		grassland along perimeter (feet):	838.00	
		percent continuity:	100.00	
	$V_{GRASSWIDTH}$	grassland width (feet) at 12 points:		1.00
		Point 1:	50.00	
		Point 2:	50.00	
		Point 3:	50.00	
		Point 4:	50.00	
		Point 5:	50.00	
		Point 6:	50.00	
		Point 7:	50.00	
		Point 8:	50.00	
		Point 9:	50.00	
		Point 10:	50.00	
		Point 11:	50.00	
		Point 12:	50.00	
		mean width (feet):	50.00	
	$V_{VEGCOMP}$	(see vegetation worksheet for species entered)		0.31
		sum of species:	4.00	
		sum of C values:	11.00	
		mean coefficient of conservatism:	2.75	
		FQI:	5.50	

Soil	$V_{RECHARGE}$	Soil Recharge Potential Subindex:	0.50	0.50
	V_{SED}	**Eastern Prairie Potholes**		0.53
		mean depth to B horizon (inches):		
		Western Prairie Potholes		
		mean depth to B horizon (inches):	4.00	
	V_{SQI}	SQI scores for 4 samples:		0.04
		sample 1:	1.50	
		sample 2:	1.50	
		sample 3:	2.00	
		sample 4:	2.00	
		average SQI score:	1.75	
	V_{SOM}	**Indirect Measurements**		0.21
		Litter Depth for 4 samples:		
		sample 1:	0.00	
		sample 2:	0.00	
		sample 3:	0.00	
		sample 4:	0.00	
		Average Litter Depth (inches):	0.00	
		ADI for 4 samples:		
		Sample 1 hue:	7.50	
		value:	2.50	
		chroma:	2.00	
		ADI:	8.00	
		Sample 2 hue:	7.50	
		value:	3.00	
		chroma:	1.00	
		ADI:	8.00	
		Sample 3 hue:	7.50	
		value:	2.50	
		chroma:	2.00	
		ADI:	8.00	
		Sample 4 hue:	7.50	
		value:	2.50	
		chroma:	2.00	
		ADI:	8.00	
		average ADI:	8.00	
		Direct Measurements		
		% organic carbon for 0-15cm depth:		
		% organic carbon for 15-30cm depth:		
		mean percentage:		
		% organic carbon:	1.35	

Hydrogeomorphic	V_{OUT}	historic invert elevation in relation to wetland maximum depth:	1518.50	1.00
		present (or constructed) invert elevation:	1518.50	
		elevation of the edge of the historic wetland:	1518.50	
		elevation of a representative deepest portion of the wetland:	1518.00	
		if evaluating pit or fill, enter % volume of pit/fill vs. wetland (ex. 25%=25), otherwise enter 0:	0.00	
		ratio of the constructed elevation to the natural outlet elevation:	1.00	
	V_{SUBOUT}	depth of surface drainage invert:		1.00
		distance from WAA edge:		
		location/spacing of subsurface tile within the WAA:		
	V_{SOURCE}	type & effect of surface alteration(s):		1.00
		% of historic catchment area still contributing runoff:		
		additions of water from other sources:		
		change in wetland regime class?		
	V_{EDGE}	wetland perimeter (feet):	838.00	0.35
		wetland area (acres):	1.04	
		Shoreline Development Index:	1.11	
	$V_{CATCHWET}$	wetland area (acres):	1.04	0.38
		catchment area (acres):	2.92	
		ratio of catchment size to wetland size:	2.81	
Landscape & Landuse	V_{UPUSE}	total acre size of the present day catchment:	263.00	0.00
		acres of catchment for each curve number:		
		98		
		90		
		79		
		77		
		72		
		75		
		73		
		71		
		72		
		74	2.92	
		69		
		79		
		74		
		69		
		61		
		weighted average score for upland land use:	0.82	
	$V_{WETPROX}$	distance to nearest wetland(feet):	58.00	0.96
		distance to 2nd nearest wetland:	147.00	
		distance to 3rd nearest wetland:	206.00	
		distance to 4th nearest wetland:	290.00	
		distance to 5th nearest wetland:	758.00	
		mean distance (feet):	291.80	
	$V_{WETAREA}$	acres of palustrine wetlands within a 1-mile radius:	126.00	0.28
	V_{BASINS}	number of palustrine wetlands within a 1-mile radius:	71.00	0.33
	$V_{HABFRAG}$	miles of roads and linear attributes within a 1-mile radius:	15.00	0.00

Function	FCI	FCU
1. Water Storage	0.72	0.75
2. Groundwater Recharge	0.59	0.61
3. Retain Particlulates	0.59	0.62
4. Remove, Convert, and Sequester Dissolved Substances	0.77	0.80
5. Plant Community Resilience and Carbon Cycling	0.67	0.70
6a. Provide Faunal Habitat	0.68	0.71
6b. Provide Faunal Habitat (Alternate Formula)	0.44	0.45

South Dakota Slope HGM Model, Version 4.0

Rev. 6/6/01

Variable Score Field Form

Field Office -		WAA Id. ----------	Wetland 2		Reference Site? (Y/N)	
County ------	Lincoln	Wetland Acres (pre-) ---	2.0	Wetland type (NWI)	PEM1C	
Date ---------	11/13/2018	Wetland Acres (post-) --	2.0	Wetland type (FSA)		
Owner/Op. --	85th St BDJVG	Planned Activity ---------				
Yellow Flag?		If yes, what?			Observers	
Red Flag? --		If yes, what?			Rebecca Beduhn	

Variable	Measurement or Condition Result				Rationale for Post-Project Changes	Variable Score Existing	Variable Score Projected
$V_{detritus}$	Detritus thickness (in.), pre-project ----------			0		0.25	0.25
V_{sed}	Sediment thickness (in.) in wetland, pre-project -----			1		0.75	0.75
	Other observations						
V_{som}	Dominant texture in upper 18" ----------			SiCL		1.00	1.00
	Color in upper 12": Value ---	2.5	Chroma -	1			
V_{pore}	Pores		SQI	2		0.75	0.75
	Structure		SQI	2			
	Rupture Resistance		SQI	2			
	Summary SQI Rating ----------			6			
V_{buffer}			Pre-	Post-		0.17	0.17
	Buffer continuity (%) ----------		98	98			
	Width of perm. veg. buffer (ft.) ----------		48	48			
	Continuity/Width Rating (B_1) ----------		0.3	0.3			
	Buffer condition ----------		⬇	⬇			
	Perm. veg. part ---		10	10			
	Tilled part ----------		None	None			
	Buffer Condition Rating (B_2) ----------		0.1	0.1			
V_{pratio}	Native species present in wetland (% of dominants) --			10		0.10	0.10
V_{pcover}			Pre-	Post-		1.00	1.00
	Percent of wetland area intact ----------		100	100			
	% ground cover - 100	Rating -	1	1			
	Percent of wetland area tilled ----------		0	0			
	% ground cover - 0	Rating -	1	1			
V_{micro}	Is the wetland area intact or disturbed?		Intact			1.00	1.00
	Describe variability on wetland surface (hummocks, meanders)						
	N/A						
V_{source}	Watershed source alterations (Y/N)?		Y			0.75	0.75
	If Y, what?	Road					
	Percent of area affected ----------		10				
V_{subalt}	Alteration present? N	Type -----				1.00	1.00
$V_{surfalt}$	Alteration present? N	Type -----				1.00	1.00
V_{upuse}	Dominant use of upland (3 maximum)		% of area	Index		0.10	0.10
	Conventional tillage row crop		25	0.1			
	Farmstead		75	0.1			

SLOPE MODEL FUNCTIONAL ASSESSMENT WORKSHEET

Version 4.0 (Rev. 6/6/01)

DATE ----------	##########	REMARKS ----------	
WETLAND ID ----------	Wetland 2	ASSESSMENT TYPE ----	Delineation
OBSERVERS ----------	Rebecca Beduhn	WETLAND TYPE NWI ---	PEM1C
CONDITIONS ----------		WETLAND TYPE FSA ---	
PROJECT NAME ---------	85th Street Interchange	OWNER/OPERATOR ----	85th St BDJVG
PLANNED ACTIVITY -----			
YELLOW FLAG ----------		RED FLAG ----------	
WETLAND ACRES E ----	2.0	WETLAND ACRES P ---	2.0

VARIABLE	SCORE Existing	SCORE Predicted
Detritus ($V_{detritus}$)	0.25	0.25
Sedimentation in the Wetland (V_{sed})	0.75	0.75
Soil Organic Matter (V_{som})	1.00	1.00
Soil Pores (V_{pore})	0.75	0.75
Buffer Condition, Continuity, & Width (V_{buffer})	0.17	0.17
Ratio of Native to Non-Native Species (V_{pratio})	0.10	0.10
Vegetation Density (V_{pcover})	1.00	1.00
Microtopographic Complexity (V_{micro})	1.00	1.00
Source Area of Flow (V_{source})	0.75	0.75
Subsurface Hydrology Alterations (V_{subalt})	1.00	1.00
Surface Hydrology Alterations ($V_{surfalt}$)	1.00	1.00
Upland Use (V_{upuse})	0.10	0.10

CALCULATION OF FUNCTIONAL CAPACITY

EXISTING	FCI	FCU	PREDICTED	FCI	FCU
Mod. Groundwater Flow	0.81	1.64	Mod. Groundwater Flow	0.81	1.61
Vel. Reduc. Surf. Water	0.86	1.75	Vel. Reduc. Surf. Water	0.86	1.72
Elemental & Nutr. Cycling	0.53	1.08	Elemental & Nutr. Cycling	0.53	1.07
Retention of Particulates	0.59	1.19	Retention of Particulates	0.59	1.17
Organic Carbon Export	0.81	1.65	Organic Carbon Export	0.81	1.63
Maint. of Plant Comm.	0.62	1.25	Maint. of Plant Comm.	0.62	1.23
Habitat Interspersion	0.57	1.15	Habitat Interspersion	0.57	1.14

FUNCTIONS	CHANGE IN FCU's NUMERICAL	CHANGE IN FCU's PERCENT	MIN EFFECT (Yes or No)	JUSTIFICATION OF MINIMAL EFFECT IF **10 TO 20% LOSS** OF FUNCTION
Mod. Groundwater Flow	-0.02	-1.4	YES	
Vel. Reduc. Surf. Water	-0.02	-1.4	YES	
Ret, Conv. Elem. & Cmpd.	-0.02	-1.4	YES	
Retention of Particulates	-0.02	-1.4	YES	
Organic Carbon Export	-0.02	-1.4	YES	
Maint. of Plant Comm.	-0.02	-1.4	YES	
Habitat Interspersion	-0.02	-1.4	YES	

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Rev. 6/6/01

Variable Score Field Form

Field Office -		WAA Id. ----------	Wetland 3			Reference Site? (Y/N)	
County ------	Lincoln	Wetland Acres (pre-) ---	5.2	Wetland type (NWI)		PEM1B	
Date ---------	11/13/2018	Wetland Acres (post-) --	5.2	Wetland type (FSA)			
Owner/Op. --	85th St BDJVG	Planned Activity ---------					
Yellow Flag?		If yes, what?				Observers	
Red Flag? --		If yes, what?				Rebecca Beduhn	

Variable	Measurement or Condition Result				Rationale for Post-Project Changes	Variable Score	
						Existing	Projected
$V_{detritus}$	Detritus thickness (in.), pre-project ----------			0		0.25	0.25
V_{sed}	Sediment thickness (in.) in wetland, pre-project -----			0		1.00	1.00
	Other observations						
V_{som}	Dominant texture in upper 18" ----------			SiCL		0.75	0.75
	Color in upper 12": Value ---	2	Chroma -	2			
V_{pore}	Pores		SQI	2		0.75	0.75
	Structure		SQI	2			
	Rupture Resistance		SQI	2			
	Summary SQI Rating ----------			6			
V_{buffer}			Pre-	Post-		0.16	0.16
	Buffer continuity (%) ----------		43	43			
	Width of perm. veg. buffer (ft.) ----------		21	21			
	Continuity/Width Rating (B_1) ----------		0.1	0.1			
	Buffer condition ----------		⬇	⬇			
	Perm. veg. part ---		20	20			
	Tilled part ----------		None	None			
	Buffer Condition Rating (B_2) ----------		0.25	0.25			
V_{pratio}	Native species present in wetland (% of dominants) --			25		0.25	0.25
V_{pcover}			Pre-	Post-		1.00	1.00
	Percent of wetland area intact ----------		100	100			
	% ground cover - 120	Rating -	1	1			
	Percent of wetland area tilled ----------		0	0			
	% ground cover - 0	Rating -	1	1			
V_{micro}	Is the wetland area intact or disturbed?		Intact			1.00	1.00
	Describe variability on wetland surface (hummocks, meanders)						
	N/A						
V_{source}	Watershed source alterations (Y/N)?		N			1.00	1.00
	If Y, what?						
	Percent of area affected ----------						
V_{subalt}	Alteration present? N	Type -----				1.00	1.00
$V_{surfalt}$	Alteration present? N	Type -----				1.00	1.00
V_{upuse}	Dominant use of upland (3 maximum)		% of area	Index		0.10	0.10
	Conventional tillage row crop		60	0.1			
	Farmstead		40	0.1			

SLOPE MODEL FUNCTIONAL ASSESSMENT WORKSHEET

Version 4.0 (Rev. 6/6/01)

DATE ----------	##########	REMARKS ----------	
WETLAND ID ----------	Wetland 3	ASSESSMENT TYPE ----	Delineation
OBSERVERS ----------	Rebecca Beduhn	WETLAND TYPE NWI ---	PEM1B
CONDITIONS ----------		WETLAND TYPE FSA ---	
PROJECT NAME ---------	85th Street Interchange	OWNER/OPERATOR ----	85th St BDJVG
PLANNED ACTIVITY -----			
YELLOW FLAG ----------		RED FLAG ----------	
WETLAND ACRES E ----	5.2	WETLAND ACRES P ---	5.2

VARIABLE	SCORE Existing	SCORE Predicted
Detritus ($V_{detritus}$)	0.25	0.25
Sedimentation in the Wetland (V_{sed})	1.00	1.00
Soil Organic Matter (V_{som})	0.75	0.75
Soil Pores (V_{pore})	0.75	0.75
Buffer Condition, Continuity, & Width (V_{buffer})	0.16	0.16
Ratio of Native to Non-Native Species (V_{pratio})	0.25	0.25
Vegetation Density (V_{pcover})	1.00	1.00
Microtopographic Complexity (V_{micro})	1.00	1.00
Source Area of Flow (V_{source})	1.00	1.00
Subsurface Hydrology Alterations (V_{subalt})	1.00	1.00
Surface Hydrology Alterations ($V_{surfalt}$)	1.00	1.00
Upland Use (V_{upuse})	0.10	0.10

CALCULATION OF FUNCTIONAL CAPACITY

EXISTING	FCI	FCU	PREDICTED	FCI	FCU
Mod. Groundwater Flow	0.84	4.39	Mod. Groundwater Flow	0.84	4.39
Vel. Reduc. Surf. Water	0.89	4.63	Vel. Reduc. Surf. Water	0.89	4.63
Elemental & Nutr. Cycling	0.49	2.56	Elemental & Nutr. Cycling	0.49	2.56
Retention of Particulates	0.71	3.69	Retention of Particulates	0.71	3.69
Organic Carbon Export	0.75	3.90	Organic Carbon Export	0.75	3.90
Maint. of Plant Comm.	0.67	3.47	Maint. of Plant Comm.	0.67	3.47
Habitat Interspersion	0.56	2.94	Habitat Interspersion	0.56	2.94

FUNCTIONS	CHANGE IN FCU's NUMERICAL	CHANGE IN FCU's PERCENT	MIN EFFECT (Yes or No)	JUSTIFICATION OF MINIMAL EFFECT IF **10 TO 20% LOSS** OF FUNCTION
Mod. Groundwater Flow	0.00	0.0	YES	
Vel. Reduc. Surf. Water	0.00	0.0	YES	
Ret, Conv. Elem. & Cmpd.	0.00	0.0	YES	
Retention of Particulates	0.00	0.0	YES	
Organic Carbon Export	0.00	0.0	YES	
Maint. of Plant Comm.	0.00	0.0	YES	
Habitat Interspersion	0.00	0.0	YES	

South Dakota Slope HGM Model, Version 4.0

Rev. 6/6/01

Variable Score Field Form

Field Office -		WAA Id. ----------	Wetland 4		Reference Site? (Y/N)	
County ------	Lincoln	Wetland Acres (pre-) ---	16.9	Wetland type (NWI)	PEM1A	
Date ---------	11/13/2018	Wetland Acres (post-) --	16.9	Wetland type (FSA)		
Owner/Op. --	85th St BDJVG	Planned Activity ---------				
Yellow Flag?		If yes, what?			Observers	
Red Flag? --		If yes, what?			Rebecca Beduhn	

Variable	Measurement or Condition Result				Rationale for Post-Project Changes	Variable Score Existing	Variable Score Projected
$V_{detritus}$	Detritus thickness (in.), pre-project ----------			0		0.25	0.25
V_{sed}	Sediment thickness (in.) in wetland, pre-project -----			1		0.75	0.75
	Other observations						
V_{som}	Dominant texture in upper 18" ----------			SiCL		1.00	1.00
	Color in upper 12": Value ---	2	Chroma -	1			
V_{pore}	Pores		SQI	2		0.75	0.75
	Structure		SQI	2			
	Rupture Resistance		SQI	2			
	Summary SQI Rating ----------			6			
V_{buffer}			Pre-	Post-		0.00	0.00
	Buffer continuity (%) ----------		5.8	5.8			
	Width of perm. veg. buffer (ft.) ----------		4.17	4.17			
	Continuity/Width Rating (B_1) ----------		0	0			
	Buffer condition ----------		⬇	⬇			
	Perm. veg. part ---		0	0			
	Tilled part ----------		None	None			
	Buffer Condition Rating (B_2) ----------		0	0			
V_{pratio}	Native species present in wetland (% of dominants) --			0		0.10	0.10
V_{pcover}			Pre-	Post-		0.10	0.10
	Percent of wetland area intact ----------		100	100			
	% ground cover - 40	Rating -	0.1	0.1			
	Percent of wetland area tilled ----------		0	0			
	% ground cover -	Rating -	0.1	0.1			
V_{micro}	Is the wetland area intact or disturbed?		disturbed			0.10	0.10
	Describe variability on wetland surface (hummocks, meanders)						
V_{source}	Watershed source alterations (Y/N)?		Y			0.75	0.75
	If Y, what?	Road					
	Percent of area affected ----------		20				
V_{subalt}	Alteration present? N	Type -----				1.00	1.00
$V_{surfalt}$	Alteration present? N	Type -----				1.00	1.00
V_{upuse}	Dominant use of upland (3 maximum)		% of area	Index		0.10	0.10
	Conventional Tillage Row Crop		88	0.1			
	Farmstead		12	0.1			

SLOPE MODEL FUNCTIONAL ASSESSMENT WORKSHEET

Version 4.0 (Rev. 6/6/01)

DATE ----------	##########		REMARKS ----------		
WETLAND ID ----------	Wetland 4		ASSESSMENT TYPE ----	Delineation	
OBSERVERS ----------	Rebecca Beduhn		WETLAND TYPE NWI ---	PEM1A	
CONDITIONS ----------			WETLAND TYPE FSA ---		
PROJECT NAME ---------	85th Street Interchange		OWNER/OPERATOR ----	85th St BDJVG	
PLANNED ACTIVITY -----					
YELLOW FLAG ----------		RED FLAG ----------			
WETLAND ACRES E ----	16.9	WETLAND ACRES P ---	16.9		

VARIABLE	SCORE Existing	SCORE Predicted
Detritus ($V_{detritus}$)	0.25	0.25
Sedimentation in the Wetland (V_{sed})	0.75	0.75
Soil Organic Matter (V_{som})	1.00	1.00
Soil Pores (V_{pore})	0.75	0.75
Buffer Condition, Continuity, & Width (V_{buffer})	0.00	0.00
Ratio of Native to Non-Native Species (V_{pratio})	0.10	0.10
Vegetation Density (V_{pcover})	0.10	0.10
Microtopographic Complexity (V_{micro})	0.10	0.10
Source Area of Flow (V_{source})	0.75	0.75
Subsurface Hydrology Alterations (V_{subalt})	1.00	1.00
Surface Hydrology Alterations ($V_{surfalt}$)	1.00	1.00
Upland Use (V_{upuse})	0.10	0.10

CALCULATION OF FUNCTIONAL CAPACITY

EXISTING	FCI	FCU	PREDICTED	FCI	FCU
Mod. Groundwater Flow	0.65	11.02	Mod. Groundwater Flow	0.65	11.02
Vel. Reduc. Surf. Water	0.40	6.76	Vel. Reduc. Surf. Water	0.40	6.76
Elemental & Nutr. Cycling	0.53	9.02	Elemental & Nutr. Cycling	0.53	9.02
Retention of Particulates	0.41	6.90	Retention of Particulates	0.41	6.90
Organic Carbon Export	0.51	8.66	Organic Carbon Export	0.51	8.66
Maint. of Plant Comm.	0.32	5.35	Maint. of Plant Comm.	0.32	5.35
Habitat Interspersion	0.30	5.07	Habitat Interspersion	0.30	5.07

FUNCTIONS	CHANGE IN FCU's NUMERICAL	CHANGE IN FCU's PERCENT	MIN EFFECT (Yes or No)	JUSTIFICATION OF MINIMAL EFFECT IF **10 TO 20% LOSS** OF FUNCTION
Mod. Groundwater Flow	0.00	0.0	YES	
Vel. Reduc. Surf. Water	0.00	0.0	YES	
Ret, Conv. Elem. & Cmpd.	0.00	0.0	YES	
Retention of Particulates	0.00	0.0	YES	
Organic Carbon Export	0.00	0.0	YES	
Maint. of Plant Comm.	0.00	0.0	YES	
Habitat Interspersion	0.00	0.0	YES	

Summary Sheet

USER NOTE: **Do not enter any data in this worksheet. All data and calculations are entered for you using previously entered information. If any of this information is incorrect, enter the correct information in the appropriate worksheet.**

Project Name/Location:

85th Street Interchange
Lincoln County, South Dakota
Wetland #5

	Variable	Data entered		Subindex
Vegetation	$V_{GRASSCONT}$	wetland perimeter (feet):	951.00	0.00
		grassland along perimeter (feet):	0.00	
		percent continuity:	0.00	
	$V_{GRASSWIDTH}$	grassland width (feet) at 12 points:		0.00
		Point 1:	0.00	
		Point 2:	0.00	
		Point 3:	0.00	
		Point 4:	0.00	
		Point 5:	0.00	
		Point 6:	0.00	
		Point 7:	0.00	
		Point 8:	0.00	
		Point 9:	0.00	
		Point 10:	0.00	
		Point 11:	0.00	
		Point 12:	0.00	
		mean width (feet):	0.00	
	$V_{VEGCOMP}$	(see vegetation worksheet for species entered)		0.34
		sum of species:	8.00	
		sum of C values:	17.00	
		mean coefficient of conservatism:	2.13	
		FQI:	6.01	

Soil	$V_{RECHARGE}$	Soil Recharge Potential Subindex:	1.00	1.00
	V_{SED}	**Eastern Prairie Potholes**		1.00
		mean depth to B horizon (inches):		
		Western Prairie Potholes		
		mean depth to B horizon (inches):	16.00	
	V_{SQI}	SQI scores for 4 samples:		0.01
		sample 1:	1.50	
		sample 2:	1.50	
		sample 3:	1.50	
		sample 4:	1.50	
		average SQI score:	1.50	
	V_{SOM}	**Indirect Measurements**		0.22
		Litter Depth for 4 samples:		
		sample 1:	0.00	
		sample 2:	0.00	
		sample 3:	0.00	
		sample 4:	0.00	
		Average Litter Depth (inches):	0.00	
		ADI for 4 samples:		
		Sample 1 hue:	7.50	
		value:	3.00	
		chroma:	1.00	
		ADI:	8.00	
		Sample 2 hue:	7.50	
		value:	2.50	
		chroma:	1.00	
		ADI:	7.00	
		Sample 3 hue:	7.50	
		value:	3.00	
		chroma:	1.00	
		ADI:	8.00	
		Sample 4 hue:	7.50	
		value:	2.50	
		chroma:	1.00	
		ADI:	7.00	
		average ADI:	7.50	
		Direct Measurements		
		% organic carbon for 0-15cm depth:		
		% organic carbon for 15-30cm depth:		
		mean percentage:		
		% organic carbon:	1.41	

Hydrogeomorphic	V_{OUT}	historic invert elevation in relation to wetland maximum depth:	1524.00	1.00
		present (or constructed) invert elevation:	1524.00	
		elevation of the edge of the historic wetland:	1524.00	
		elevation of a representative deepest portion of the wetland:	1523.50	
		if evaluating pit or fill, enter % volume of pit/fill vs. wetland (ex. 25%=25), otherwise enter 0:	0.00	
		ratio of the constructed elevation to the natural outlet elevation:	1.00	
	V_{SUBOUT}	depth of surface drainage invert:		1.00
		distance from WAA edge:		
		location/spacing of subsurface tile within the WAA:		
	V_{SOURCE}	type & effect of surface alteration(s):		1.00
		% of historic catchment area still contributing runoff:		
		additions of water from other sources:		
		change in wetland regime class?		
	V_{EDGE}	wetland perimeter (feet):	951.00	0.22
		wetland area (acres):	1.49	
		Shoreline Development Index:	1.05	
	$V_{CATCHWET}$	wetland area (acres):	1.49	0.69
		catchment area (acres):	6.49	
		ratio of catchment size to wetland size:	4.36	
Landscape & Landuse	V_{UPUSE}	total acre size of the present day catchment:	6.49	0.52
		acres of catchment for each curve number:		
		98		
		90		
		79	6.49	
		77		
		72		
		75		
		73		
		71		
		72		
		74		
		69		
		79		
		74		
		69		
		61		
		weighted average score for upland land use:	79.00	
	$V_{WETPROX}$	distance to nearest wetland(feet):	86.00	1.00
		distance to 2nd nearest wetland:	178.00	
		distance to 3rd nearest wetland:	206.00	
		distance to 4th nearest wetland:	293.00	
		distance to 5th nearest wetland:	412.00	
		mean distance (feet):	235.00	
	$V_{WETAREA}$	acres of palustrine wetlands within a 1-mile radius:	126.00	0.28
	V_{BASINS}	number of palustrine wetlands within a 1-mile radius:	71.00	0.33
	$V_{HABFRAG}$	miles of roads and linear attributes within a 1-mile radius:	15.00	0.00

Function	FCI	FCU
1. Water Storage	0.94	1.40
2. Groundwater Recharge	0.76	1.13
3. Retain Particlulates	0.65	0.97
4. Remove, Convert, and Sequester Dissolved Substances	0.61	0.91
5. Plant Community Resilience and Carbon Cycling	0.61	0.91
6a. Provide Faunal Habitat	0.68	1.02
6b. Provide Faunal Habitat (Alternate Formula)	0.60	0.90

Summary Sheet

USER NOTE: **Do not enter any data in this worksheet. All data and calculations are entered for you using previously entered information. If any of this information is incorrect, enter the correct information in the appropriate worksheet.**

Project Name/Location:

85th Street Interchange
Lincoln County, South Dakota
Wetland #6

	Variable	Data entered		Subindex
Vegetation	$V_{GRASSCONT}$	wetland perimeter (feet):	6573.00	0.81
		grassland along perimeter (feet):	5340.00	
		percent continuity:	81.24	
	$V_{GRASSWIDTH}$	grassland width (feet) at 12 points:		0.68
		Point 1:	50.00	
		Point 2:	50.00	
		Point 3:	50.00	
		Point 4:	0.00	
		Point 5:	50.00	
		Point 6:	50.00	
		Point 7:	50.00	
		Point 8:	0.00	
		Point 9:	0.00	
		Point 10:	0.00	
		Point 11:	50.00	
		Point 12:	50.00	
		mean width (feet):	33.33	
	$V_{VEGCOMP}$	(see vegetation worksheet for species entered)		0.32
		sum of species:	7.00	
		sum of C values:	15.00	
		mean coefficient of conservatism:	2.14	
		FQI:	5.67	

Soil	$V_{RECHARGE}$	Soil Recharge Potential Subindex:	0.50	0.50
	V_{SED}	**Eastern Prairie Potholes**		1.00
		mean depth to B horizon (inches):		
		Western Prairie Potholes		
		mean depth to B horizon (inches):	18.00	
	V_{SQI}	SQI scores for 4 samples:		0.03
		sample 1:	1.50	
		sample 2:	1.50	
		sample 3:	1.50	
		sample 4:	2.00	
		average SQI score:	1.63	
	V_{SOM}	**Indirect Measurements**		0.30
		Litter Depth for 4 samples:		
		sample 1:	0.00	
		sample 2:	0.00	
		sample 3:	0.00	
		sample 4:	0.00	
		Average Litter Depth (inches):	0.00	
		ADI for 4 samples:		
		Sample 1 hue:	10.00	
		value:	2.00	
		chroma:	1.00	
		ADI:	6.00	
		Sample 2 hue:	10.00	
		value:	2.00	
		chroma:	1.00	
		ADI:	6.00	
		Sample 3 hue:	10.00	
		value:	2.00	
		chroma:	2.00	
		ADI:	7.00	
		Sample 4 hue:	10.00	
		value:	2.00	
		chroma:	2.00	
		ADI:	7.00	
		average ADI:	6.50	
		Direct Measurements		
		% organic carbon for 0-15cm depth:		
		% organic carbon for 15-30cm depth:		
		mean percentage:		
		% organic carbon:	1.65	

Hydrogeomorphic	V_{OUT}	historic invert elevation in relation to wetland maximum depth:	1524.00	1.00
		present (or constructed) invert elevation:	1524.00	
		elevation of the edge of the historic wetland:	1525.00	
		elevation of a representative deepest portion of the wetland:	1523.00	
		if evaluating pit or fill, enter % volume of pit/fill vs. wetland (ex. 25%=25), otherwise enter 0:	0.00	
		ratio of the constructed elevation to the natural outlet elevation:	1.00	
	V_{SUBOUT}	depth of surface drainage invert:		1.00
		distance from WAA edge:		
		location/spacing of subsurface tile within the WAA:		
	V_{SOURCE}	type & effect of surface alteration(s):		1.00
		% of historic catchment area still contributing runoff:		
		additions of water from other sources:		
		change in wetland regime class?		
	V_{EDGE}	wetland perimeter (feet):	6573.00	1.00
		wetland area (acres):	9.12	
		Shoreline Development Index:	2.94	
	$V_{CATCHWET}$	wetland area (acres):	9.12	1.00
		catchment area (acres):	193.69	
		ratio of catchment size to wetland size:	21.24	
Landscape & Landuse	V_{UPUSE}	total acre size of the present day catchment:	193.69	0.53
		acres of catchment for each curve number:		
		98		
		90		
		79	169.39	
		77		
		72		
		75		
		73		
		71		
		72		
		74	24.30	
		69		
		79		
		74		
		69		
		61		
		weighted average score for upland land use:	78.37	
	$V_{WETPROX}$	distance to nearest wetland(feet):	20.00	1.00
		distance to 2nd nearest wetland:	85.00	
		distance to 3rd nearest wetland:	122.00	
		distance to 4th nearest wetland:	146.00	
		distance to 5th nearest wetland:	365.00	
		mean distance (feet):	147.60	
	$V_{WETAREA}$	acres of palustrine wetlands within a 1-mile radius:	126.00	0.28
	V_{BASINS}	number of palustrine wetlands within a 1-mile radius:	71.00	0.33
	$V_{HABFRAG}$	miles of roads and linear attributes within a 1-mile radius:	15.00	0.00

Function	FCI	FCU
1. Water Storage	0.94	8.57
2. Groundwater Recharge	0.82	7.48
3. Retain Particlulates	0.82	7.44
4. Remove, Convert, and Sequester Dissolved Substances	0.79	7.25
5. Plant Community Resilience and Carbon Cycling	0.74	6.74
6a. Provide Faunal Habitat	0.81	7.36
6b. Provide Faunal Habitat (Alternate Formula)	0.60	5.48

Summary Sheet

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Project Name/Location:

85th Street Interchange
Lincoln County, South Dakota
Wetland #8

	Variable	Data entered		Subindex
Vegetation	$V_{GRASSCONT}$	wetland perimeter (feet):	450.00	0.00
		grassland along perimeter (feet):	0.00	
		percent continuity:	0.00	
	$V_{GRASSWIDTH}$	grassland width (feet) at 12 points:		0.00
		Point 1:	0.00	
		Point 2:	0.00	
		Point 3:	0.00	
		Point 4:	0.00	
		Point 5:	0.00	
		Point 6:	0.00	
		Point 7:	0.00	
		Point 8:	0.00	
		Point 9:	0.00	
		Point 10:	0.00	
		Point 11:	0.00	
		Point 12:	0.00	
		mean width (feet):	0.00	
	$V_{VEGCOMP}$	(see vegetation worksheet for species entered)		0.16
		sum of species:	5.00	
		sum of C values:	7.00	
		mean coefficient of conservatism:	1.40	
		FQI:	3.13	

Soil	$V_{RECHARGE}$	Soil Recharge Potential Subindex:	0.75	0.75
	V_{SED}	**Eastern Prairie Potholes**		1.00
		mean depth to B horizon (inches):		
		Western Prairie Potholes		
		mean depth to B horizon (inches):	16.00	
	V_{SQI}	SQI scores for 4 samples:		0.01
		sample 1:	1.50	
		sample 2:	1.50	
		sample 3:	1.50	
		sample 4:	1.50	
		average SQI score:	1.50	
	V_{SOM}	**Indirect Measurements**		0.29
		Litter Depth for 4 samples:		
		sample 1:	0.00	
		sample 2:	0.00	
		sample 3:	0.00	
		sample 4:	0.00	
		Average Litter Depth (inches):	0.00	
		ADI for 4 samples:		
		Sample 1 hue:	2.50	
		value:	2.50	
		chroma:	2.00	
		ADI:	8.00	
		Sample 2 hue:	10.00	
		value:	2.00	
		chroma:	1.00	
		ADI:	6.00	
		Sample 3 hue:	10.00	
		value:	2.00	
		chroma:	1.00	
		ADI:	6.00	
		Sample 4 hue:	10.00	
		value:	2.00	
		chroma:	1.00	
		ADI:	6.00	
		average ADI:	6.50	
		Direct Measurements		
		% organic carbon for 0-15cm depth:		
		% organic carbon for 15-30cm depth:		
		mean percentage:		
		% organic carbon:	1.63	

Hydrogeomorphic	V_{OUT}	historic invert elevation in relation to wetland maximum depth:	1526.00	1.00
		present (or constructed) invert elevation:	1526.00	
		elevation of the edge of the historic wetland:	1526.00	
		elevation of a representative deepest portion of the wetland:	1525.00	
		if evaluating pit or fill, enter % volume of pit/fill vs. wetland (ex. 25%=25), otherwise enter 0:	0.00	
		ratio of the constructed elevation to the natural outlet elevation:	1.00	
	V_{SUBOUT}	depth of surface drainage invert:		1.00
		distance from WAA edge:		
		location/spacing of subsurface tile within the WAA:		
	V_{SOURCE}	type & effect of surface alteration(s):		1.00
		% of historic catchment area still contributing runoff:		
		additions of water from other sources:		
		change in wetland regime class?		
	V_{EDGE}	wetland perimeter (feet):	450.00	0.64
		wetland area (acres):	0.24	
		Shoreline Development Index:	1.24	
	$V_{CATCHWET}$	wetland area (acres):	0.24	1.00
		catchment area (acres):	3.22	
		ratio of catchment size to wetland size:	13.42	
Landscape & Landuse	V_{UPUSE}	total acre size of the present day catchment:	3.22	0.52
		acres of catchment for each curve number:		
		98		
		90		
		79	3.22	
		77		
		72		
		75		
		73		
		71		
		72		
		74		
		69		
		79		
		74		
		69		
		61		
		weighted average score for upland land use:	79.00	
	$V_{WETPROX}$	distance to nearest wetland(feet):	284.00	0.72
		distance to 2nd nearest wetland:	356.00	
		distance to 3rd nearest wetland:	495.00	
		distance to 4th nearest wetland:	557.00	
		distance to 5th nearest wetland:	778.00	
		mean distance (feet):	494.00	
	$V_{WETAREA}$	acres of palustrine wetlands within a 1-mile radius:	126.00	0.28
	V_{BASINS}	number of palustrine wetlands within a 1-mile radius:	70.00	0.32
	$V_{HABFRAG}$	miles of roads and linear attributes within a 1-mile radius:	17.00	0.00

Function	FCI	FCU
1. Water Storage	0.94	0.22
2. Groundwater Recharge	0.81	0.19
3. Retain Particlulates	0.61	0.15
4. Remove, Convert, and Sequester Dissolved Substances	0.60	0.14
5. Plant Community Resilience and Carbon Cycling	0.57	0.14
6a. Provide Faunal Habitat	0.65	0.16
6b. Provide Faunal Habitat (Alternate Formula)	0.55	0.13

Summary Sheet

USER NOTE: **Do not enter any data in this worksheet. All data and calculations are entered for you using previously entered information. If any of this information is incorrect, enter the correct information in the appropriate worksheet.**

Project Name/Location:

85th Street Interchange
Lincoln County, South Dakota
Wetland #9

	Variable	Data entered		Subindex
Vegetation	$V_{GRASSCONT}$	wetland perimeter (feet):	407.00	0.00
		grassland along perimeter (feet):	0.00	
		percent continuity:	0.00	
	$V_{GRASSWIDTH}$	grassland width (feet) at 12 points:		0.00
		Point 1:	0.00	
		Point 2:	0.00	
		Point 3:	0.00	
		Point 4:	0.00	
		Point 5:	0.00	
		Point 6:	0.00	
		Point 7:	0.00	
		Point 8:	0.00	
		Point 9:	0.00	
		Point 10:	0.00	
		Point 11:	0.00	
		Point 12:	0.00	
		mean width (feet):	0.00	
	$V_{VEGCOMP}$	(see vegetation worksheet for species entered)		0.08
		sum of species:	3.00	
		sum of C values:	3.00	
		mean coefficient of conservatism:	1.00	
		FQI:	1.73	

Soil	$V_{RECHARGE}$	Soil Recharge Potential Subindex:	1.00	1.00
	V_{SED}	**Eastern Prairie Potholes**		1.00
		mean depth to B horizon (inches):		
		Western Prairie Potholes		
		mean depth to B horizon (inches):	14.00	
	V_{SQI}	SQI scores for 4 samples:		0.06
		sample 1:	2.00	
		sample 2:	2.00	
		sample 3:	2.00	
		sample 4:	2.00	
		average SQI score:	2.00	
	V_{SOM}	**Indirect Measurements**		0.16
		Litter Depth for 4 samples:		
		sample 1:	0.00	
		sample 2:	0.00	
		sample 3:	0.00	
		sample 4:	0.00	
		Average Litter Depth (inches):	0.00	
		ADI for 4 samples:		
		Sample 1 hue:	10.00	
		value:	3.00	
		chroma:	2.00	
		ADI:	9.00	
		Sample 2 hue:	10.00	
		value:	3.00	
		chroma:	2.00	
		ADI:	9.00	
		Sample 3 hue:	10.00	
		value:	3.00	
		chroma:	2.00	
		ADI:	9.00	
		Sample 4 hue:	10.00	
		value:	3.00	
		chroma:	2.00	
		ADI:	9.00	
		average ADI:	9.00	
		Direct Measurements		
		% organic carbon for 0-15cm depth:		
		% organic carbon for 15-30cm depth:		
		mean percentage:		
		% organic carbon:	1.19	

Hydrogeomorphic	V_{OUT}	historic invert elevation in relation to wetland maximum depth:	1527.00	1.00
		present (or constructed) invert elevation:	1527.00	
		elevation of the edge of the historic wetland:	1527.00	
		elevation of a representative deepest portion of the wetland:	1526.50	
		if evaluating pit or fill, enter % volume of pit/fill vs. wetland (ex. 25%=25), otherwise enter 0:	0.00	
		ratio of the constructed elevation to the natural outlet elevation:	1.00	
	V_{SUBOUT}	depth of surface drainage invert:		1.00
		distance from WAA edge:		
		location/spacing of subsurface tile within the WAA:		
	V_{SOURCE}	type & effect of surface alteration(s):		1.00
		% of historic catchment area still contributing runoff:		
		additions of water from other sources:		
		change in wetland regime class?		
	V_{EDGE}	wetland perimeter (feet):	407.00	0.33
		wetland area (acres):	0.25	
		Shoreline Development Index:	1.10	
	$V_{CATCHWET}$	wetland area (acres):	0.25	1.00
		catchment area (acres):	4.34	
		ratio of catchment size to wetland size:	17.36	
Landscape & Landuse	V_{UPUSE}	total acre size of the present day catchment:	4.34	0.52
		acres of catchment for each curve number:		
		98		
		90		
		79	4.34	
		77		
		72		
		75		
		73		
		71		
		72		
		74		
		69		
		79		
		74		
		69		
		61		
		weighted average score for upland land use:	79.00	
	$V_{WETPROX}$	distance to nearest wetland(feet):	293.00	0.79
		distance to 2nd nearest wetland:	330.00	
		distance to 3rd nearest wetland:	365.00	
		distance to 4th nearest wetland:	545.00	
		distance to 5th nearest wetland:	637.00	
		mean distance (feet):	434.00	
	$V_{WETAREA}$	acres of palustrine wetlands within a 1-mile radius:	125.00	0.28
	V_{BASINS}	number of palustrine wetlands within a 1-mile radius:	70.00	0.32
	$V_{HABFRAG}$	miles of roads and linear attributes within a 1-mile radius:	17.00	0.00

Function	FCI	FCU
1. Water Storage	0.94	0.23
2. Groundwater Recharge	0.81	0.20
3. Retain Particlulates	0.60	0.15
4. Remove, Convert, and Sequester Dissolved Substances	0.56	0.14
5. Plant Community Resilience and Carbon Cycling	0.52	0.13
6a. Provide Faunal Habitat	0.61	0.15
6b. Provide Faunal Habitat (Alternate Formula)	0.53	0.13

South Dakota Slope HGM Model, Version 4.0

Rev. 6/6/01

Variable Score Field Form

Field Office -		WAA Id. ----------	Wetland 10			Reference Site? (Y/N)	
County ------	Lincoln	Wetland Acres (pre-) ---	2.5	Wetland type (NWI)		PEM1A	
Date ---------	11/13/2018	Wetland Acres (post-) --	2.5	Wetland type (FSA)			
Owner/Op. --	85th St BDJVG	Planned Activity ---------					
Yellow Flag?		If yes, what?				Observers	
Red Flag? --		If yes, what?				Rebecca Beduhn	

Variable	Measurement or Condition Result					Rationale for Post-Project Changes	Variable Score	
							Existing	Projected
$V_{detritus}$	Detritus thickness (in.), pre-project ----------				0		0.25	0.25
V_{sed}	Sediment thickness (in.) in wetland, pre-project -----				1		0.75	0.75
	Other observations							
V_{som}	Dominant texture in upper 18" ----------				SiCL		0.75	0.75
	Color in upper 12": Value ---	3	Chroma -		1			
V_{pore}	Pores		SQI		2		0.75	0.75
	Structure		SQI		2			
	Rupture Resistance		SQI		2			
	Summary SQI Rating ----------				6			
V_{buffer}			Pre-		Post-		0.00	0.00
	Buffer continuity (%) ----------		0		0			
	Width of perm. veg. buffer (ft.) ----------		0		0			
	Continuity/Width Rating (B_1) ----------		0		0			
	Buffer condition ----------		⬇		⬇			
	Perm. veg. part ---		0		0			
	Tilled part ----------		Con		Con			
	Buffer Condition Rating (B_2) ----------		0		0			
V_{pratio}	Native species present in wetland (% of dominants) --				25		0.25	0.25
V_{pcover}			Pre-		Post-		0.33	0.33
	Percent of wetland area intact ----------		50		50			
	% ground cover -	50 Rating -	0.5		0.5			
	Percent of wetland area tilled ----------		80		80			
	% ground cover -	100 Rating -	0.1		0.1			
V_{micro}	Is the wetland area intact or disturbed?		disturbed				0.10	0.10
	Describe variability on wetland surface (hummocks, meanders)							
	hummocks							
V_{source}	Watershed source alterations (Y/N)?		Y				0.75	0.75
	If Y, what?	N						
	Percent of area affected ----------		5					
V_{subalt}	Alteration present?	N Type -----					1.00	1.00
$V_{surfalt}$	Alteration present?	N Type -----					1.00	1.00
V_{upuse}	Dominant use of upland (3 maximum)		% of area		Index		0.10	0.10
	Conventional Tillage Row Crop		100		0.1			

SLOPE MODEL FUNCTIONAL ASSESSMENT WORKSHEET

Version 4.0 (Rev. 6/6/01)

DATE ----------	##########	REMARKS ----------	
WETLAND ID ----------	Wetland 10	ASSESSMENT TYPE ----	Delineation
OBSERVERS ----------	Rebecca Beduhn	WETLAND TYPE NWI ---	PEM1A
CONDITIONS ----------		WETLAND TYPE FSA ---	
PROJECT NAME ---------	85th Street Interchange	OWNER/OPERATOR ----	85th St BDJVG
PLANNED ACTIVITY -----			
YELLOW FLAG ----------		RED FLAG ----------	
WETLAND ACRES E ----	2.5	WETLAND ACRES P ---	2.5

VARIABLE	SCORE Existing	SCORE Predicted
Detritus ($V_{detritus}$)	0.25	0.25
Sedimentation in the Wetland (V_{sed})	0.75	0.75
Soil Organic Matter (V_{som})	0.75	0.75
Soil Pores (V_{pore})	0.75	0.75
Buffer Condition, Continuity, & Width (V_{buffer})	0.00	0.00
Ratio of Native to Non-Native Species (V_{pratio})	0.25	0.25
Vegetation Density (V_{pcover})	0.33	0.33
Microtopographic Complexity (V_{micro})	0.10	0.10
Source Area of Flow (V_{source})	0.75	0.75
Subsurface Hydrology Alterations (V_{subalt})	1.00	1.00
Surface Hydrology Alterations ($V_{surfalt}$)	1.00	1.00
Upland Use (V_{upuse})	0.10	0.10

CALCULATION OF FUNCTIONAL CAPACITY

EXISTING	FCI	FCU	PREDICTED	FCI	FCU
Mod. Groundwater Flow	0.69	1.74	Mod. Groundwater Flow	0.69	1.74
Vel. Reduc. Surf. Water	0.46	1.14	Vel. Reduc. Surf. Water	0.46	1.14
Elemental & Nutr. Cycling	0.48	1.19	Elemental & Nutr. Cycling	0.48	1.19
Retention of Particulates	0.45	1.12	Retention of Particulates	0.45	1.12
Organic Carbon Export	0.51	1.27	Organic Carbon Export	0.51	1.27
Maint. of Plant Comm.	0.44	1.11	Maint. of Plant Comm.	0.44	1.11
Habitat Interspersion	0.36	0.89	Habitat Interspersion	0.36	0.89

FUNCTIONS	CHANGE IN FCU's NUMERICAL	CHANGE IN FCU's PERCENT	MIN EFFECT (Yes or No)	JUSTIFICATION OF MINIMAL EFFECT IF **10 TO 20% LOSS** OF FUNCTION
Mod. Groundwater Flow	0.00	0.0	YES	
Vel. Reduc. Surf. Water	0.00	0.0	YES	
Ret, Conv. Elem. & Cmpd.	0.00	0.0	YES	
Retention of Particulates	0.00	0.0	YES	
Organic Carbon Export	0.00	0.0	YES	
Maint. of Plant Comm.	0.00	0.0	YES	
Habitat Interspersion	0.00	0.0	YES	

South Dakota Slope HGM Model, Version 4.0

Rev. 6/6/01

Variable Score Field Form

Field Office -		WAA Id. ----------	Wetland 11			Reference Site? (Y/N)	
County ------	Lincoln	Wetland Acres (pre-) ---	11.5	Wetland type (NWI)		PEM1B	
Date ---------	11/13/2018	Wetland Acres (post-) --	11.5	Wetland type (FSA)			
Owner/Op. --	85th St BDJVG	Planned Activity ---------					
Yellow Flag?		If yes, what?				Observers	
Red Flag? --		If yes, what?				Rebecca Beduhn	

Variable	Measurement or Condition Result				Rationale for Post-Project Changes	Variable Score	
						Existing	Projected
$V_{detritus}$	Detritus thickness (in.), pre-project ----------			0		0.25	0.25
V_{sed}	Sediment thickness (in.) in wetland, pre-project -----			0		1.00	1.00
	Other observations						
V_{som}	Dominant texture in upper 18" ----------			SiCL		1.00	1.00
	Color in upper 12": Value ---	2	Chroma -	1			
V_{pore}	Pores		SQI	2		0.75	0.75
	Structure		SQI	2			
	Rupture Resistance		SQI	2			
	Summary SQI Rating ----------			6			
V_{buffer}			Pre-	Post-		0.00	0.00
	Buffer continuity (%) ----------		41	41			
	Width of perm. veg. buffer (ft.) ----------		25	25			
	Continuity/Width Rating (B_1) ----------		0.2	0.2			
	Buffer condition ----------		⬇	⬇			
	Perm. veg. part ---		0	0			
	Tilled part ----------		None	None			
	Buffer Condition Rating (B_2) ----------		0	0			
V_{pratio}	Native species present in wetland (% of dominants) --			0		0.10	0.10
V_{pcover}			Pre-	Post-		1.00	1.00
	Percent of wetland area intact ----------		100	100			
	% ground cover - 100	Rating -	1	1			
	Percent of wetland area tilled ----------		0	0			
	% ground cover - 0	Rating -	1	1			
V_{micro}	Is the wetland area intact or disturbed?		Intact			1.00	0.50
	Describe variability on wetland surface (hummocks, meanders)						
V_{source}	Watershed source alterations (Y/N)?		Y			0.50	0.50
	If Y, what?	Roads, housing					
	Percent of area affected ----------		25				
V_{subalt}	Alteration present? N	Type -----				1.00	1.00
$V_{surfalt}$	Alteration present? N	Type -----				1.00	1.00
V_{upuse}	Dominant use of upland (3 maximum)		% of area	Index		0.10	0.10
	Conventional Tillage row crop		66.6	0.1			
	Farmstead		33.3	0.1			

SLOPE MODEL FUNCTIONAL ASSESSMENT WORKSHEET

Version 4.0 (Rev. 6/6/01)

DATE ----------	##########	REMARKS ----------			
WETLAND ID ----------	Wetland 11	ASSESSMENT TYPE ----		Delineation	
OBSERVERS ----------	Rebecca Beduhn	WETLAND TYPE NWI ---		PEM1B	
CONDITIONS ----------		WETLAND TYPE FSA ---			
PROJECT NAME ---------	85th Street Interchange	OWNER/OPERATOR ----		85th St BDJVG	
PLANNED ACTIVITY -----					
YELLOW FLAG ----------		RED FLAG ----------			
WETLAND ACRES E ----	11.5	WETLAND ACRES P ---	11.5		

VARIABLE	SCORE Existing	SCORE Predicted
Detritus ($V_{detritus}$)	0.25	0.25
Sedimentation in the Wetland (V_{sed})	1.00	1.00
Soil Organic Matter (V_{som})	1.00	1.00
Soil Pores (V_{pore})	0.75	0.75
Buffer Condition, Continuity, & Width (V_{buffer})	0.00	0.00
Ratio of Native to Non-Native Species (V_{pratio})	0.10	0.10
Vegetation Density (V_{pcover})	1.00	1.00
Microtopographic Complexity (V_{micro})	1.00	0.50
Source Area of Flow (V_{source})	0.50	0.50
Subsurface Hydrology Alterations (V_{subalt})	1.00	1.00
Surface Hydrology Alterations ($V_{surfalt}$)	1.00	1.00
Upland Use (V_{upuse})	0.10	0.10

CALCULATION OF FUNCTIONAL CAPACITY

EXISTING	FCI	FCU	PREDICTED	FCI	FCU
Mod. Groundwater Flow	0.77	8.81	Mod. Groundwater Flow	0.77	8.81
Vel. Reduc. Surf. Water	0.85	9.77	Vel. Reduc. Surf. Water	0.73	8.34
Elemental & Nutr. Cycling	0.52	5.95	Elemental & Nutr. Cycling	0.52	5.95
Retention of Particulates	0.68	7.86	Retention of Particulates	0.68	7.86
Organic Carbon Export	0.81	9.34	Organic Carbon Export	0.77	8.86
Maint. of Plant Comm.	0.62	7.09	Maint. of Plant Comm.	0.62	7.09
Habitat Interspersion	0.52	6.04	Habitat Interspersion	0.53	6.04

FUNCTIONS	CHANGE IN FCU's NUMERICAL	CHANGE IN FCU's PERCENT	MIN EFFECT (Yes or No)	JUSTIFICATION OF MINIMAL EFFECT IF **10 TO 20% LOSS** OF FUNCTION
Mod. Groundwater Flow	0.00	0.0	YES	
Vel. Reduc. Surf. Water	-1.44	-14.7		
Ret, Conv. Elem. & Cmpd.	0.00	0.0	YES	
Retention of Particulates	0.00	0.0	YES	
Organic Carbon Export	-0.48	-5.1	YES	
Maint. of Plant Comm.	0.00	0.0	YES	
Habitat Interspersion	0.00	0.0	YES	

Summary Sheet

USER NOTE: **Do not enter any data in this worksheet. All data and calculations are entered for you using previously entered information. If any of this information is incorrect, enter the correct information in the appropriate worksheet.**

Project Name/Location:

85th Street Interchange
Lincoln County, South Dakota
Wetland #12

	Variable	Data entered		Subindex
Vegetation	$V_{GRASSCONT}$	wetland perimeter (feet):	2112.00	0.19
		grassland along perimeter (feet):	411.00	
		percent continuity:	19.46	
	$V_{GRASSWIDTH}$	grassland width (feet) at 12 points:		0.02
		Point 1:	10.00	
		Point 2:	0.00	
		Point 3:	0.00	
		Point 4:	0.00	
		Point 5:	0.00	
		Point 6:	0.00	
		Point 7:	0.00	
		Point 8:	0.00	
		Point 9:	0.00	
		Point 10:	0.00	
		Point 11:	0.00	
		Point 12:	0.00	
		mean width (feet):	0.83	
	$V_{VEGCOMP}$	(see vegetation worksheet for species entered)		0.12
		sum of species:	4.00	
		sum of C values:	5.00	
		mean coefficient of conservatism:	1.25	
		FQI:	2.50	

Soil	$V_{RECHARGE}$	Soil Recharge Potential Subindex:	0.75	0.75
	V_{SED}	**Eastern Prairie Potholes**		0.10
		mean depth to B horizon (inches):		
		Western Prairie Potholes		
		mean depth to B horizon (inches):	0.75	
	V_{SQI}	SQI scores for 4 samples:		0.05
		sample 1:	1.50	
		sample 2:	2.00	
		sample 3:	2.00	
		sample 4:	2.00	
		average SQI score:	1.88	
	V_{SOM}	**Indirect Measurements**		0.35
		Litter Depth for 4 samples:		
		sample 1:	0.00	
		sample 2:	0.00	
		sample 3:	0.00	
		sample 4:	0.00	
		Average Litter Depth (inches):	0.00	
		ADI for 4 samples:		
		Sample 1 hue:	10.00	
		value:	2.00	
		chroma:	1.00	
		ADI:	6.00	
		Sample 2 hue:	10.00	
		value:	2.00	
		chroma:	1.00	
		ADI:	6.00	
		Sample 3 hue:	10.00	
		value:	2.00	
		chroma:	1.00	
		ADI:	6.00	
		Sample 4 hue:	10.00	
		value:	2.00	
		chroma:	1.00	
		ADI:	6.00	
		average ADI:	6.00	
		Direct Measurements		
		% organic carbon for 0-15cm depth:		
		% organic carbon for 15-30cm depth:		
		mean percentage:		
		% organic carbon:	1.82	

Hydrogeomorphic	V_{OUT}	historic invert elevation in relation to wetland maximum depth:	1513.00	1.00
		present (or constructed) invert elevation:	1513.00	
		elevation of the edge of the historic wetland:	1517.00	
		elevation of a representative deepest portion of the wetland:	1516.00	
		if evaluating pit or fill, enter % volume of pit/fill vs. wetland (ex. 25%=25), otherwise enter 0:	0.00	
		ratio of the constructed elevation to the natural outlet elevation:	1.00	
	V_{SUBOUT}	depth of surface drainage invert:		1.00
		distance from WAA edge:		
		location/spacing of subsurface tile within the WAA:		
	V_{SOURCE}	type & effect of surface alteration(s):		1.00
		% of historic catchment area still contributing runoff:		
		additions of water from other sources:		
		change in wetland regime class?		
	V_{EDGE}	wetland perimeter (feet):	2112.00	0.58
		wetland area (acres):	5.53	
		Shoreline Development Index:	1.21	
	$V_{CATCHWET}$	wetland area (acres):	5.53	0.84
		catchment area (acres):	28.26	
		ratio of catchment size to wetland size:	5.11	
Landscape & Landuse	V_{UPUSE}	total acre size of the present day catchment:	28.26	0.52
		acres of catchment for each curve number:		
		98		
		90		
		79	28.26	
		77		
		72		
		75		
		73		
		71		
		72		
		74		
		69		
		79		
		74		
		69		
		61		
		weighted average score for upland land use:	79.00	
	$V_{WETPROX}$	distance to nearest wetland(feet):	82.00	0.75
		distance to 2nd nearest wetland:	348.00	
		distance to 3rd nearest wetland:	369.00	
		distance to 4th nearest wetland:	662.00	
		distance to 5th nearest wetland:	874.00	
		mean distance (feet):	467.00	
	$V_{WETAREA}$	acres of palustrine wetlands within a 1-mile radius:	126.00	0.28
	V_{BASINS}	number of palustrine wetlands within a 1-mile radius:	71.00	0.33
	$V_{HABFRAG}$	miles of roads and linear attributes within a 1-mile radius:	15.00	0.00

Function	FCI	FCU
1. Water Storage	0.65	3.62
2. Groundwater Recharge	0.63	3.50
3. Retain Particlulates	0.20	1.11
4. Remove, Convert, and Sequester Dissolved Substances	0.54	2.99
5. Plant Community Resilience and Carbon Cycling	0.44	2.45
6a. Provide Faunal Habitat	0.52	2.89
6b. Provide Faunal Habitat (Alternate Formula)	0.38	2.09

Summary Sheet

USER NOTE: **Do not enter any data in this worksheet. All data and calculations are entered for you using previously entered information. If any of this information is incorrect, enter the correct information in the appropriate worksheet.**

Project Name/Location:

85th Street Interchange
Lincoln County, South Dakota
Wetland #14

	Variable	Data entered		Subindex
Vegetation	$V_{GRASSCONT}$	wetland perimeter (feet):	1046.00	1.00
		grassland along perimeter (feet):	1046.00	
		percent continuity:	100.00	
	$V_{GRASSWIDTH}$	grassland width (feet) at 12 points:		0.77
		Point 1:	37.00	
		Point 2:	41.00	
		Point 3:	20.00	
		Point 4:	7.00	
		Point 5:	50.00	
		Point 6:	50.00	
		Point 7:	5.00	
		Point 8:	50.00	
		Point 9:	50.00	
		Point 10:	50.00	
		Point 11:	42.00	
		Point 12:	50.00	
		mean width (feet):	37.67	
	$V_{VEGCOMP}$	(see vegetation worksheet for species entered)		0.00
		sum of species:	2.00	
		sum of C values:	0.00	
		mean coefficient of conservatism:	0.00	
		FQI:	0.00	

Soil	$V_{RECHARGE}$	Soil Recharge Potential Subindex:	0.10	0.10
	V_{SED}	**Eastern Prairie Potholes**		1.00
		mean depth to B horizon (inches):		
		Western Prairie Potholes		
		mean depth to B horizon (inches):	16.00	
	V_{SQI}	SQI scores for 4 samples:		0.04
		sample 1:	1.50	
		sample 2:	1.50	
		sample 3:	2.00	
		sample 4:	2.00	
		average SQI score:	1.75	
	V_{SOM}	**Indirect Measurements**		0.21
		Litter Depth for 4 samples:		
		sample 1:	0.00	
		sample 2:	0.00	
		sample 3:	0.00	
		sample 4:	0.00	
		Average Litter Depth (inches):	0.00	
		ADI for 4 samples:		
		Sample 1 hue:	10.00	
		value:	3.00	
		chroma:	1.00	
		ADI:	8.00	
		Sample 2 hue:	10.00	
		value:	3.00	
		chroma:	1.00	
		ADI:	8.00	
		Sample 3 hue:	10.00	
		value:	3.00	
		chroma:	1.00	
		ADI:	8.00	
		Sample 4 hue:	10.00	
		value:	3.00	
		chroma:	1.00	
		ADI:	8.00	
		average ADI:	8.00	
		Direct Measurements		
		% organic carbon for 0-15cm depth:		
		% organic carbon for 15-30cm depth:		
		mean percentage:		
		% organic carbon:	1.35	

Hydrogeomorphic	V_{OUT}	historic invert elevation in relation to wetland maximum depth:	1513.00	1.00
		present (or constructed) invert elevation:	1513.00	
		elevation of the edge of the historic wetland:	1513.00	
		elevation of a representative deepest portion of the wetland:	1511.00	
		if evaluating pit or fill, enter % volume of pit/fill vs. wetland (ex. 25%=25), otherwise enter 0:	0.00	
		ratio of the constructed elevation to the natural outlet elevation:	1.00	
	V_{SUBOUT}	depth of surface drainage invert:		1.00
		distance from WAA edge:		
		location/spacing of subsurface tile within the WAA:		
	V_{SOURCE}	type & effect of surface alteration(s):		1.00
		% of historic catchment area still contributing runoff:		
		additions of water from other sources:		
		change in wetland regime class?		
	V_{EDGE}	wetland perimeter (feet):	1046.00	0.67
		wetland area (acres):	1.27	
		Shoreline Development Index:	1.25	
	$V_{CATCHWET}$	wetland area (acres):	1.27	1.00
		catchment area (acres):	10.39	
		ratio of catchment size to wetland size:	8.18	
Landscape & Landuse	V_{UPUSE}	total acre size of the present day catchment:	10.39	0.52
		acres of catchment for each curve number:		
		98		
		90		
		79	9.69	
		77		
		72		
		75		
		73		
		71		
		72		
		74	0.70	
		69		
		79		
		74		
		69		
		61		
		weighted average score for upland land use:	78.66	
	$V_{WETPROX}$	distance to nearest wetland(feet):	32.00	0.94
		distance to 2nd nearest wetland:	204.00	
		distance to 3rd nearest wetland:	327.00	
		distance to 4th nearest wetland:	352.00	
		distance to 5th nearest wetland:	639.00	
		mean distance (feet):	310.80	
	$V_{WETAREA}$	acres of palustrine wetlands within a 1-mile radius:	140.00	0.32
	V_{BASINS}	number of palustrine wetlands within a 1-mile radius:	75.00	0.35
	$V_{HABFRAG}$	miles of roads and linear attributes within a 1-mile radius:	5.00	0.79

Function	FCI	FCU
1. Water Storage	0.94	1.19
2. Groundwater Recharge	0.74	0.95
3. Retain Particlulates	0.79	1.01
4. Remove, Convert, and Sequester Dissolved Substances	0.78	0.99
5. Plant Community Resilience and Carbon Cycling	0.67	0.86
6a. Provide Faunal Habitat	0.73	0.93
6b. Provide Faunal Habitat (Alternate Formula)	0.65	0.83

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Variable Score Field Form

Field Office -		WAA Id. ----------	Wetland 15			Reference Site? (Y/N)	
County ------	Lincoln	Wetland Acres (pre-) ---	2.9	Wetland type (NWI)		PEM1A	
Date ---------	11/13/2018	Wetland Acres (post-) --	2.9	Wetland type (FSA)			
Owner/Op. --	85th St BDJVG	Planned Activity ---------					
Yellow Flag?		If yes, what?				Observers	
Red Flag? --		If yes, what?				Rebecca Beduhn	

Variable	Measurement or Condition Result				Rationale for Post-Project Changes	Variable Score	
						Existing	Projected
$V_{detritus}$	Detritus thickness (in.), pre-project ----------			0		0.25	0.25
V_{sed}	Sediment thickness (in.) in wetland, pre-project -----			1		0.75	0.75
	Other observations						
V_{som}	Dominant texture in upper 18" ----------			SiCL		0.75	0.75
	Color in upper 12": Value ---	2	Chroma -	2			
V_{pore}	Pores		SQI	2		0.75	0.75
	Structure		SQI	2			
	Rupture Resistance		SQI	2			
	Summary SQI Rating ----------			6			
V_{buffer}			Pre-	Post-		0.07	0.07
	Buffer continuity (%) ----------		23	23			
	Width of perm. veg. buffer (ft.) ----------		0.17	0.17			
	Continuity/Width Rating (B_1) ----------		0.05	0.05			
	Buffer condition ----------		⬇	⬇			
	Perm. veg. part ---		0	0			
	Tilled part ----------		Con	Con			
	Buffer Condition Rating (B_2) ----------		0.1	0.1			
V_{pratio}	Native species present in wetland (% of dominants) --			0		0.10	0.10
V_{pcover}			Pre-	Post-		0.73	0.73
	Percent of wetland area intact ----------		70	70			
	% ground cover - 100	Rating -	1	1			
	Percent of wetland area tilled ----------		30	30			
	% ground cover - 30	Rating -	0.1	0.1			
V_{micro}	Is the wetland area intact or disturbed?		Disturbed			0.50	0.50
	Describe variability on wetland surface (hummocks, meanders)						
V_{source}	Watershed source alterations (Y/N)?		Y			0.75	0.75
	If Y, what? Road						
	Percent of area affected ----------		5				
V_{subalt}	Alteration present? N	Type -----				1.00	1.00
$V_{surfalt}$	Alteration present? N	Type -----				1.00	1.00
V_{upuse}	Dominant use of upland (3 maximum)		% of area	Index		0.10	0.10
	Conventional Tillage Row Crop		100	0.1			

SLOPE MODEL FUNCTIONAL ASSESSMENT WORKSHEET

Version 4.0 (Rev. 6/6/01)

DATE ----------	##########	REMARKS ----------		
WETLAND ID ----------	Wetland 15	ASSESSMENT TYPE ----		Delineation
OBSERVERS ----------	Rebecca Beduhn	WETLAND TYPE NWI ---		PEM1A
CONDITIONS ----------		WETLAND TYPE FSA ---		
PROJECT NAME ---------	85th Street Interchange	OWNER/OPERATOR ----		85th St BDJVG
PLANNED ACTIVITY -----				
YELLOW FLAG ----------		RED FLAG ----------		
WETLAND ACRES E ----	2.9	WETLAND ACRES P ---	2.9	

VARIABLE	SCORE Existing	SCORE Predicted
Detritus ($V_{detritus}$)	0.25	0.25
Sedimentation in the Wetland (V_{sed})	0.75	0.75
Soil Organic Matter (V_{som})	0.75	0.75
Soil Pores (V_{pore})	0.75	0.75
Buffer Condition, Continuity, & Width (V_{buffer})	0.07	0.07
Ratio of Native to Non-Native Species (V_{pratio})	0.10	0.10
Vegetation Density (V_{pcover})	0.73	0.73
Microtopographic Complexity (V_{micro})	0.50	0.50
Source Area of Flow (V_{source})	0.75	0.75
Subsurface Hydrology Alterations (V_{subalt})	1.00	1.00
Surface Hydrology Alterations ($V_{surfalt}$)	1.00	1.00
Upland Use (V_{upuse})	0.10	0.10

CALCULATION OF FUNCTIONAL CAPACITY

EXISTING	FCI	FCU	PREDICTED	FCI	FCU
Mod. Groundwater Flow	0.76	2.21	Mod. Groundwater Flow	0.76	2.21
Vel. Reduc. Surf. Water	0.66	1.92	Vel. Reduc. Surf. Water	0.66	1.92
Elemental & Nutr. Cycling	0.48	1.38	Elemental & Nutr. Cycling	0.48	1.38
Retention of Particulates	0.53	1.52	Retention of Particulates	0.53	1.52
Organic Carbon Export	0.64	1.86	Organic Carbon Export	0.64	1.86
Maint. of Plant Comm.	0.53	1.53	Maint. of Plant Comm.	0.53	1.53
Habitat Interspersion	0.48	1.38	Habitat Interspersion	0.48	1.38

FUNCTIONS	CHANGE IN FCU's NUMERICAL	CHANGE IN FCU's PERCENT	MIN EFFECT (Yes or No)	JUSTIFICATION OF MINIMAL EFFECT IF **10 TO 20% LOSS** OF FUNCTION
Mod. Groundwater Flow	0.00	0.0	YES	
Vel. Reduc. Surf. Water	0.00	0.0	YES	
Ret, Conv. Elem. & Cmpd.	0.00	0.0	YES	
Retention of Particulates	0.00	0.0	YES	
Organic Carbon Export	0.00	0.0	YES	
Maint. of Plant Comm.	0.00	0.0	YES	
Habitat Interspersion	0.00	0.0	YES	

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Variable Score Field Form

Field Office -		WAA Id. ----------	Wetland 16			Reference Site? (Y/N)	
County ------	Lincoln	Wetland Acres (pre-) ---	0.5	Wetland type (NWI)		PEM1B	
Date ---------	11/13/2018	Wetland Acres (post-) --	0.5	Wetland type (FSA)			
Owner/Op. --	85th St BDJVG	Planned Activity ---------					
Yellow Flag?		If yes, what?				Observers	
Red Flag? --		If yes, what?				Rebecca Beduhn	

Variable	Measurement or Condition Result				Rationale for Post-Project Changes	Variable Score	
						Existing	Projected
$V_{detritus}$	Detritus thickness (in.), pre-project ----------			0		0.25	0.25
V_{sed}	Sediment thickness (in.) in wetland, pre-project -----			0		0.10	0.10
	Other observations						
V_{som}	Dominant texture in upper 18" ----------			SiCL		1.00	1.00
	Color in upper 12": Value ---	2	Chroma -	1			
V_{pore}	Pores		SQI	2		0.75	0.75
	Structure		SQI	2			
	Rupture Resistance		SQI	2			
	Summary SQI Rating ----------			6			
V_{buffer}			Pre-	Post-		0.14	0.14
	Buffer continuity (%) ----------		90	90			
	Width of perm. veg. buffer (ft.) ----------		18	18			
	Continuity/Width Rating (B_1) ----------		0.2	0.2			
	Buffer condition ----------		⬇	⬇			
	Perm. veg. part ---		0	0			
	Tilled part ----------		None	None			
	Buffer Condition Rating (B_2) ----------		0.1	0.1			
V_{pratio}	Native species present in wetland (% of dominants) --			25		0.25	0.25
V_{pcover}			Pre-	Post-		1.00	1.00
	Percent of wetland area intact ----------		100	100			
	% ground cover - 100	Rating -	1	1			
	Percent of wetland area tilled ----------		0	0			
	% ground cover - 0	Rating -	1	1			
V_{micro}	Is the wetland area intact or disturbed?		Intact			0.50	0.50
	Describe variability on wetland surface (hummocks, meanders)						
V_{source}	Watershed source alterations (Y/N)?		Y			0.50	0.50
	If Y, what?	Roads					
	Percent of area affected ----------		50				
V_{subalt}	Alteration present? N	Type -----				1.00	1.00
$V_{surfalt}$	Alteration present? N	Type -----				1.00	1.00
V_{upuse}	Dominant use of upland (3 maximum)		% of area	Index		0.10	0.10
	Conventional Tillage Row Crop		100	0.1			

SLOPE MODEL FUNCTIONAL ASSESSMENT WORKSHEET

Version 4.0 (Rev. 6/6/01)

DATE ----------	##########	REMARKS ----------			
WETLAND ID ----------	Wetland 16	ASSESSMENT TYPE ----		Delineation	
OBSERVERS ----------	Rebecca Beduhn	WETLAND TYPE NWI ---		PEM1B	
CONDITIONS ----------		WETLAND TYPE FSA ---			
PROJECT NAME ---------	85th Street Interchange	OWNER/OPERATOR ----		85th St BDJVG	
PLANNED ACTIVITY -----					
YELLOW FLAG ----------		RED FLAG ----------			
WETLAND ACRES E ----	0.5	WETLAND ACRES P ---	0.5		

VARIABLE	SCORE Existing	SCORE Predicted
Detritus ($V_{detritus}$)	0.25	0.25
Sedimentation in the Wetland (V_{sed})	0.10	0.10
Soil Organic Matter (V_{som})	1.00	1.00
Soil Pores (V_{pore})	0.75	0.75
Buffer Condition, Continuity, & Width (V_{buffer})	0.14	0.14
Ratio of Native to Non-Native Species (V_{pratio})	0.25	0.25
Vegetation Density (V_{pcover})	1.00	1.00
Microtopographic Complexity (V_{micro})	0.50	0.50
Source Area of Flow (V_{source})	0.50	0.50
Subsurface Hydrology Alterations (V_{subalt})	1.00	1.00
Surface Hydrology Alterations ($V_{surfalt}$)	1.00	1.00
Upland Use (V_{upuse})	0.10	0.10

CALCULATION OF FUNCTIONAL CAPACITY

EXISTING	FCI	FCU	PREDICTED	FCI	FCU
Mod. Groundwater Flow	0.77	0.37	Mod. Groundwater Flow	0.77	0.37
Vel. Reduc. Surf. Water	0.68	0.33	Vel. Reduc. Surf. Water	0.68	0.33
Elemental & Nutr. Cycling	0.52	0.25	Elemental & Nutr. Cycling	0.52	0.25
Retention of Particulates	0.26	0.12	Retention of Particulates	0.26	0.12
Organic Carbon Export	0.77	0.37	Organic Carbon Export	0.77	0.37
Maint. of Plant Comm.	0.67	0.32	Maint. of Plant Comm.	0.67	0.32
Habitat Interspersion	0.56	0.27	Habitat Interspersion	0.56	0.27

FUNCTIONS	CHANGE IN FCU's NUMERICAL	CHANGE IN FCU's PERCENT	MIN EFFECT (Yes or No)	JUSTIFICATION OF MINIMAL EFFECT IF **10 TO 20% LOSS** OF FUNCTION
Mod. Groundwater Flow	0.00	0.0	YES	
Vel. Reduc. Surf. Water	0.00	0.0	YES	
Ret, Conv. Elem. & Cmpd.	0.00	0.0	YES	
Retention of Particulates	0.00	0.0	YES	
Organic Carbon Export	0.00	0.0	YES	
Maint. of Plant Comm.	0.00	0.0	YES	
Habitat Interspersion	0.00	0.0	YES	

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Variable Score Field Form

Field Office -		WAA Id. ----------	Wetland 17			Reference Site? (Y/N)	
County ------	Lincoln	Wetland Acres (pre-) ---	28.4	Wetland type (NWI)		PEM1B	
Date ---------	11/13/2018	Wetland Acres (post-) --	28.4	Wetland type (FSA)			
Owner/Op. --	85th St BDJVG	Planned Activity ---------					
Yellow Flag?		If yes, what?				Observers	
Red Flag? --		If yes, what?				Rebecca Beduhn	

Variable	Measurement or Condition Result				Rationale for Post-Project Changes	Variable Score	
						Existing	Projected
$V_{detritus}$	Detritus thickness (in.), pre-project ----------			0		0.25	0.25
V_{sed}	Sediment thickness (in.) in wetland, pre-project -----			0		1.00	1.00
	Other observations						
V_{som}	Dominant texture in upper 18" ----------			SiCL		0.75	0.75
	Color in upper 12": Value ---	2.5	Chroma -	2			
V_{pore}	Pores		SQI	2		0.75	0.75
	Structure		SQI	2			
	Rupture Resistance		SQI	2			
	Summary SQI Rating ----------			6			
V_{buffer}			Pre-	Post-		0.00	0.00
	Buffer continuity (%) ----------		4	4			
	Width of perm. veg. buffer (ft.) ----------		5	5			
	Continuity/Width Rating (B_1) ----------		0	0			
	Buffer condition ----------		⬇	⬇			
	Perm. veg. part ---		0	0			
	Tilled part ----------		Con	Con			
	Buffer Condition Rating (B_2) ----------		0.1	0.1			
V_{pratio}	Native species present in wetland (% of dominants) --			20		0.25	0.25
V_{pcover}			Pre-	Post-		1.00	1.00
	Percent of wetland area intact ----------		100	100			
	% ground cover - 100	Rating -	1	1			
	Percent of wetland area tilled ----------		0	0			
	% ground cover - 0	Rating -	1	1			
V_{micro}	Is the wetland area intact or disturbed?		Intact			1.00	1.00
	Describe variability on wetland surface (hummocks, meanders)						
V_{source}	Watershed source alterations (Y/N)?		Y			0.50	0.50
	If Y, what?	Road, housing					
	Percent of area affected ----------		20				
V_{subalt}	Alteration present? N	Type -----				1.00	1.00
$V_{surfalt}$	Alteration present? N	Type -----				1.00	1.00
V_{upuse}	Dominant use of upland (3 maximum)		% of area	Index		0.10	0.10
	Conventional Tillage Row Crop		99	0.1			
	Urban, semi-pervious, or impervious surfac		1	0			

SLOPE MODEL FUNCTIONAL ASSESSMENT WORKSHEET

Version 4.0 (Rev. 6/6/01)

DATE ----------	##########		REMARKS ----------		
WETLAND ID ----------	Wetland 17		ASSESSMENT TYPE ----	Delineation	
OBSERVERS ----------	Rebecca Beduhn		WETLAND TYPE NWI ---	PEM1B	
CONDITIONS ----------			WETLAND TYPE FSA ---		
PROJECT NAME ---------	85th Street Interchange		OWNER/OPERATOR ----	85th St BDJVG	
PLANNED ACTIVITY -----					
YELLOW FLAG ----------		RED FLAG ----------			
WETLAND ACRES E ----	28.4	WETLAND ACRES P ---	28.4		

VARIABLE	SCORE Existing	SCORE Predicted
Detritus ($V_{detritus}$)	0.25	0.25
Sedimentation in the Wetland (V_{sed})	1.00	1.00
Soil Organic Matter (V_{som})	0.75	0.75
Soil Pores (V_{pore})	0.75	0.75
Buffer Condition, Continuity, & Width (V_{buffer})	0.00	0.00
Ratio of Native to Non-Native Species (V_{pratio})	0.25	0.25
Vegetation Density (V_{pcover})	1.00	1.00
Microtopographic Complexity (V_{micro})	1.00	1.00
Source Area of Flow (V_{source})	0.50	0.50
Subsurface Hydrology Alterations (V_{subalt})	1.00	1.00
Surface Hydrology Alterations ($V_{surfalt}$)	1.00	1.00
Upland Use (V_{upuse})	0.10	0.10

CALCULATION OF FUNCTIONAL CAPACITY

EXISTING	FCI	FCU	PREDICTED	FCI	FCU
Mod. Groundwater Flow	0.77	21.76	Mod. Groundwater Flow	0.77	21.77
Vel. Reduc. Surf. Water	0.85	24.14	Vel. Reduc. Surf. Water	0.85	24.14
Elemental & Nutr. Cycling	0.46	13.13	Elemental & Nutr. Cycling	0.46	13.13
Retention of Particulates	0.68	19.40	Retention of Particulates	0.68	19.41
Organic Carbon Export	0.75	21.30	Organic Carbon Export	0.75	21.30
Maint. of Plant Comm.	0.67	18.93	Maint. of Plant Comm.	0.67	18.93
Habitat Interspersion	0.52	14.90	Habitat Interspersion	0.53	14.91

FUNCTIONS	CHANGE IN FCU's NUMERICAL	CHANGE IN FCU's PERCENT	MIN EFFECT (Yes or No)	JUSTIFICATION OF MINIMAL EFFECT IF **10 TO 20% LOSS** OF FUNCTION
Mod. Groundwater Flow	0.00	0.0	YES	
Vel. Reduc. Surf. Water	0.00	0.0	YES	
Ret, Conv. Elem. & Cmpd.	0.00	0.0	YES	
Retention of Particulates	0.00	0.0	YES	
Organic Carbon Export	0.00	0.0	YES	
Maint. of Plant Comm.	0.00	0.0	YES	
Habitat Interspersion	0.01	0.0	YES	

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Variable Score Field Form

Field Office -		WAA Id. ----------	Wetland 18			Reference Site? (Y/N)	
County ------	Lincoln	Wetland Acres (pre-) ---	17.0	Wetland type (NWI)		PEM1B	
Date ---------	11/13/2018	Wetland Acres (post-) --	17.0	Wetland type (FSA)			
Owner/Op. --	85th St BDJVG	Planned Activity ---------					
Yellow Flag?		If yes, what?				Observers	
Red Flag? --		If yes, what?				Rebecca Beduhn	

Variable	Measurement or Condition Result					Rationale for Post-Project Changes	Variable Score	
							Existing	Projected
$V_{detritus}$	Detritus thickness (in.), pre-project ----------				0		0.25	0.25
V_{sed}	Sediment thickness (in.) in wetland, pre-project -----				0		1.00	1.00
	Other observations							
V_{som}	Dominant texture in upper 18" ----------				SiCL		0.75	0.75
	Color in upper 12": Value ---	2	Chroma -		2			
V_{pore}	Pores		SQI		2		0.75	0.75
	Structure		SQI		2			
	Rupture Resistance		SQI		2			
	Summary SQI Rating ----------				6			
V_{buffer}			Pre-		Post-		0.00	0.00
	Buffer continuity (%) ----------		6		6			
	Width of perm. veg. buffer (ft.) ----------		5		5			
	Continuity/Width Rating (B_1) ----------		0		0			
	Buffer condition ----------		⬇		⬇			
	Perm. veg. part ---		0		0			
	Tilled part ----------		Con		Con			
	Buffer Condition Rating (B_2) ----------		0.1		0.1			
V_{pratio}	Native species present in wetland (% of dominants) --				0		0.10	0.10
V_{pcover}			Pre-		Post-		1.00	1.00
	Percent of wetland area intact ----------		100		100			
	% ground cover - 100	Rating -	1		1			
	Percent of wetland area tilled ----------		0		0			
	% ground cover - 0	Rating -	1		1			
V_{micro}	Is the wetland area intact or disturbed?		Intact				1.00	1.00
	Describe variability on wetland surface (hummocks, meanders)							
V_{source}	Watershed source alterations (Y/N)?		Y				0.75	0.75
	If Y, what?	Road						
	Percent of area affected ----------							
V_{subalt}	Alteration present?	N	Type -----				1.00	1.00
$V_{surfalt}$	Alteration present?	N	Type -----				1.00	1.00
V_{upuse}	Dominant use of upland (3 maximum)			% of area	Index		0.10	0.10
	Conventional Tillage Row Crop			100	0.1			

SLOPE MODEL FUNCTIONAL ASSESSMENT WORKSHEET

Version 4.0 (Rev. 6/6/01)

DATE ----------	##########	REMARKS ----------			
WETLAND ID ----------	Wetland 18	ASSESSMENT TYPE ----		Delineation	
OBSERVERS ----------	Rebecca Beduhn	WETLAND TYPE NWI ---		PEM1B	
CONDITIONS ----------		WETLAND TYPE FSA ---			
PROJECT NAME ---------	85th Street Interchange	OWNER/OPERATOR ----		85th St BDJVG	
PLANNED ACTIVITY -----					
YELLOW FLAG ----------		RED FLAG ----------			
WETLAND ACRES E ----	17.0	WETLAND ACRES P ---	17.0		

VARIABLE	SCORE Existing	SCORE Predicted
Detritus ($V_{detritus}$)	0.25	0.25
Sedimentation in the Wetland (V_{sed})	1.00	1.00
Soil Organic Matter (V_{som})	0.75	0.75
Soil Pores (V_{pore})	0.75	0.75
Buffer Condition, Continuity, & Width (V_{buffer})	0.00	0.00
Ratio of Native to Non-Native Species (V_{pratio})	0.10	0.10
Vegetation Density (V_{pcover})	1.00	1.00
Microtopographic Complexity (V_{micro})	1.00	1.00
Source Area of Flow (V_{source})	0.75	0.75
Subsurface Hydrology Alterations (V_{subalt})	1.00	1.00
Surface Hydrology Alterations ($V_{surfalt}$)	1.00	1.00
Upland Use (V_{upuse})	0.10	0.10

CALCULATION OF FUNCTIONAL CAPACITY

EXISTING	FCI	FCU	PREDICTED	FCI	FCU
Mod. Groundwater Flow	0.81	13.71	Mod. Groundwater Flow	0.81	13.71
Vel. Reduc. Surf. Water	0.87	14.72	Vel. Reduc. Surf. Water	0.87	14.72
Elemental & Nutr. Cycling	0.48	8.11	Elemental & Nutr. Cycling	0.48	8.11
Retention of Particulates	0.68	11.62	Retention of Particulates	0.68	11.62
Organic Carbon Export	0.75	12.75	Organic Carbon Export	0.75	12.75
Maint. of Plant Comm.	0.62	10.48	Maint. of Plant Comm.	0.62	10.48
Habitat Interspersion	0.53	8.93	Habitat Interspersion	0.53	8.93

FUNCTIONS	CHANGE IN FCU's NUMERICAL	CHANGE IN FCU's PERCENT	MIN EFFECT (Yes or No)	JUSTIFICATION OF MINIMAL EFFECT IF **10 TO 20% LOSS** OF FUNCTION
Mod. Groundwater Flow	0.00	0.0	YES	
Vel. Reduc. Surf. Water	0.00	0.0	YES	
Ret, Conv. Elem. & Cmpd.	0.00	0.0	YES	
Retention of Particulates	0.00	0.0	YES	
Organic Carbon Export	0.00	0.0	YES	
Maint. of Plant Comm.	0.00	0.0	YES	
Habitat Interspersion	0.00	0.0	YES	

South Dakota Slope HGM Model, Version 4.0

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Variable Score Field Form

Field Office -		WAA Id. ----------	Wetland 19			Reference Site? (Y/N)	
County ------	Lincoln	Wetland Acres (pre-) ---	7.2	Wetland type (NWI)		PEM1C	
Date ---------	11/13/2018	Wetland Acres (post-) --	7.2	Wetland type (FSA)			
Owner/Op. --	85th St BDJVG	Planned Activity ---------					
Yellow Flag?		If yes, what?				Observers	
Red Flag? --		If yes, what?				Rebecca Beduhn	

Variable	Measurement or Condition Result				Rationale for Post-Project Changes	Variable Score	
						Existing	Projected
$V_{detritus}$	Detritus thickness (in.), pre-project ----------			0		0.25	0.25
V_{sed}	Sediment thickness (in.) in wetland, pre-project -----			0		1.00	1.00
	Other observations						
V_{som}	Dominant texture in upper 18" ----------			SiCL		0.75	0.75
	Color in upper 12": Value ---	2	Chroma -	2			
V_{pore}	Pores		SQI	2		0.75	0.75
	Structure		SQI	2			
	Rupture Resistance		SQI	2			
	Summary SQI Rating ----------			6			
V_{buffer}			Pre-	Post-		0.00	0.00
	Buffer continuity (%) ----------		13	13			
	Width of perm. veg. buffer (ft.) ----------		0.42	0.42			
	Continuity/Width Rating (B_1) ----------		0	0			
	Buffer condition ----------		⬇	⬇			
	Perm. veg. part ---		0	0			
	Tilled part ----------		Con	Con			
	Buffer Condition Rating (B_2) ----------		0.1	0.1			
V_{pratio}	Native species present in wetland (% of dominants) --			0		0.10	0.10
V_{pcover}			Pre-	Post-		0.82	0.82
	Percent of wetland area intact ----------		80	80			
	% ground cover - 100	Rating -	1	1			
	Percent of wetland area tilled ----------		20	20			
	% ground cover - 20	Rating -	0.1	0.1			
V_{micro}	Is the wetland area intact or disturbed?		Both			0.50	0.50
	Describe variability on wetland surface (hummocks, meanders)						
V_{source}	Watershed source alterations (Y/N)?		Y			0.75	0.75
	If Y, what?	Road					
	Percent of area affected ----------		10				
V_{subalt}	Alteration present? N	Type -----				1.00	1.00
$V_{surfalt}$	Alteration present? N	Type -----				1.00	1.00
V_{upuse}	Dominant use of upland (3 maximum)		% of area	Index		0.09	0.09
	Conventional Tillage Row Crop		94	0.1			
	Urban, semi pervious, etc		6	0			

SLOPE MODEL FUNCTIONAL ASSESSMENT WORKSHEET

Version 4.0 (Rev. 6/6/01)

DATE ----------	##########		REMARKS ----------		
WETLAND ID ----------	Wetland 19		ASSESSMENT TYPE ----	Delineation	
OBSERVERS ----------	Rebecca Beduhn		WETLAND TYPE NWI ---	PEM1C	
CONDITIONS ----------			WETLAND TYPE FSA ---		
PROJECT NAME ---------	85th Street Interchange		OWNER/OPERATOR ----	85th St BDJVG	
PLANNED ACTIVITY -----					
YELLOW FLAG ----------		RED FLAG ----------			
WETLAND ACRES E ----	7.2	WETLAND ACRES P ---	7.2		

VARIABLE	SCORE Existing	SCORE Predicted
Detritus ($V_{detritus}$)	0.25	0.25
Sedimentation in the Wetland (V_{sed})	1.00	1.00
Soil Organic Matter (V_{som})	0.75	0.75
Soil Pores (V_{pore})	0.75	0.75
Buffer Condition, Continuity, & Width (V_{buffer})	0.00	0.00
Ratio of Native to Non-Native Species (V_{pratio})	0.10	0.10
Vegetation Density (V_{pcover})	0.82	0.82
Microtopographic Complexity (V_{micro})	0.50	0.50
Source Area of Flow (V_{source})	0.75	0.75
Subsurface Hydrology Alterations (V_{subalt})	1.00	1.00
Surface Hydrology Alterations ($V_{surfalt}$)	1.00	1.00
Upland Use (V_{upuse})	0.09	0.09

CALCULATION OF FUNCTIONAL CAPACITY

EXISTING	FCI	FCU	PREDICTED	FCI	FCU
Mod. Groundwater Flow	0.78	5.58	Mod. Groundwater Flow	0.78	5.57
Vel. Reduc. Surf. Water	0.70	4.99	Vel. Reduc. Surf. Water	0.70	4.99
Elemental & Nutr. Cycling	0.48	3.42	Elemental & Nutr. Cycling	0.48	3.42
Retention of Particulates	0.65	4.68	Retention of Particulates	0.65	4.68
Organic Carbon Export	0.66	4.76	Organic Carbon Export	0.66	4.76
Maint. of Plant Comm.	0.56	4.00	Maint. of Plant Comm.	0.56	4.00
Habitat Interspersion	0.48	3.44	Habitat Interspersion	0.48	3.43

FUNCTIONS	CHANGE IN FCU's NUMERICAL	CHANGE IN FCU's PERCENT	MIN EFFECT (Yes or No)	JUSTIFICATION OF MINIMAL EFFECT IF **10 TO 20% LOSS** OF FUNCTION
Mod. Groundwater Flow	0.00	-0.1	YES	
Vel. Reduc. Surf. Water	0.00	0.0	YES	
Ret, Conv. Elem. & Cmpd.	0.00	0.0	YES	
Retention of Particulates	0.00	-0.1	YES	
Organic Carbon Export	0.00	0.0	YES	
Maint. of Plant Comm.	0.00	0.0	YES	
Habitat Interspersion	-0.01	-0.2	YES	

South Dakota Slope HGM Model, Version 4.0

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Variable Score Field Form

Field Office -		WAA Id. ----------	Wetland 20			Reference Site? (Y/N)	
County ------	Lincoln	Wetland Acres (pre-) ---	36.3	Wetland type (NWI)		PEM1A	
Date ---------	11/13/2018	Wetland Acres (post-) --	36.3	Wetland type (FSA)			
Owner/Op. --	85th St BDJVG	Planned Activity ---------					
Yellow Flag?		If yes, what?				Observers	
Red Flag? --		If yes, what?				Rebecca Beduhn	

Variable	Measurement or Condition Result					Rationale for Post-Project Changes	Variable Score	
							Existing	Projected
$V_{detritus}$	Detritus thickness (in.), pre-project ----------				0		0.25	0.25
V_{sed}	Sediment thickness (in.) in wetland, pre-project -----				1		0.75	0.75
	Other observations							
V_{som}	Dominant texture in upper 18" ----------				SiCL		0.75	0.75
	Color in upper 12": Value ---	2	Chroma -		2			
V_{pore}	Pores		SQI		2		0.75	0.75
	Structure		SQI		2			
	Rupture Resistance		SQI		2			
	Summary SQI Rating ----------				6			
V_{buffer}			Pre-		Post-		0.00	0.00
	Buffer continuity (%) ----------		4		4			
	Width of perm. veg. buffer (ft.) ----------		0.4		0.4			
	Continuity/Width Rating (B_1) ----------		0		0			
	Buffer condition ----------		⬇		⬇			
	Perm. veg. part ---		0		0			
	Tilled part ----------		Con		Con			
	Buffer Condition Rating (B_2) ----------		0.1		0.1			
V_{pratio}	Native species present in wetland (% of dominants) --				0		0.10	0.10
V_{pcover}			Pre-		Post-		0.28	0.28
	Percent of wetland area intact ----------		20		20			
	% ground cover - 100	Rating -	1		1			
	Percent of wetland area tilled ----------		80		80			
	% ground cover - 20	Rating -	0.1		0.1			
V_{micro}	Is the wetland area intact or disturbed?		Disturbed				0.10	0.10
	Describe variability on wetland surface (hummocks, meanders)							
V_{source}	Watershed source alterations (Y/N)?		Y				0.75	0.75
	If Y, what? Road							
	Percent of area affected ----------		5					
V_{subalt}	Alteration present? N	Type -----					1.00	1.00
$V_{surfalt}$	Alteration present? N	Type -----					1.00	1.00
V_{upuse}	Dominant use of upland (3 maximum)		% of area		Index		0.10	0.10
	Conventional Tillage Row Crop		100		0.1			

SLOPE MODEL FUNCTIONAL ASSESSMENT WORKSHEET

Version 4.0 (Rev. 6/6/01)

DATE ----------	##########		REMARKS ----------		
WETLAND ID ----------	Wetland 20		ASSESSMENT TYPE ----	Delineation	
OBSERVERS ----------	Rebecca Beduhn		WETLAND TYPE NWI ---	PEM1A	
CONDITIONS ----------			WETLAND TYPE FSA ---		
PROJECT NAME ---------	85th Street Interchange		OWNER/OPERATOR ----	85th St BDJVG	
PLANNED ACTIVITY -----					
YELLOW FLAG ----------		RED FLAG ----------			
WETLAND ACRES E ----	36.3	WETLAND ACRES P ---	36.3		

VARIABLE	SCORE Existing	SCORE Predicted
Detritus ($V_{detritus}$)	0.25	0.25
Sedimentation in the Wetland (V_{sed})	0.75	0.75
Soil Organic Matter (V_{som})	0.75	0.75
Soil Pores (V_{pore})	0.75	0.75
Buffer Condition, Continuity, & Width (V_{buffer})	0.00	0.00
Ratio of Native to Non-Native Species (V_{pratio})	0.10	0.10
Vegetation Density (V_{pcover})	0.28	0.28
Microtopographic Complexity (V_{micro})	0.10	0.10
Source Area of Flow (V_{source})	0.75	0.75
Subsurface Hydrology Alterations (V_{subalt})	1.00	1.00
Surface Hydrology Alterations ($V_{surfalt}$)	1.00	1.00
Upland Use (V_{upuse})	0.10	0.10

CALCULATION OF FUNCTIONAL CAPACITY

EXISTING	FCI	FCU	PREDICTED	FCI	FCU
Mod. Groundwater Flow	0.69	24.89	Mod. Groundwater Flow	0.69	24.89
Vel. Reduc. Surf. Water	0.45	16.15	Vel. Reduc. Surf. Water	0.45	16.15
Elemental & Nutr. Cycling	0.48	17.32	Elemental & Nutr. Cycling	0.48	17.32
Retention of Particulates	0.44	15.91	Retention of Particulates	0.44	15.91
Organic Carbon Export	0.50	17.97	Organic Carbon Export	0.50	17.97
Maint. of Plant Comm.	0.38	13.67	Maint. of Plant Comm.	0.38	13.67
Habitat Interspersion	0.35	12.52	Habitat Interspersion	0.35	12.52

FUNCTIONS	CHANGE IN FCU's NUMERICAL	CHANGE IN FCU's PERCENT	MIN EFFECT (Yes or No)	JUSTIFICATION OF MINIMAL EFFECT IF **10 TO 20% LOSS** OF FUNCTION
Mod. Groundwater Flow	0.00	0.0	YES	
Vel. Reduc. Surf. Water	0.00	0.0	YES	
Ret, Conv. Elem. & Cmpd.	0.00	0.0	YES	
Retention of Particulates	0.00	0.0	YES	
Organic Carbon Export	0.00	0.0	YES	
Maint. of Plant Comm.	0.00	0.0	YES	
Habitat Interspersion	0.00	0.0	YES	

South Dakota Slope HGM Model, Version 4.0

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Variable Score Field Form

Field Office -		WAA Id. ----------	Wetland 21			Reference Site? (Y/N)	
County ------	Lincoln	Wetland Acres (pre-) ---	1.2	Wetland type (NWI)		PEM1B	
Date ---------	11/13/2018	Wetland Acres (post-) --	1.2	Wetland type (FSA)			
Owner/Op. --	85th St BDJVG	Planned Activity ---------					
Yellow Flag?		If yes, what?				Observers	
Red Flag? --		If yes, what?				Rebecca Beduhn	

Variable	Measurement or Condition Result				Rationale for Post-Project Changes	Variable Score	
						Existing	Projected
$V_{detritus}$	Detritus thickness (in.), pre-project ----------			0		0.25	0.25
V_{sed}	Sediment thickness (in.) in wetland, pre-project -----			1		0.75	0.75
	Other observations						
V_{som}	Dominant texture in upper 18" ----------			SiCL		0.75	0.75
	Color in upper 12": Value ---	2	Chroma -	2			
V_{pore}	Pores		SQI	2		0.75	0.75
	Structure		SQI	2			
	Rupture Resistance		SQI	2			
	Summary SQI Rating ----------			6			
V_{buffer}			Pre-	Post-		0.00	0.00
	Buffer continuity (%) ----------		9	9			
	Width of perm. veg. buffer (ft.) ----------		0.4	0.4			
	Continuity/Width Rating (B_1) ----------		0	0			
	Buffer condition ----------		⬇	⬇			
	Perm. veg. part ---		0	0			
	Tilled part ----------		Con	Con			
	Buffer Condition Rating (B_2) ----------		0.1	0.1			
V_{pratio}	Native species present in wetland (% of dominants) --			0		0.10	0.10
V_{pcover}			Pre-	Post-		0.55	0.55
	Percent of wetland area intact ----------		50	50			
	% ground cover - 100	Rating -	1	1			
	Percent of wetland area tilled ----------		50	50			
	% ground cover - 20	Rating -	0.1	0.1			
V_{micro}	Is the wetland area intact or disturbed?		Both			0.50	0.50
	Describe variability on wetland surface (hummocks, meanders)						
V_{source}	Watershed source alterations (Y/N)?		Y			0.75	0.75
	If Y, what? Road						
	Percent of area affected ----------		10				
V_{subalt}	Alteration present? N	Type -----				1.00	1.00
$V_{surfalt}$	Alteration present? N	Type -----				1.00	1.00
V_{upuse}	Dominant use of upland (3 maximum)		% of area	Index		0.10	0.10
	Conventional Tillage Row Crop		100	0.1			

SLOPE MODEL FUNCTIONAL ASSESSMENT WORKSHEET

Version 4.0 (Rev. 6/6/01)

DATE ----------	##########	REMARKS ----------			
WETLAND ID ----------	Wetland 21	ASSESSMENT TYPE ----		Delineation	
OBSERVERS ----------	Rebecca Beduhn	WETLAND TYPE NWI ---		PEM1B	
CONDITIONS ----------		WETLAND TYPE FSA ---			
PROJECT NAME ---------	85th Street Interchange	OWNER/OPERATOR ----		85th St BDJVG	
PLANNED ACTIVITY -----					
YELLOW FLAG ----------		RED FLAG ----------			
WETLAND ACRES E ----	1.2	WETLAND ACRES P ---	1.2		

VARIABLE	SCORE Existing	SCORE Predicted
Detritus ($V_{detritus}$)	0.25	0.25
Sedimentation in the Wetland (V_{sed})	0.75	0.75
Soil Organic Matter (V_{som})	0.75	0.75
Soil Pores (V_{pore})	0.75	0.75
Buffer Condition, Continuity, & Width (V_{buffer})	0.00	0.00
Ratio of Native to Non-Native Species (V_{pratio})	0.10	0.10
Vegetation Density (V_{pcover})	0.55	0.55
Microtopographic Complexity (V_{micro})	0.50	0.50
Source Area of Flow (V_{source})	0.75	0.75
Subsurface Hydrology Alterations (V_{subalt})	1.00	1.00
Surface Hydrology Alterations ($V_{surfalt}$)	1.00	1.00
Upland Use (V_{upuse})	0.10	0.10

CALCULATION OF FUNCTIONAL CAPACITY

EXISTING	FCI	FCU	PREDICTED	FCI	FCU
Mod. Groundwater Flow	0.73	0.91	Mod. Groundwater Flow	0.73	0.91
Vel. Reduc. Surf. Water	0.61	0.76	Vel. Reduc. Surf. Water	0.61	0.76
Elemental & Nutr. Cycling	0.48	0.59	Elemental & Nutr. Cycling	0.48	0.59
Retention of Particulates	0.48	0.60	Retention of Particulates	0.48	0.60
Organic Carbon Export	0.60	0.74	Organic Carbon Export	0.60	0.74
Maint. of Plant Comm.	0.47	0.58	Maint. of Plant Comm.	0.47	0.58
Habitat Interspersion	0.41	0.51	Habitat Interspersion	0.41	0.51

FUNCTIONS	CHANGE IN FCU's NUMERICAL	CHANGE IN FCU's PERCENT	MIN EFFECT (Yes or No)	JUSTIFICATION OF MINIMAL EFFECT IF **10 TO 20% LOSS** OF FUNCTION
Mod. Groundwater Flow	0.00	0.0	YES	
Vel. Reduc. Surf. Water	0.00	0.0	YES	
Ret, Conv. Elem. & Cmpd.	0.00	0.0	YES	
Retention of Particulates	0.00	0.0	YES	
Organic Carbon Export	0.00	0.0	YES	
Maint. of Plant Comm.	0.00	0.0	YES	
Habitat Interspersion	0.00	0.0	YES	

South Dakota Slope HGM Model, Version 4.0

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Variable Score Field Form

Field Office -		WAA Id. ----------	Wetland 23			Reference Site? (Y/N)	
County ------	Lincoln	Wetland Acres (pre-) ---	10.6	Wetland type (NWI)		PEM1B	
Date ---------	11/13/2018	Wetland Acres (post-) --	10.6	Wetland type (FSA)			
Owner/Op. --	85th St BDJVG	Planned Activity ---------					
Yellow Flag?		If yes, what?				Observers	
Red Flag? --		If yes, what?				Rebecca Beduhn	

Variable	Measurement or Condition Result				Rationale for Post-Project Changes	Variable Score	
						Existing	Projected
$V_{detritus}$	Detritus thickness (in.), pre-project ----------			0		0.25	0.25
V_{sed}	Sediment thickness (in.) in wetland, pre-project -----			0		1.00	1.00
	Other observations						
V_{som}	Dominant texture in upper 18" ----------			SiCL		0.75	0.75
	Color in upper 12": Value ---	3	Chroma -	1			
V_{pore}	Pores		SQI	2		0.75	0.75
	Structure		SQI	2			
	Rupture Resistance		SQI	2			
	Summary SQI Rating ----------			6			
V_{buffer}			Pre-	Post-		0.07	0.07
	Buffer continuity (%) ----------		23	23			
	Width of perm. veg. buffer (ft.) ----------		0.5	0.5			
	Continuity/Width Rating (B_1) ----------		0.05	0.05			
	Buffer condition ----------		⬇	⬇			
	Perm. veg. part ---		0	0			
	Tilled part ----------		Con	Con			
	Buffer Condition Rating (B_2) ----------		0.1	0.1			
V_{pratio}	Native species present in wetland (% of dominants) --			0		0.10	0.10
V_{pcover}			Pre-	Post-		1.00	1.00
	Percent of wetland area intact ----------		100	100			
	% ground cover - 100	Rating -	1	1			
	Percent of wetland area tilled ----------		0	0			
	% ground cover - 0	Rating -	1	1			
V_{micro}	Is the wetland area intact or disturbed?		intact			1.00	1.00
	Describe variability on wetland surface (hummocks, meanders)						
V_{source}	Watershed source alterations (Y/N)?		Y			0.75	0.75
	If Y, what?	Road					
	Percent of area affected ----------		10				
V_{subalt}	Alteration present? N	Type -----				1.00	1.00
$V_{surfalt}$	Alteration present? N	Type -----				1.00	1.00
V_{upuse}	Dominant use of upland (3 maximum)		% of area	Index		0.10	0.10
	Conventional Tillage Row Crop		100	0.1			

SLOPE MODEL FUNCTIONAL ASSESSMENT WORKSHEET

Version 4.0 (Rev. 6/6/01)

DATE ----------	##########		REMARKS ----------		
WETLAND ID ----------	Wetland 23		ASSESSMENT TYPE ----	Delineation	
OBSERVERS ----------	Rebecca Beduhn		WETLAND TYPE NWI ---	PEM1B	
CONDITIONS ----------			WETLAND TYPE FSA ---		
PROJECT NAME ---------	85th Street Interchange		OWNER/OPERATOR ----	85th St BDJVG	
PLANNED ACTIVITY -----					
YELLOW FLAG ----------		RED FLAG ----------			
WETLAND ACRES E ----	10.6	WETLAND ACRES P ---	10.6		

VARIABLE	SCORE Existing	SCORE Predicted
Detritus ($V_{detritus}$)	0.25	0.25
Sedimentation in the Wetland (V_{sed})	1.00	1.00
Soil Organic Matter (V_{som})	0.75	0.75
Soil Pores (V_{pore})	0.75	0.75
Buffer Condition, Continuity, & Width (V_{buffer})	0.07	0.07
Ratio of Native to Non-Native Species (V_{pratio})	0.10	0.10
Vegetation Density (V_{pcover})	1.00	1.00
Microtopographic Complexity (V_{micro})	1.00	1.00
Source Area of Flow (V_{source})	0.75	0.75
Subsurface Hydrology Alterations (V_{subalt})	1.00	1.00
Surface Hydrology Alterations ($V_{surfalt}$)	1.00	1.00
Upland Use (V_{upuse})	0.10	0.10

CALCULATION OF FUNCTIONAL CAPACITY

EXISTING	FCI	FCU	PREDICTED	FCI	FCU
Mod. Groundwater Flow	0.81	8.56	Mod. Groundwater Flow	0.81	8.56
Vel. Reduc. Surf. Water	0.87	9.24	Vel. Reduc. Surf. Water	0.87	9.24
Elemental & Nutr. Cycling	0.48	5.07	Elemental & Nutr. Cycling	0.48	5.07
Retention of Particulates	0.70	7.38	Retention of Particulates	0.70	7.38
Organic Carbon Export	0.75	7.97	Organic Carbon Export	0.75	7.97
Maint. of Plant Comm.	0.62	6.55	Maint. of Plant Comm.	0.62	6.55
Habitat Interspersion	0.54	5.76	Habitat Interspersion	0.54	5.76

FUNCTIONS	CHANGE IN FCU's NUMERICAL	CHANGE IN FCU's PERCENT	MIN EFFECT (Yes or No)	JUSTIFICATION OF MINIMAL EFFECT IF **10 TO 20% LOSS** OF FUNCTION
Mod. Groundwater Flow	0.00	0.0	YES	
Vel. Reduc. Surf. Water	0.00	0.0	YES	
Ret, Conv. Elem. & Cmpd.	0.00	0.0	YES	
Retention of Particulates	0.00	0.0	YES	
Organic Carbon Export	0.00	0.0	YES	
Maint. of Plant Comm.	0.00	0.0	YES	
Habitat Interspersion	0.00	0.0	YES	

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Variable Score Field Form

Field Office -		WAA Id. ----------	Wetland 24			Reference Site? (Y/N)	
County ------	Lincoln	Wetland Acres (pre-) ---	0.5	Wetland type (NWI)		PEM1A	
Date ---------	11/13/2018	Wetland Acres (post-) --	0.5	Wetland type (FSA)			
Owner/Op. --	85th St BDJVG	Planned Activity ---------					
Yellow Flag?		If yes, what?				Observers	
Red Flag? --		If yes, what?				Rebecca Beduhn	

Variable	Measurement or Condition Result					Rationale for Post-Project Changes	Variable Score Existing	Variable Score Projected
$V_{detritus}$	Detritus thickness (in.), pre-project ----------				0		0.25	0.25
V_{sed}	Sediment thickness (in.) in wetland, pre-project -----				1		0.75	0.75
	Other observations							
V_{som}	Dominant texture in upper 18" ----------				SiCL		1.00	1.00
	Color in upper 12": Value ---	2	Chroma -		1			
V_{pore}	Pores		SQI		2		0.75	75.00
	Structure		SQI		2			
	Rupture Resistance		SQI		2			
	Summary SQI Rating ----------				6			
V_{buffer}			Pre-		Post-		0.00	0.00
	Buffer continuity (%) ----------		0		0			
	Width of perm. veg. buffer (ft.) ----------		0		0			
	Continuity/Width Rating (B_1) ----------		0		0			
	Buffer condition ----------		⬇		⬇			
	Perm. veg. part ---		0		0			
	Tilled part ----------		Con		Con			
	Buffer Condition Rating (B_2) ----------		0.1		0.1			
V_{pratio}	Native species present in wetland (% of dominants) --				0		0.10	0.10
V_{pcover}			Pre-		Post-		0.10	0.10
	Percent of wetland area intact ----------		0		0			
	% ground cover - 0	Rating -	0		0			
	Percent of wetland area tilled ----------		100		100			
	% ground cover - 20	Rating -	0.1		0.1			
V_{micro}	Is the wetland area intact or disturbed?		Disturbed				0.10	0.10
	Describe variability on wetland surface (hummocks, meanders)							
V_{source}	Watershed source alterations (Y/N)?		N				1.00	1.00
	If Y, what?							
	Percent of area affected ----------							
V_{subalt}	Alteration present? N	Type -----					1.00	1.00
$V_{surfalt}$	Alteration present? N	Type -----					1.00	1.00
V_{upuse}	Dominant use of upland (3 maximum)		% of area		Index		0.10	0.10
	Conventional Tillage Row Crop		100		0.1			

SLOPE MODEL FUNCTIONAL ASSESSMENT WORKSHEET

Version 4.0 (Rev. 6/6/01)

DATE ----------	##########		REMARKS ----------		
WETLAND ID ----------	Wetland 24		ASSESSMENT TYPE ----	Delineation	
OBSERVERS ----------	Rebecca Beduhn		WETLAND TYPE NWI ---	PEM1A	
CONDITIONS ----------			WETLAND TYPE FSA ---		
PROJECT NAME ---------	85th Street Interchange		OWNER/OPERATOR ----	85th St BDJVG	
PLANNED ACTIVITY -----					
YELLOW FLAG ----------		RED FLAG ----------			
WETLAND ACRES E ----	0.5	WETLAND ACRES P ---	0.5		

VARIABLE	SCORE Existing	SCORE Predicted
Detritus ($V_{detritus}$)	0.25	0.25
Sedimentation in the Wetland (V_{sed})	0.75	0.75
Soil Organic Matter (V_{som})	1.00	1.00
Soil Pores (V_{pore})	0.75	75.00
Buffer Condition, Continuity, & Width (V_{buffer})	0.00	0.00
Ratio of Native to Non-Native Species (V_{pratio})	0.10	0.10
Vegetation Density (V_{pcover})	0.10	0.10
Microtopographic Complexity (V_{micro})	0.10	0.10
Source Area of Flow (V_{source})	1.00	1.00
Subsurface Hydrology Alterations (V_{subalt})	1.00	1.00
Surface Hydrology Alterations ($V_{surfalt}$)	1.00	1.00
Upland Use (V_{upuse})	0.10	0.10

CALCULATION OF FUNCTIONAL CAPACITY

EXISTING	FCI	FCU	PREDICTED	FCI	FCU
Mod. Groundwater Flow	0.70	0.32	Mod. Groundwater Flow	4.36	2.01
Vel. Reduc. Surf. Water	0.42	0.19	Vel. Reduc. Surf. Water	0.42	0.19
Elemental & Nutr. Cycling	0.55	0.25	Elemental & Nutr. Cycling	3.97	1.83
Retention of Particulates	0.41	0.19	Retention of Particulates	0.41	0.19
Organic Carbon Export	0.51	0.24	Organic Carbon Export	0.51	0.24
Maint. of Plant Comm.	0.32	0.15	Maint. of Plant Comm.	0.32	0.15
Habitat Interspersion	0.30	0.14	Habitat Interspersion	0.30	0.14

FUNCTIONS	CHANGE IN FCU's NUMERICAL	CHANGE IN FCU's PERCENT	MIN EFFECT (Yes or No)	JUSTIFICATION OF MINIMAL EFFECT IF **10 TO 20% LOSS** OF FUNCTION
Mod. Groundwater Flow	1.69	525.1	YES	
Vel. Reduc. Surf. Water	0.00	0.0	YES	
Ret, Conv. Elem. & Cmpd.	1.57	622.5	YES	
Retention of Particulates	0.00	0.0	YES	
Organic Carbon Export	0.00	0.0	YES	
Maint. of Plant Comm.	0.00	0.0	YES	
Habitat Interspersion	0.00	0.0	YES	

South Dakota Slope HGM Model, Version 4.0

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Variable Score Field Form

Field Office -		WAA Id. ----------	Wetland 25			Reference Site? (Y/N)	
County ------	Lincoln	Wetland Acres (pre-) ---	4.6	Wetland type (NWI)		PEM1B	
Date ---------	11/13/2018	Wetland Acres (post-) --	4.6	Wetland type (FSA)			
Owner/Op. --	85th St BDJVG	Planned Activity ---------					
Yellow Flag?		If yes, what?				Observers	
Red Flag? --		If yes, what?				Rebecca Beduhn	

Variable	Measurement or Condition Result				Rationale for Post-Project Changes	Variable Score	
						Existing	Projected
$V_{detritus}$	Detritus thickness (in.), pre-project ----------			0		0.25	0.25
V_{sed}	Sediment thickness (in.) in wetland, pre-project -----			0		1.00	1.00
	Other observations						
V_{som}	Dominant texture in upper 18" ----------			SiCL		0.75	0.75
	Color in upper 12": Value ---	3	Chroma -	1			
V_{pore}	Pores		SQI	2		0.75	0.75
	Structure		SQI	2			
	Rupture Resistance		SQI	2			
	Summary SQI Rating ----------			6			
V_{buffer}			Pre-	Post-		0.12	0.12
	Buffer continuity (%) ----------		64	64			
	Width of perm. veg. buffer (ft.) ----------		14	14			
	Continuity/Width Rating (B_1) ----------		0.15	0.15			
	Buffer condition ----------		⬇	⬇			
	Perm. veg. part ---		0	0			
	Tilled part ----------		Con	Con			
	Buffer Condition Rating (B_2) ----------		0.1	0.1			
V_{pratio}	Native species present in wetland (% of dominants) --			0		0.10	0.10
V_{pcover}			Pre-	Post-		1.00	1.00
	Percent of wetland area intact ----------		100	100			
	% ground cover - 100	Rating -	1	1			
	Percent of wetland area tilled ----------		0	0			
	% ground cover - 0	Rating -	1	1			
V_{micro}	Is the wetland area intact or disturbed?		Intact			1.00	1.00
	Describe variability on wetland surface (hummocks, meanders)						
V_{source}	Watershed source alterations (Y/N)?		Y			0.75	0.75
	If Y, what?	Roads					
	Percent of area affected ----------		20				
V_{subalt}	Alteration present? N	Type -----				1.00	1.00
$V_{surfalt}$	Alteration present? N	Type -----				1.00	1.00
V_{upuse}	Dominant use of upland (3 maximum)		% of area	Index		0.10	0.10
	Conventional Tillage Row Crop		100	0.1			

SLOPE MODEL FUNCTIONAL ASSESSMENT WORKSHEET

Version 4.0 (Rev. 6/6/01)

DATE ----------	##########		REMARKS ----------		
WETLAND ID ----------	Wetland 25		ASSESSMENT TYPE ----	Delineation	
OBSERVERS ----------	Rebecca Beduhn		WETLAND TYPE NWI ---	PEM1B	
CONDITIONS ----------			WETLAND TYPE FSA ---		
PROJECT NAME ---------	85th Street Interchange		OWNER/OPERATOR ----	85th St BDJVG	
PLANNED ACTIVITY -----					
YELLOW FLAG ----------		RED FLAG ----------			
WETLAND ACRES E ----	4.6	WETLAND ACRES P ---	4.6		

VARIABLE	SCORE Existing	SCORE Predicted
Detritus ($V_{detritus}$)	0.25	0.25
Sedimentation in the Wetland (V_{sed})	1.00	1.00
Soil Organic Matter (V_{som})	0.75	0.75
Soil Pores (V_{pore})	0.75	0.75
Buffer Condition, Continuity, & Width (V_{buffer})	0.12	0.12
Ratio of Native to Non-Native Species (V_{pratio})	0.10	0.10
Vegetation Density (V_{pcover})	1.00	1.00
Microtopographic Complexity (V_{micro})	1.00	1.00
Source Area of Flow (V_{source})	0.75	0.75
Subsurface Hydrology Alterations (V_{subalt})	1.00	1.00
Surface Hydrology Alterations ($V_{surfalt}$)	1.00	1.00
Upland Use (V_{upuse})	0.10	0.10

CALCULATION OF FUNCTIONAL CAPACITY

EXISTING	FCI	FCU	PREDICTED	FCI	FCU
Mod. Groundwater Flow	0.81	3.71	Mod. Groundwater Flow	0.81	3.71
Vel. Reduc. Surf. Water	0.87	4.02	Vel. Reduc. Surf. Water	0.87	4.02
Elemental & Nutr. Cycling	0.48	2.20	Elemental & Nutr. Cycling	0.48	2.20
Retention of Particulates	0.70	3.24	Retention of Particulates	0.70	3.24
Organic Carbon Export	0.75	3.45	Organic Carbon Export	0.75	3.45
Maint. of Plant Comm.	0.62	2.84	Maint. of Plant Comm.	0.62	2.84
Habitat Interspersion	0.56	2.56	Habitat Interspersion	0.56	2.56

FUNCTIONS	CHANGE IN FCU's NUMERICAL	CHANGE IN FCU's PERCENT	MIN EFFECT (Yes or No)	JUSTIFICATION OF MINIMAL EFFECT IF **10 TO 20% LOSS** OF FUNCTION
Mod. Groundwater Flow	0.00	0.0	YES	
Vel. Reduc. Surf. Water	0.00	0.0	YES	
Ret, Conv. Elem. & Cmpd.	0.00	0.0	YES	
Retention of Particulates	0.00	0.0	YES	
Organic Carbon Export	0.00	0.0	YES	
Maint. of Plant Comm.	0.00	0.0	YES	
Habitat Interspersion	0.00	0.0	YES	

South Dakota Slope HGM Model, Version 4.0

Rev. 6/6/01

Variable Score Field Form

Field Office -		WAA Id. ----------	Wetland 27			Reference Site? (Y/N)	
County ------	Lincoln	Wetland Acres (pre-) ---	3.4	Wetland type (NWI)		PEM1B	
Date ---------	11/13/2018	Wetland Acres (post-) --	3.4	Wetland type (FSA)			
Owner/Op. --	85th St BDJVG	Planned Activity ---------					
Yellow Flag?		If yes, what?				Observers	
Red Flag? --		If yes, what?				Rebecca Beduhn	

Variable	Measurement or Condition Result				Rationale for Post-Project Changes	Variable Score	
						Existing	Projected
$V_{detritus}$	Detritus thickness (in.), pre-project ----------			0		0.25	0.25
V_{sed}	Sediment thickness (in.) in wetland, pre-project -----			0		1.00	1.00
	Other observations						
V_{som}	Dominant texture in upper 18" ----------			SiCL		0.75	0.75
	Color in upper 12": Value ---	2	Chroma -	2			
V_{pore}	Pores		SQI	2		0.75	0.75
	Structure		SQI	2			
	Rupture Resistance		SQI	2			
	Summary SQI Rating ----------			6			
V_{buffer}			Pre-	Post-		0.00	0.00
	Buffer continuity (%) ----------		17	17			
	Width of perm. veg. buffer (ft.) ----------		0.83	0.83			
	Continuity/Width Rating (B_1) ----------		0	0			
	Buffer condition ----------		⬇	⬇			
	Perm. veg. part ---		0	0			
	Tilled part ----------		Con	Con			
	Buffer Condition Rating (B_2) ----------		0.1	0.1			
V_{pratio}	Native species present in wetland (% of dominants) --			0		0.10	0.10
V_{pcover}			Pre-	Post-		1.00	1.00
	Percent of wetland area intact ----------		100	100			
	% ground cover - 100	Rating -	1	1			
	Percent of wetland area tilled ----------		0	0			
	% ground cover - 0	Rating -	1	1			
V_{micro}	Is the wetland area intact or disturbed?		Intact			1.00	1.00
	Describe variability on wetland surface (hummocks, meanders)						
V_{source}	Watershed source alterations (Y/N)?		Y			0.75	0.75
	If Y, what?						
	Percent of area affected ----------		20				
V_{subalt}	Alteration present? N	Type -----				1.00	1.00
$V_{surfalt}$	Alteration present? N	Type -----				1.00	1.00
V_{upuse}	Dominant use of upland (3 maximum)		% of area	Index		0.10	0.10
	Conventional Tillage Row Crop		100	0.1			

SLOPE MODEL FUNCTIONAL ASSESSMENT WORKSHEET

Version 4.0 (Rev. 6/6/01)

DATE ----------	##########		REMARKS ----------		
WETLAND ID ----------	Wetland 27		ASSESSMENT TYPE ----	Delineation	
OBSERVERS ----------	Rebecca Beduhn		WETLAND TYPE NWI ---	PEM1B	
CONDITIONS ----------			WETLAND TYPE FSA ---		
PROJECT NAME ---------	85th Street Interchange		OWNER/OPERATOR ----	85th St BDJVG	
PLANNED ACTIVITY -----					
YELLOW FLAG ----------		RED FLAG ----------			
WETLAND ACRES E ----	3.4	WETLAND ACRES P ---	3.4		

VARIABLE	SCORE Existing	SCORE Predicted
Detritus ($V_{detritus}$)	0.25	0.25
Sedimentation in the Wetland (V_{sed})	1.00	1.00
Soil Organic Matter (V_{som})	0.75	0.75
Soil Pores (V_{pore})	0.75	0.75
Buffer Condition, Continuity, & Width (V_{buffer})	0.00	0.00
Ratio of Native to Non-Native Species (V_{pratio})	0.10	0.10
Vegetation Density (V_{pcover})	1.00	1.00
Microtopographic Complexity (V_{micro})	1.00	1.00
Source Area of Flow (V_{source})	0.75	0.75
Subsurface Hydrology Alterations (V_{subalt})	1.00	1.00
Surface Hydrology Alterations ($V_{surfalt}$)	1.00	1.00
Upland Use (V_{upuse})	0.10	0.10

CALCULATION OF FUNCTIONAL CAPACITY

EXISTING	FCI	FCU	PREDICTED	FCI	FCU
Mod. Groundwater Flow	0.81	2.74	Mod. Groundwater Flow	0.81	2.74
Vel. Reduc. Surf. Water	0.87	2.94	Vel. Reduc. Surf. Water	0.87	2.94
Elemental & Nutr. Cycling	0.48	1.62	Elemental & Nutr. Cycling	0.48	1.62
Retention of Particulates	0.68	2.32	Retention of Particulates	0.68	2.32
Organic Carbon Export	0.75	2.55	Organic Carbon Export	0.75	2.55
Maint. of Plant Comm.	0.62	2.10	Maint. of Plant Comm.	0.62	2.10
Habitat Interspersion	0.53	1.79	Habitat Interspersion	0.53	1.79

FUNCTIONS	CHANGE IN FCU's NUMERICAL	CHANGE IN FCU's PERCENT	MIN EFFECT (Yes or No)	JUSTIFICATION OF MINIMAL EFFECT IF **10 TO 20% LOSS** OF FUNCTION
Mod. Groundwater Flow	0.00	0.0	YES	
Vel. Reduc. Surf. Water	0.00	0.0	YES	
Ret, Conv. Elem. & Cmpd.	0.00	0.0	YES	
Retention of Particulates	0.00	0.0	YES	
Organic Carbon Export	0.00	0.0	YES	
Maint. of Plant Comm.	0.00	0.0	YES	
Habitat Interspersion	0.00	0.0	YES	

Summary Sheet

USER NOTE: **Do not enter any data in this worksheet. All data and calculations are entered for you using previously entered information. If any of this information is incorrect, enter the correct information in the appropriate worksheet.**

Project Name/Location:

85th Street Interchange
Lincoln County, South Dakota
Wetland #28

	Variable	Data entered		Subindex
Vegetation	$V_{GRASSCONT}$	wetland perimeter (feet):	1117.00	0.00
		grassland along perimeter (feet):	0.00	
		percent continuity:	0.00	
	$V_{GRASSWIDTH}$	grassland width (feet) at 12 points:		0.00
		Point 1:	0.00	
		Point 2:	0.00	
		Point 3:	0.00	
		Point 4:	0.00	
		Point 5:	0.00	
		Point 6:	0.00	
		Point 7:	0.00	
		Point 8:	0.00	
		Point 9:	0.00	
		Point 10:	0.00	
		Point 11:	0.00	
		Point 12:	0.00	
		mean width (feet):	0.00	
	$V_{VEGCOMP}$	(see vegetation worksheet for species entered)		0.00
		sum of species:	2.00	
		sum of C values:	0.00	
		mean coefficient of conservatism:	0.00	
		FQI:	0.00	

Soil	$V_{RECHARGE}$	Soil Recharge Potential Subindex:	0.75	0.75
	V_{SED}	**Eastern Prairie Potholes**		1.00
		mean depth to B horizon (inches):		
		Western Prairie Potholes		
		mean depth to B horizon (inches):	12.00	
	V_{SQI}	SQI scores for 4 samples:		0.05
		sample 1:	2.00	
		sample 2:	1.50	
		sample 3:	2.00	
		sample 4:	2.00	
		average SQI score:	1.88	
	V_{SOM}	**Indirect Measurements**		0.33
		Litter Depth for 4 samples:		
		sample 1:	0.00	
		sample 2:	0.00	
		sample 3:	0.00	
		sample 4:	0.00	
		Average Litter Depth (inches):	0.00	
		ADI for 4 samples:		
		Sample 1 hue:	10.00	
		value:	2.00	
		chroma:	1.00	
		ADI:	6.00	
		Sample 2 hue:	10.00	
		value:	2.00	
		chroma:	2.00	
		ADI:	7.00	
		Sample 3 hue:	10.00	
		value:	2.00	
		chroma:	1.00	
		ADI:	6.00	
		Sample 4 hue:	10.00	
		value:	2.00	
		chroma:	1.00	
		ADI:	6.00	
		average ADI:	6.25	
		Direct Measurements		
		% organic carbon for 0-15cm depth:		
		% organic carbon for 15-30cm depth:		
		mean percentage:		
		% organic carbon:	1.77	

Hydrogeomorphic	V_{OUT}	historic invert elevation in relation to wetland maximum depth:	1512.00	1.00
		present (or constructed) invert elevation:	1512.00	
		elevation of the edge of the historic wetland:	1512.50	
		elevation of a representative deepest portion of the wetland:	1511.00	
		if evaluating pit or fill, enter % volume of pit/fill vs. wetland (ex. 25%=25), otherwise enter 0:	0.00	
		ratio of the constructed elevation to the natural outlet elevation:	1.00	
	V_{SUBOUT}	depth of surface drainage invert:		1.00
		distance from WAA edge:		
		location/spacing of subsurface tile within the WAA:		
	V_{SOURCE}	type & effect of surface alteration(s):		1.00
		% of historic catchment area still contributing runoff:		
		additions of water from other sources:		
		change in wetland regime class?		
	V_{EDGE}	wetland perimeter (feet):	1117.00	1.00
		wetland area (acres):	1.00	
		Shoreline Development Index:	1.51	
	$V_{CATCHWET}$	wetland area (acres):	1.00	1.00
		catchment area (acres):	13.77	
		ratio of catchment size to wetland size:	13.77	
Landscape & Landuse	V_{UPUSE}	total acre size of the present day catchment:	13.77	0.52
		acres of catchment for each curve number:		
		98		
		90		
		79	13.77	
		77		
		72		
		75		
		73		
		71		
		72		
		74		
		69		
		79		
		74		
		69		
		61		
		weighted average score for upland land use:	79.00	
	$V_{WETPROX}$	distance to nearest wetland(feet):	51.00	0.75
		distance to 2nd nearest wetland:	512.00	
		distance to 3rd nearest wetland:	538.00	
		distance to 4th nearest wetland:	544.00	
		distance to 5th nearest wetland:	689.00	
		mean distance (feet):	466.80	
	$V_{WETAREA}$	acres of palustrine wetlands within a 1-mile radius:	75.00	0.16
	V_{BASINS}	number of palustrine wetlands within a 1-mile radius:	60.00	0.27
	$V_{HABFRAG}$	miles of roads and linear attributes within a 1-mile radius:	14.00	0.00

Function	FCI	FCU
1. Water Storage	0.94	0.94
2. Groundwater Recharge	0.85	0.85
3. Retain Particlulates	0.58	0.58
4. Remove, Convert, and Sequester Dissolved Substances	0.58	0.58
5. Plant Community Resilience and Carbon Cycling	0.53	0.53
6a. Provide Faunal Habitat	0.63	0.63
6b. Provide Faunal Habitat (Alternate Formula)	0.50	0.50

Summary Sheet

USER NOTE: **Do not enter any data in this worksheet. All data and calculations are entered for you using previously entered information. If any of this information is incorrect, enter the correct information in the appropriate worksheet.**

Project Name/Location:

85th Street Interchange
Lincoln County, South Dakota
Wetland #29

	Variable	Data entered		Subindex
Vegetation	$V_{GRASSCONT}$	wetland perimeter (feet):	1176.00	0.48
		grassland along perimeter (feet):	570.00	
		percent continuity:	48.47	
	$V_{GRASSWIDTH}$	grassland width (feet) at 12 points:		0.04
		Point 1:	5.00	
		Point 2:	5.00	
		Point 3:	0.00	
		Point 4:	0.00	
		Point 5:	0.00	
		Point 6:	0.00	
		Point 7:	0.00	
		Point 8:	0.00	
		Point 9:	0.00	
		Point 10:	5.00	
		Point 11:	5.00	
		Point 12:	5.00	
		mean width (feet):	2.08	
	$V_{VEGCOMP}$	(see vegetation worksheet for species entered)		0.19
		sum of species:	2.00	
		sum of C values:	5.00	
		mean coefficient of conservatism:	2.50	
		FQI:	3.54	

Soil	$V_{RECHARGE}$	Soil Recharge Potential Subindex:	0.75	0.75
	V_{SED}	**Eastern Prairie Potholes**		1.00
		mean depth to B horizon (inches):		
		Western Prairie Potholes		
		mean depth to B horizon (inches):	12.00	
	V_{SQI}	SQI scores for 4 samples:		0.04
		sample 1:	1.50	
		sample 2:	1.50	
		sample 3:	2.00	
		sample 4:	2.00	
		average SQI score:	1.75	
	V_{SOM}	**Indirect Measurements**		0.27
		Litter Depth for 4 samples:		
		sample 1:	0.00	
		sample 2:	0.00	
		sample 3:	0.00	
		sample 4:	0.00	
		Average Litter Depth (inches):	0.00	
		ADI for 4 samples:		
		Sample 1 hue:	10.00	
		value:	2.00	
		chroma:	2.00	
		ADI:	7.00	
		Sample 2 hue:	10.00	
		value:	2.00	
		chroma:	2.00	
		ADI:	7.00	
		Sample 3 hue:	10.00	
		value:	2.00	
		chroma:	2.00	
		ADI:	7.00	
		Sample 4 hue:	10.00	
		value:	2.00	
		chroma:	2.00	
		ADI:	7.00	
		average ADI:	7.00	
		Direct Measurements		
		% organic carbon for 0-15cm depth:		
		% organic carbon for 15-30cm depth:		
		mean percentage:		
		% organic carbon:	1.57	

Hydrogeomorphic	V_{OUT}	historic invert elevation in relation to wetland maximum depth:	1507.00	1.00
		present (or constructed) invert elevation:	1507.00	
		elevation of the edge of the historic wetland:	1515.00	
		elevation of a representative deepest portion of the wetland:	1514.50	
		if evaluating pit or fill, enter % volume of pit/fill vs. wetland (ex. 25%=25), otherwise enter 0:	0.00	
		ratio of the constructed elevation to the natural outlet elevation:	1.00	
	V_{SUBOUT}	depth of surface drainage invert:		1.00
		distance from WAA edge:		
		location/spacing of subsurface tile within the WAA:		
	V_{SOURCE}	type & effect of surface alteration(s):		1.00
		% of historic catchment area still contributing runoff:		
		additions of water from other sources:		
		change in wetland regime class?		
	V_{EDGE}	wetland perimeter (feet):	1176.00	0.30
		wetland area (acres):	2.13	
		Shoreline Development Index:	1.09	
	$V_{CATCHWET}$	wetland area (acres):	2.13	0.36
		catchment area (acres):	5.86	
		ratio of catchment size to wetland size:	2.75	
Landscape & Landuse	V_{UPUSE}	total acre size of the present day catchment:	5.86	0.54
		acres of catchment for each curve number:		
		98		
		90		
		79	4.86	
		77		
		72		
		75		
		73		
		71		
		72		
		74	1.00	
		69		
		79		
		74		
		69		
		61		
		weighted average score for upland land use:	78.15	
	$V_{WETPROX}$	distance to nearest wetland(feet):	44.00	0.49
		distance to 2nd nearest wetland:	561.00	
		distance to 3rd nearest wetland:	645.00	
		distance to 4th nearest wetland:	1040.00	
		distance to 5th nearest wetland:	1171.00	
		mean distance (feet):	692.20	
	$V_{WETAREA}$	acres of palustrine wetlands within a 1-mile radius:	75.00	0.16
	V_{BASINS}	number of palustrine wetlands within a 1-mile radius:	60.00	0.27
	$V_{HABFRAG}$	miles of roads and linear attributes within a 1-mile radius:	15.00	0.00

Function	FCI	FCU
1. Water Storage	0.94	2.00
2. Groundwater Recharge	0.70	1.50
3. Retain Particlulates	0.69	1.47
4. Remove, Convert, and Sequester Dissolved Substances	0.67	1.42
5. Plant Community Resilience and Carbon Cycling	0.63	1.33
6a. Provide Faunal Habitat	0.65	1.39
6b. Provide Faunal Habitat (Alternate Formula)	0.56	1.20

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Variable Score Field Form

Field Office -		WAA Id. ----------	Wetland 35			Reference Site? (Y/N)	
County ------	Lincoln	Wetland Acres (pre-) ---	25.9	Wetland type (NWI)		PEM1C	
Date ---------	11/13/2018	Wetland Acres (post-) --	25.9	Wetland type (FSA)			
Owner/Op. --	85th St BDJVG	Planned Activity ---------					
Yellow Flag?		If yes, what?				Observers	
Red Flag? --		If yes, what?				Rebecca Beduhn	

Variable	Measurement or Condition Result				Rationale for Post-Project Changes	Variable Score	
						Existing	Projected
$V_{detritus}$	Detritus thickness (in.), pre-project ----------			0		0.25	0.25
V_{sed}	Sediment thickness (in.) in wetland, pre-project -----			0		1.00	1.00
	Other observations						
V_{som}	Dominant texture in upper 18" ----------			SiCL		1.00	1.00
	Color in upper 12": Value ---	2	Chroma -	1			
V_{pore}	Pores		SQI	2		0.75	0.75
	Structure		SQI	2			
	Rupture Resistance		SQI	2			
	Summary SQI Rating ----------			6			
V_{buffer}			Pre-	Post-		0.17	0.17
	Buffer continuity (%) ----------		70	70			
	Width of perm. veg. buffer (ft.) ----------		30.8	30.8			
	Continuity/Width Rating (B_1) ----------		0.3	0.3			
	Buffer condition ----------		⬇	⬇			
	Perm. veg. part ---		0	0			
	Tilled part ----------		None	None			
	Buffer Condition Rating (B_2) ----------		0.1	0.1			
V_{pratio}	Native species present in wetland (% of dominants) --			0		1.00	1.00
V_{pcover}			Pre-	Post-		1.00	1.00
	Percent of wetland area intact ----------		100	100			
	% ground cover - 100	Rating -	1	1			
	Percent of wetland area tilled ----------		0				
	% ground cover - 0	Rating -	1	1			
V_{micro}	Is the wetland area intact or disturbed?		Intact			1.00	1.00
	Describe variability on wetland surface (hummocks, meanders)						
V_{source}	Watershed source alterations (Y/N)?		Y			0.10	0.10
	If Y, what?	Roads, Development					
	Percent of area affected ----------		80				
V_{subalt}	Alteration present? N	Type -----				1.00	1.00
$V_{surfalt}$	Alteration present? Y	Type -----	Dam, culvert			0.10	0.10
V_{upuse}	Dominant use of upland (3 maximum)		% of area	Index		0.02	0.02
	Urban development, roads		80	0			
	Conventional Tillage Row Crop		20	0.1			

SLOPE MODEL FUNCTIONAL ASSESSMENT WORKSHEET

Version 4.0 (Rev. 6/6/01)

DATE ----------	##########		REMARKS ----------		
WETLAND ID ----------	Wetland 35		ASSESSMENT TYPE ----	Delineation	
OBSERVERS ----------	Rebecca Beduhn		WETLAND TYPE NWI ---	PEM1C	
CONDITIONS ----------			WETLAND TYPE FSA ---		
PROJECT NAME ---------	85th Street Interchange		OWNER/OPERATOR ----	85th St BDJVG	
PLANNED ACTIVITY -----					
YELLOW FLAG ----------		RED FLAG ----------			
WETLAND ACRES E ----	25.9	WETLAND ACRES P ---	25.9		

VARIABLE	SCORE Existing	SCORE Predicted
Detritus ($V_{detritus}$)	0.25	0.25
Sedimentation in the Wetland (V_{sed})	1.00	1.00
Soil Organic Matter (V_{som})	1.00	1.00
Soil Pores (V_{pore})	0.75	0.75
Buffer Condition, Continuity, & Width (V_{buffer})	0.17	0.17
Ratio of Native to Non-Native Species (V_{pratio})	1.00	1.00
Vegetation Density (V_{pcover})	1.00	1.00
Microtopographic Complexity (V_{micro})	1.00	1.00
Source Area of Flow (V_{source})	0.10	0.10
Subsurface Hydrology Alterations (V_{subalt})	1.00	1.00
Surface Hydrology Alterations ($V_{surfalt}$)	0.10	0.10
Upland Use (V_{upuse})	0.02	0.02

CALCULATION OF FUNCTIONAL CAPACITY

EXISTING	FCI	FCU	PREDICTED	FCI	FCU
Mod. Groundwater Flow	0.68	17.71	Mod. Groundwater Flow	0.68	17.71
Vel. Reduc. Surf. Water	0.61	15.69	Vel. Reduc. Surf. Water	0.61	15.69
Elemental & Nutr. Cycling	0.41	10.73	Elemental & Nutr. Cycling	0.41	10.73
Retention of Particulates	0.70	18.10	Retention of Particulates	0.70	18.10
Organic Carbon Export	0.74	19.10	Organic Carbon Export	0.74	19.10
Maint. of Plant Comm.	0.82	21.15	Maint. of Plant Comm.	0.82	21.15
Habitat Interspersion	0.44	11.29	Habitat Interspersion	0.44	11.29

FUNCTIONS	CHANGE IN FCU's NUMERICAL	CHANGE IN FCU's PERCENT	MIN EFFECT (Yes or No)	JUSTIFICATION OF MINIMAL EFFECT IF **10 TO 20% LOSS** OF FUNCTION
Mod. Groundwater Flow	0.00	0.0	YES	
Vel. Reduc. Surf. Water	0.00	0.0	YES	
Ret, Conv. Elem. & Cmpd.	0.00	0.0	YES	
Retention of Particulates	0.00	0.0	YES	
Organic Carbon Export	0.00	0.0	YES	
Maint. of Plant Comm.	0.00	0.0	YES	
Habitat Interspersion	0.00	0.0	YES	

South Dakota Slope HGM Model, Version 4.0

Variable Score Field Form

Field Office -		WAA Id. ----------	Wetland 38		Reference Site? (Y/N)
County ------	Lincoln	Wetland Acres (pre-) ---	0.03	Wetland type (NWI)	PEM1B
Date ---------	11/13/2018	Wetland Acres (post-) --	0.03	Wetland type (FSA)	
Owner/Op. --	85th St BDJVG	Planned Activity ---------			
Yellow Flag?		If yes, what?			Observe
Red Flag? --		If yes, what?			Rebecca

Variable	Measurement or Condition Result				Rationale for Post-Project Changes	Variable Existing
$V_{detritus}$	Detritus thickness (in.), pre-project ----------			0		0.25
V_{sed}	Sediment thickness (in.) in wetland, pre-project -----			0		1.00
	Other observations					
V_{som}	Dominant texture in upper 18" ----------			SiCL		1.00
	Color in upper 12": Value ---	2	Chroma -	1		
V_{pore}	Pores		SQI	2		0.75
	Structure		SQI	2		
	Rupture Resistance		SQI	2		
	Summary SQI Rating ----------			6		
V_{buffer}			Pre-	Post-		0.45
	Buffer continuity (%) ----------		100	100		
	Width of perm. veg. buffer (ft.) ----------		48	48		
	Continuity/Width Rating (B_1) ----------		0.4	0.4		
	Buffer condition ----------		⬇	⬇		
	Perm. veg. part ---		0	0		
	Tilled part ----------		None	None		
	Buffer Condition Rating (B_2) ----------		0.5	0.5		
V_{pratio}	Native species present in wetland (% of dominants) --			0		0.10
V_{pcover}			Pre-	Post-		1.00
	Percent of wetland area intact ----------		100	100		
	% ground cover - 100	Rating -	1	1		
	Percent of wetland area tilled ----------		0	0		
	% ground cover - 0	Rating -	1	1		
V_{micro}	Is the wetland area intact or disturbed?		Disturbed			0.10
	Describe variability on wetland surface (hummocks, meanders)					
	Roadside ditch					
V_{source}	Watershed source alterations (Y/N)?		Y			0.10
	If Y, what?	Roads				
	Percent of area affected ----------		50			
V_{subalt}	Alteration present? Y	Type -----	Culvert			0.25
$V_{surfalt}$	Alteration present? N	Type -----				1.00
V_{upuse}	Dominant use of upland (3 maximum)		% of area	Index		0.10
	Farmstead		100	0.1		

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Projected
0.25
1.00
1.00
0.75
0.45
0.10
1.00
0.10
0.10
0.25
1.00
0.10

SLOPE MODEL FUNCTIONAL ASSESSMENT WORKSHEET

Version 4.0 (Rev. 6/6/01)

DATE ----------	##########	REMARKS ----------			
WETLAND ID ----------	Wetland 38	ASSESSMENT TYPE ----		Delineation	
OBSERVERS ----------	Rebecca Beduhn	WETLAND TYPE NWI ---		PEM1B	
CONDITIONS ----------		WETLAND TYPE FSA ---			
PROJECT NAME ---------	85th Street Interchange	OWNER/OPERATOR ----		85th St BDJVG	
PLANNED ACTIVITY -----					
YELLOW FLAG ----------		RED FLAG ----------			
WETLAND ACRES E ----	0.0	WETLAND ACRES P ---	0.0		

VARIABLE	SCORE Existing	SCORE Predicted
Detritus ($V_{detritus}$)	0.25	0.25
Sedimentation in the Wetland (V_{sed})	1.00	1.00
Soil Organic Matter (V_{som})	1.00	1.00
Soil Pores (V_{pore})	0.75	0.75
Buffer Condition, Continuity, & Width (V_{buffer})	0.45	0.45
Ratio of Native to Non-Native Species (V_{pratio})	0.10	0.10
Vegetation Density (V_{pcover})	1.00	1.00
Microtopographic Complexity (V_{micro})	0.10	0.10
Source Area of Flow (V_{source})	0.10	0.10
Subsurface Hydrology Alterations (V_{subalt})	0.25	0.25
Surface Hydrology Alterations ($V_{surfalt}$)	1.00	1.00
Upland Use (V_{upuse})	0.10	0.10

CALCULATION OF FUNCTIONAL CAPACITY

EXISTING	FCI	FCU	PREDICTED	FCI	FCU
Mod. Groundwater Flow	0.35	0.01	Mod. Groundwater Flow	0.35	0.01
Vel. Reduc. Surf. Water	0.63	0.02	Vel. Reduc. Surf. Water	0.63	0.02
Elemental & Nutr. Cycling	0.49	0.01	Elemental & Nutr. Cycling	0.49	0.01
Retention of Particulates	0.76	0.02	Retention of Particulates	0.76	0.02
Organic Carbon Export	0.68	0.02	Organic Carbon Export	0.68	0.02
Maint. of Plant Comm.	0.53	0.02	Maint. of Plant Comm.	0.53	0.02
Habitat Interspersion	0.54	0.02	Habitat Interspersion	0.54	0.02

FUNCTIONS	CHANGE IN FCU's NUMERICAL	CHANGE IN FCU's PERCENT	MIN EFFECT (Yes or No)	JUSTIFICATION OF MINIMAL EFFECT IF **10 TO 20% LOSS** OF FUNCTION
Mod. Groundwater Flow	0.00	0.0	YES	
Vel. Reduc. Surf. Water	0.00	0.0	YES	
Ret, Conv. Elem. & Cmpd.	0.00	0.0	YES	
Retention of Particulates	0.00	0.0	YES	
Organic Carbon Export	0.00	0.0	YES	
Maint. of Plant Comm.	0.00	0.0	YES	
Habitat Interspersion	0.00	0.0	YES	

South Dakota Slope HGM Model, Version 4.0

Rev. 6/6/01

Variable Score Field Form

Field Office -		WAA Id. ----------	Wetland 39			Reference Site? (Y/N)	
County ------	Lincoln	Wetland Acres (pre-) ---	0.02	Wetland type (NWI)		PEM1C	
Date ---------	11/13/2018	Wetland Acres (post-) --	0.02	Wetland type (FSA)			
Owner/Op. --	85th St BDJVG	Planned Activity ---------					
Yellow Flag?		If yes, what?				Observers	
Red Flag? --		If yes, what?				Rebecca Beduhn	

Variable	Measurement or Condition Result				Rationale for Post-Project Changes	Variable Score	
						Existing	Projected
$V_{detritus}$	Detritus thickness (in.), pre-project ----------			0		0.25	0.25
V_{sed}	Sediment thickness (in.) in wetland, pre-project -----			0		1.00	1.00
	Other observations						
V_{som}	Dominant texture in upper 18" ----------			SiCL		1.00	1.00
	Color in upper 12": Value ---	2	Chroma -	1			
V_{pore}	Pores		SQI	2		0.75	0.75
	Structure		SQI	2			
	Rupture Resistance		SQI	2			
	Summary SQI Rating ----------			6			
V_{buffer}			Pre-	Post-		0.32	0.32
	Buffer continuity (%) ----------		100	100			
	Width of perm. veg. buffer (ft.) ----------		16	16			
	Continuity/Width Rating (B_1) ----------		0.2	0.2			
	Buffer condition ----------		⬇	⬇			
	Perm. veg. part ---		0	0			
	Tilled part ----------		None	None			
	Buffer Condition Rating (B_2) ----------		0.5	0.5			
V_{pratio}	Native species present in wetland (% of dominants) --			0		0.10	0.10
V_{pcover}			Pre-	Post-		1.00	1.00
	Percent of wetland area intact ----------		100	100			
	% ground cover - 100	Rating -	1	1			
	Percent of wetland area tilled ----------		0	0			
	% ground cover - 0	Rating -	1	1			
V_{micro}	Is the wetland area intact or disturbed?		Disturbed			0.10	0.10
	Describe variability on wetland surface (hummocks, meanders)						
	Roadside ditch						
V_{source}	Watershed source alterations (Y/N)?		Y			0.10	0.10
	If Y, what? road						
	Percent of area affected ----------		50				
V_{subalt}	Alteration present? Y	Type -----	culvert			0.25	0.25
$V_{surfalt}$	Alteration present? N	Type -----				1.00	1.00
V_{upuse}	Dominant use of upland (3 maximum)		% of area	Index		0.10	0.10
	Farmstead		100	0.1			

SLOPE MODEL FUNCTIONAL ASSESSMENT WORKSHEET

Version 4.0 (Rev. 6/6/01)

DATE ----------	##########	REMARKS ----------			
WETLAND ID ----------	Wetland 39	ASSESSMENT TYPE ----		Delineation	
OBSERVERS ----------	Rebecca Beduhn	WETLAND TYPE NWI ---		PEM1C	
CONDITIONS ----------		WETLAND TYPE FSA ---			
PROJECT NAME ---------	85th Street Interchange	OWNER/OPERATOR ----		85th St BDJVG	
PLANNED ACTIVITY -----					
YELLOW FLAG ----------		RED FLAG ----------			
WETLAND ACRES E ----	0.0	WETLAND ACRES P ---	0.0		

VARIABLE	SCORE Existing	SCORE Predicted
Detritus ($V_{detritus}$)	0.25	0.25
Sedimentation in the Wetland (V_{sed})	1.00	1.00
Soil Organic Matter (V_{som})	1.00	1.00
Soil Pores (V_{pore})	0.75	0.75
Buffer Condition, Continuity, & Width (V_{buffer})	0.32	0.32
Ratio of Native to Non-Native Species (V_{pratio})	0.10	0.10
Vegetation Density (V_{pcover})	1.00	1.00
Microtopographic Complexity (V_{micro})	0.10	0.10
Source Area of Flow (V_{source})	0.10	0.10
Subsurface Hydrology Alterations (V_{subalt})	0.25	0.25
Surface Hydrology Alterations ($V_{surfalt}$)	1.00	1.00
Upland Use (V_{upuse})	0.10	0.10

CALCULATION OF FUNCTIONAL CAPACITY

EXISTING	FCI	FCU	PREDICTED	FCI	FCU
Mod. Groundwater Flow	0.35	0.01	Mod. Groundwater Flow	0.35	0.01
Vel. Reduc. Surf. Water	0.62	0.01	Vel. Reduc. Surf. Water	0.62	0.01
Elemental & Nutr. Cycling	0.49	0.01	Elemental & Nutr. Cycling	0.49	0.01
Retention of Particulates	0.74	0.01	Retention of Particulates	0.74	0.01
Organic Carbon Export	0.68	0.01	Organic Carbon Export	0.68	0.01
Maint. of Plant Comm.	0.53	0.01	Maint. of Plant Comm.	0.53	0.01
Habitat Interspersion	0.51	0.01	Habitat Interspersion	0.51	0.01

FUNCTIONS	CHANGE IN FCU's NUMERICAL	CHANGE IN FCU's PERCENT	MIN EFFECT (Yes or No)	JUSTIFICATION OF MINIMAL EFFECT IF **10 TO 20% LOSS** OF FUNCTION
Mod. Groundwater Flow	0.00	0.0	YES	
Vel. Reduc. Surf. Water	0.00	0.0	YES	
Ret, Conv. Elem. & Cmpd.	0.00	0.0	YES	
Retention of Particulates	0.00	0.0	YES	
Organic Carbon Export	0.00	0.0	YES	
Maint. of Plant Comm.	0.00	0.0	YES	
Habitat Interspersion	0.00	0.0	YES	

South Dakota Slope HGM Model, Version 4.0

Rev. 6/6/01

Variable Score Field Form

Field Office -		WAA Id. ----------	Wetland 40			Reference Site? (Y/N)	
County ------	Lincoln	Wetland Acres (pre-) ---	0.2	Wetland type (NWI)		PEM1B	
Date ---------	11/13/2018	Wetland Acres (post-) --	0.2	Wetland type (FSA)			
Owner/Op. --	85th St BDJVG	Planned Activity ---------					
Yellow Flag?		If yes, what?				Observers	
Red Flag? --		If yes, what?				Rebecca Beduhn	

Variable	Measurement or Condition Result				Rationale for Post-Project Changes	Variable Score	
						Existing	Projected
$V_{detritus}$	Detritus thickness (in.), pre-project ----------			0		0.25	0.25
V_{sed}	Sediment thickness (in.) in wetland, pre-project -----			0		1.00	1.00
	Other observations						
V_{som}	Dominant texture in upper 18" ----------			SiCL		1.00	1.00
	Color in upper 12": Value ---	2	Chroma -	1			
V_{pore}	Pores		SQI	2		0.75	0.75
	Structure		SQI	2			
	Rupture Resistance		SQI	2			
	Summary SQI Rating ----------			6			
V_{buffer}			Pre-	Post-		0.40	0.40
	Buffer continuity (%) ----------		100	100			
	Width of perm. veg. buffer (ft.) ----------		38	38			
	Continuity/Width Rating (B_1) ----------		0.4	0.4			
	Buffer condition ----------		⬇	⬇			
	Perm. veg. part ---		0	0			
	Tilled part ----------		None	None			
	Buffer Condition Rating (B_2) ----------		0.4	0.4			
V_{pratio}	Native species present in wetland (% of dominants) --			0		0.10	0.10
V_{pcover}			Pre-	Post-		1.00	1.00
	Percent of wetland area intact ----------		100	100			
	% ground cover - 100	Rating -	1	1			
	Percent of wetland area tilled ----------		0	0			
	% ground cover - 0	Rating -	1	1			
V_{micro}	Is the wetland area intact or disturbed?		Y			0.25	0.25
	Describe variability on wetland surface (hummocks, meanders)						
	roadside ditch						
V_{source}	Watershed source alterations (Y/N)?		Y			0.10	0.10
	If Y, what?	road					
	Percent of area affected ----------		50				
V_{subalt}	Alteration present? Y	Type -----	culvert			0.25	0.25
$V_{surfalt}$	Alteration present? N	Type -----				1.00	1.00
V_{upuse}	Dominant use of upland (3 maximum)		% of area	Index		0.10	0.10
	Farmstead		100	0.1			

SLOPE MODEL FUNCTIONAL ASSESSMENT WORKSHEET

Version 4.0 (Rev. 6/6/01)

DATE ----------	##########		REMARKS ----------		
WETLAND ID ----------	Wetland 40		ASSESSMENT TYPE ----	Delineation	
OBSERVERS ----------	Rebecca Beduhn		WETLAND TYPE NWI ---	PEM1B	
CONDITIONS ----------			WETLAND TYPE FSA ---		
PROJECT NAME ---------	85th Street Interchange		OWNER/OPERATOR ----	85th St BDJVG	
PLANNED ACTIVITY -----					
YELLOW FLAG ----------		RED FLAG ----------			
WETLAND ACRES E ----	0.2	WETLAND ACRES P ---	0.2		

VARIABLE	SCORE Existing	SCORE Predicted
Detritus ($V_{detritus}$)	0.25	0.25
Sedimentation in the Wetland (V_{sed})	1.00	1.00
Soil Organic Matter (V_{som})	1.00	1.00
Soil Pores (V_{pore})	0.75	0.75
Buffer Condition, Continuity, & Width (V_{buffer})	0.40	0.40
Ratio of Native to Non-Native Species (V_{pratio})	0.10	0.10
Vegetation Density (V_{pcover})	1.00	1.00
Microtopographic Complexity (V_{micro})	0.25	0.25
Source Area of Flow (V_{source})	0.10	0.10
Subsurface Hydrology Alterations (V_{subalt})	0.25	0.25
Surface Hydrology Alterations ($V_{surfalt}$)	1.00	1.00
Upland Use (V_{upuse})	0.10	0.10

CALCULATION OF FUNCTIONAL CAPACITY

EXISTING	FCI	FCU	PREDICTED	FCI	FCU
Mod. Groundwater Flow	0.35	0.06	Mod. Groundwater Flow	0.35	0.06
Vel. Reduc. Surf. Water	0.66	0.11	Vel. Reduc. Surf. Water	0.66	0.11
Elemental & Nutr. Cycling	0.49	0.08	Elemental & Nutr. Cycling	0.49	0.08
Retention of Particulates	0.75	0.13	Retention of Particulates	0.75	0.13
Organic Carbon Export	0.69	0.12	Organic Carbon Export	0.69	0.12
Maint. of Plant Comm.	0.53	0.09	Maint. of Plant Comm.	0.53	0.09
Habitat Interspersion	0.53	0.09	Habitat Interspersion	0.53	0.09

FUNCTIONS	CHANGE IN FCU's NUMERICAL	CHANGE IN FCU's PERCENT	MIN EFFECT (Yes or No)	JUSTIFICATION OF MINIMAL EFFECT IF **10 TO 20% LOSS** OF FUNCTION
Mod. Groundwater Flow	0.00	0.0	YES	
Vel. Reduc. Surf. Water	0.00	0.0	YES	
Ret, Conv. Elem. & Cmpd.	0.00	0.0	YES	
Retention of Particulates	0.00	0.0	YES	
Organic Carbon Export	0.00	0.0	YES	
Maint. of Plant Comm.	0.00	0.0	YES	
Habitat Interspersion	0.00	0.0	YES	

South Dakota Slope HGM Model, Version 4.0

Rev. 6/6/01

Variable Score Field Form

Field Office -		WAA Id. ----------	Wetland 41		Reference Site? (Y/N)	
County ------	Lincoln	Wetland Acres (pre-) ---	0.2	Wetland type (NWI)	PEM1B	
Date ---------	11/13/2018	Wetland Acres (post-) --	0.2	Wetland type (FSA)		
Owner/Op. --	85th St BDJVG	Planned Activity ---------				
Yellow Flag?		If yes, what?			Observers	
Red Flag? --		If yes, what?			Rebecca Beduhn	

Variable	Measurement or Condition Result				Rationale for Post-Project Changes	Variable Score Existing	Variable Score Projected
$V_{detritus}$	Detritus thickness (in.), pre-project ----------			0		0.25	0.25
V_{sed}	Sediment thickness (in.) in wetland, pre-project -----			0		1.00	1.00
	Other observations						
V_{som}	Dominant texture in upper 18" ----------			SiCL		0.75	0.75
	Color in upper 12": Value ---	2	Chroma -	2			
V_{pore}	Pores		SQI	2		0.75	0.75
	Structure		SQI	2			
	Rupture Resistance		SQI	2			
	Summary SQI Rating ----------			6			
V_{buffer}			Pre-	Post-		0.32	0.32
	Buffer continuity (%) ----------		83	83			
	Width of perm. veg. buffer (ft.) ----------		13	13			
	Continuity/Width Rating (B_1) ----------		0.2	0.2			
	Buffer condition ----------		⬇	⬇			
	Perm. veg. part ---		100	100			
	Tilled part ----------		None	None			
	Buffer Condition Rating (B_2) ----------		0.5	0.5			
V_{pratio}	Native species present in wetland (% of dominants) --			0		0.10	0.10
V_{pcover}			Pre-	Post-		1.00	1.00
	Percent of wetland area intact ----------		100	100			
	% ground cover - 100	Rating -	1	1			
	Percent of wetland area tilled ----------		0	0			
	% ground cover - 0	Rating -	1	1			
V_{micro}	Is the wetland area intact or disturbed?		Disturbed			0.25	0.25
	Describe variability on wetland surface (hummocks, meanders)						
	roadside ditch						
V_{source}	Watershed source alterations (Y/N)?		Y			0.10	0.10
	If Y, what?	Road					
	Percent of area affected ----------		50				
V_{subalt}	Alteration present? Y	Type -----	Culvert			0.25	0.25
$V_{surfalt}$	Alteration present? N	Type -----				0.25	0.25
V_{upuse}	Dominant use of upland (3 maximum)		% of area	Index		0.10	0.10
	Conventional Tillage Row Crop		22	0.1			
	Farmstead		78	0.1			

SLOPE MODEL FUNCTIONAL ASSESSMENT WORKSHEET

Version 4.0 (Rev. 6/6/01)

DATE ----------	##########	REMARKS ----------			
WETLAND ID ----------	Wetland 41	ASSESSMENT TYPE ----		Delineation	
OBSERVERS ----------	Rebecca Beduhn	WETLAND TYPE NWI ---		PEM1B	
CONDITIONS ----------		WETLAND TYPE FSA ---			
PROJECT NAME ---------	85th Street Interchange	OWNER/OPERATOR ----		85th St BDJVG	
PLANNED ACTIVITY -----					
YELLOW FLAG ----------		RED FLAG ----------			
WETLAND ACRES E ----	0.2	WETLAND ACRES P ---	0.2		

VARIABLE	SCORE Existing	SCORE Predicted
Detritus ($V_{detritus}$)	0.25	0.25
Sedimentation in the Wetland (V_{sed})	1.00	1.00
Soil Organic Matter (V_{som})	0.75	0.75
Soil Pores (V_{pore})	0.75	0.75
Buffer Condition, Continuity, & Width (V_{buffer})	0.32	0.32
Ratio of Native to Non-Native Species (V_{pratio})	0.10	0.10
Vegetation Density (V_{pcover})	1.00	1.00
Microtopographic Complexity (V_{micro})	0.25	0.25
Source Area of Flow (V_{source})	0.10	0.10
Subsurface Hydrology Alterations (V_{subalt})	0.25	0.25
Surface Hydrology Alterations ($V_{surfalt}$)	0.25	0.25
Upland Use (V_{upuse})	0.10	0.10

CALCULATION OF FUNCTIONAL CAPACITY

EXISTING	FCI	FCU	PREDICTED	FCI	FCU
Mod. Groundwater Flow	0.35	0.06	Mod. Groundwater Flow	0.35	0.06
Vel. Reduc. Surf. Water	0.47	0.08	Vel. Reduc. Surf. Water	0.47	0.08
Elemental & Nutr. Cycling	0.39	0.07	Elemental & Nutr. Cycling	0.39	0.07
Retention of Particulates	0.74	0.13	Retention of Particulates	0.74	0.13
Organic Carbon Export	0.56	0.10	Organic Carbon Export	0.56	0.10
Maint. of Plant Comm.	0.45	0.08	Maint. of Plant Comm.	0.45	0.08
Habitat Interspersion	0.42	0.07	Habitat Interspersion	0.42	0.07

FUNCTIONS	CHANGE IN FCU's NUMERICAL	CHANGE IN FCU's PERCENT	MIN EFFECT (Yes or No)	JUSTIFICATION OF MINIMAL EFFECT IF **10 TO 20% LOSS** OF FUNCTION
Mod. Groundwater Flow	0.00	0.0	YES	
Vel. Reduc. Surf. Water	0.00	0.0	YES	
Ret, Conv. Elem. & Cmpd.	0.00	0.0	YES	
Retention of Particulates	0.00	0.0	YES	
Organic Carbon Export	0.00	0.0	YES	
Maint. of Plant Comm.	0.00	0.0	YES	
Habitat Interspersion	0.00	0.0	YES	

South Dakota Slope HGM Model, Version 4.0

Rev. 6/6/01

Variable Score Field Form

Field Office -		WAA Id. ----------	Wetland 42			Reference Site? (Y/N)	
County ------	Lincoln	Wetland Acres (pre-) ---	0.1	Wetland type (NWI)		PEM1B	
Date ---------	11/13/2018	Wetland Acres (post-) --	0.1	Wetland type (FSA)			
Owner/Op. --	85th St BDJVG	Planned Activity ---------					
Yellow Flag?		If yes, what?				Observers	
Red Flag? --		If yes, what?				Rebecca Beduhn	

Variable	Measurement or Condition Result				Rationale for Post-Project Changes	Variable Score	
						Existing	Projected
$V_{detritus}$	Detritus thickness (in.), pre-project ----------			0		0.25	0.25
V_{sed}	Sediment thickness (in.) in wetland, pre-project -----			0		1.00	1.00
	Other observations						
V_{som}	Dominant texture in upper 18" ----------			SiCL		1.00	1.00
	Color in upper 12": Value ---	2	Chroma -	1			
V_{pore}	Pores		SQI	2		0.75	0.75
	Structure		SQI	2			
	Rupture Resistance		SQI	2			
	Summary SQI Rating ----------			6			
V_{buffer}			Pre-	Post-		0.22	0.22
	Buffer continuity (%) ----------		100	100			
	Width of perm. veg. buffer (ft.) ----------		7	7			
	Continuity/Width Rating (B_1) ----------		0.1	0.1			
	Buffer condition ----------		⬇	⬇			
	Perm. veg. part ---		0	0			
	Tilled part ----------		None	None			
	Buffer Condition Rating (B_2) ----------		0.5	0.5			
V_{pratio}	Native species present in wetland (% of dominants) --			0		0.10	0.10
V_{pcover}			Pre-	Post-		1.00	1.00
	Percent of wetland area intact ----------		100	100			
	% ground cover - 100	Rating -	1	1			
	Percent of wetland area tilled ----------		0	0			
	% ground cover - 0	Rating -	1	1			
V_{micro}	Is the wetland area intact or disturbed?		Distrubed			0.10	0.10
	Describe variability on wetland surface (hummocks, meanders)						
	Roadside Ditch						
V_{source}	Watershed source alterations (Y/N)?		Y			0.10	0.10
	If Y, what?	Road					
	Percent of area affected ----------		50				
V_{subalt}	Alteration present? Y	Type -----	Culvert			0.25	0.25
$V_{surfalt}$	Alteration present? N	Type -----				1.00	1.00
V_{upuse}	Dominant use of upland (3 maximum)		% of area	Index		0.10	0.10
	Conventional Tillage Row Crop		53	0.1			
	Farmstead		47	0.1			

SLOPE MODEL FUNCTIONAL ASSESSMENT WORKSHEET

Version 4.0 (Rev. 6/6/01)

DATE ----------	##########		REMARKS ----------		
WETLAND ID ----------	Wetland 42		ASSESSMENT TYPE ----	Delineation	
OBSERVERS ----------	Rebecca Beduhn		WETLAND TYPE NWI ---	PEM1B	
CONDITIONS ----------			WETLAND TYPE FSA ---		
PROJECT NAME ---------	85th Street Interchange		OWNER/OPERATOR ----	85th St BDJVG	
PLANNED ACTIVITY -----					
YELLOW FLAG ----------		RED FLAG ----------			
WETLAND ACRES E ----	0.1	WETLAND ACRES P ---	0.1		

VARIABLE	SCORE Existing	SCORE Predicted
Detritus ($V_{detritus}$)	0.25	0.25
Sedimentation in the Wetland (V_{sed})	1.00	1.00
Soil Organic Matter (V_{som})	1.00	1.00
Soil Pores (V_{pore})	0.75	0.75
Buffer Condition, Continuity, & Width (V_{buffer})	0.22	0.22
Ratio of Native to Non-Native Species (V_{pratio})	0.10	0.10
Vegetation Density (V_{pcover})	1.00	1.00
Microtopographic Complexity (V_{micro})	0.10	0.10
Source Area of Flow (V_{source})	0.10	0.10
Subsurface Hydrology Alterations (V_{subalt})	0.25	0.25
Surface Hydrology Alterations ($V_{surfalt}$)	1.00	1.00
Upland Use (V_{upuse})	0.10	0.10

CALCULATION OF FUNCTIONAL CAPACITY

EXISTING	FCI	FCU	PREDICTED	FCI	FCU
Mod. Groundwater Flow	0.35	0.03	Mod. Groundwater Flow	0.35	0.03
Vel. Reduc. Surf. Water	0.61	0.06	Vel. Reduc. Surf. Water	0.61	0.06
Elemental & Nutr. Cycling	0.49	0.04	Elemental & Nutr. Cycling	0.49	0.04
Retention of Particulates	0.72	0.06	Retention of Particulates	0.72	0.06
Organic Carbon Export	0.68	0.06	Organic Carbon Export	0.68	0.06
Maint. of Plant Comm.	0.53	0.05	Maint. of Plant Comm.	0.53	0.05
Habitat Interspersion	0.49	0.04	Habitat Interspersion	0.49	0.04

FUNCTIONS	CHANGE IN FCU's NUMERICAL	CHANGE IN FCU's PERCENT	MIN EFFECT (Yes or No)	JUSTIFICATION OF MINIMAL EFFECT IF **10 TO 20% LOSS** OF FUNCTION
Mod. Groundwater Flow	0.00	0.0	YES	
Vel. Reduc. Surf. Water	0.00	0.0	YES	
Ret, Conv. Elem. & Cmpd.	0.00	0.0	YES	
Retention of Particulates	0.00	0.0	YES	
Organic Carbon Export	0.00	0.0	YES	
Maint. of Plant Comm.	0.00	0.0	YES	
Habitat Interspersion	0.00	0.0	YES	

South Dakota Slope HGM Model, Version 4.0

Rev. 6/6/01

Variable Score Field Form

Field Office -		WAA Id. ----------	Wetland 43			Reference Site? (Y/N)	
County ------	Lincoln	Wetland Acres (pre-) ---	0.1	Wetland type (NWI)		PEM1B	
Date ---------	11/13/2018	Wetland Acres (post-) --	0.1	Wetland type (FSA)			
Owner/Op. --	85th St BDJVG	Planned Activity ---------					
Yellow Flag?		If yes, what?				Observers	
Red Flag? --		If yes, what?				Rebecca Beduhn	

Variable	Measurement or Condition Result				Rationale for Post-Project Changes	Variable Score	
						Existing	Projected
$V_{detritus}$	Detritus thickness (in.), pre-project ----------			0		0.25	0.25
V_{sed}	Sediment thickness (in.) in wetland, pre-project -----			0		1.00	1.00
	Other observations						
V_{som}	Dominant texture in upper 18" ----------			SiCL		1.00	1.00
	Color in upper 12": Value ---	2	Chroma -	1			
V_{pore}	Pores		SQI	2		0.75	0.75
	Structure		SQI	2			
	Rupture Resistance		SQI	2			
	Summary SQI Rating ----------			6			
V_{buffer}			Pre-	Post-		0.32	0.32
	Buffer continuity (%) ----------		100	100			
	Width of perm. veg. buffer (ft.) ----------		25	25			
	Continuity/Width Rating (B_1) ----------		0.2	0.2			
	Buffer condition ----------		⬇	⬇			
	Perm. veg. part ---		0	0			
	Tilled part ----------		None	None			
	Buffer Condition Rating (B_2) ----------		0.5	0.5			
V_{pratio}	Native species present in wetland (% of dominants) --			0		0.10	0.10
V_{pcover}			Pre-	Post-		1.00	1.00
	Percent of wetland area intact ----------		100	100			
	% ground cover - 100	Rating -	1	1			
	Percent of wetland area tilled ----------		0	0			
	% ground cover - 0	Rating -	1	1			
V_{micro}	Is the wetland area intact or disturbed?		Disturbed			0.10	0.10
	Describe variability on wetland surface (hummocks, meanders)						
V_{source}	Watershed source alterations (Y/N)?		Y			0.10	0.10
	If Y, what?	Road					
	Percent of area affected ----------						
V_{subalt}	Alteration present? Y	Type -----	Culvert			0.25	0.25
$V_{surfalt}$	Alteration present? N	Type -----				1.00	1.00
V_{upuse}	Dominant use of upland (3 maximum)		% of area	Index		0.10	0.10
	Farmstead		100	0.1			

SLOPE MODEL FUNCTIONAL ASSESSMENT WORKSHEET

Version 4.0 (Rev. 6/6/01)

DATE ----------	##########	REMARKS ----------			
WETLAND ID ----------	Wetland 43	ASSESSMENT TYPE ----		Delineation	
OBSERVERS ----------	Rebecca Beduhn	WETLAND TYPE NWI ---		PEM1B	
CONDITIONS ----------		WETLAND TYPE FSA ---			
PROJECT NAME ---------	85th Street Interchange	OWNER/OPERATOR ----		85th St BDJVG	
PLANNED ACTIVITY -----					
YELLOW FLAG ----------		RED FLAG ----------			
WETLAND ACRES E ----	0.1	WETLAND ACRES P ---	0.1		

VARIABLE	SCORE Existing	SCORE Predicted
Detritus ($V_{detritus}$)	0.25	0.25
Sedimentation in the Wetland (V_{sed})	1.00	1.00
Soil Organic Matter (V_{som})	1.00	1.00
Soil Pores (V_{pore})	0.75	0.75
Buffer Condition, Continuity, & Width (V_{buffer})	0.32	0.32
Ratio of Native to Non-Native Species (V_{pratio})	0.10	0.10
Vegetation Density (V_{pcover})	1.00	1.00
Microtopographic Complexity (V_{micro})	0.10	0.10
Source Area of Flow (V_{source})	0.10	0.10
Subsurface Hydrology Alterations (V_{subalt})	0.25	0.25
Surface Hydrology Alterations ($V_{surfalt}$)	1.00	1.00
Upland Use (V_{upuse})	0.10	0.10

CALCULATION OF FUNCTIONAL CAPACITY

EXISTING	FCI	FCU	PREDICTED	FCI	FCU
Mod. Groundwater Flow	0.35	0.04	Mod. Groundwater Flow	0.35	0.03
Vel. Reduc. Surf. Water	0.62	0.07	Vel. Reduc. Surf. Water	0.62	0.06
Elemental & Nutr. Cycling	0.49	0.05	Elemental & Nutr. Cycling	0.49	0.05
Retention of Particulates	0.74	0.08	Retention of Particulates	0.74	0.07
Organic Carbon Export	0.68	0.07	Organic Carbon Export	0.68	0.07
Maint. of Plant Comm.	0.53	0.06	Maint. of Plant Comm.	0.53	0.05
Habitat Interspersion	0.51	0.06	Habitat Interspersion	0.51	0.05

FUNCTIONS	CHANGE IN FCU's NUMERICAL	CHANGE IN FCU's PERCENT	MIN EFFECT (Yes or No)	JUSTIFICATION OF MINIMAL EFFECT IF **10 TO 20% LOSS** OF FUNCTION
Mod. Groundwater Flow	0.00	-9.1	YES	
Vel. Reduc. Surf. Water	-0.01	-9.1	YES	
Ret, Conv. Elem. & Cmpd.	0.00	-9.1	YES	
Retention of Particulates	-0.01	-9.1	YES	
Organic Carbon Export	-0.01	-9.1	YES	
Maint. of Plant Comm.	-0.01	-9.1	YES	
Habitat Interspersion	-0.01	-9.1	YES	

Appendix E

Previous Delineations

Path: S:\KO\O\OWNJV149418\3-env-stdy-regs\30-env-doc\90-wetlands\GIS\Previously Delineated By Others.mxd

3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110
PHONE: (651) 490-2000
FAX: (888) 908-8166
TF: (800) 325-2055
www.sehinc.com

Project: OWNJV 149418
Print Date: 3/21/2019

Map by: bnelson
Projection: UTM NAD Zone 14N
Source: SEH ESRI SDDOT, USGS, FWS, NRCS

Previously Delineated Wetlands

85th Street Interchange
Lincoln County, South Dakota

Appendix E

PUBLIC NOTICE

US ARMY CORPS
OF ENGINEERS
OMAHA DISTRICT

APPLICANT: SANFORD HEALTH
APPLICATION NO: NWO-2008-0121-PIE
WATERWAY: UNNAMED WETLANDS
ISSUE DATE: MAY 04, 2018
EXPIRATION DATE: MAY 25, 2018

Regulatory Office, 28563 Powerhouse Rd, Room 118, Pierre, SD 57501
http://www.nwo.usace.army.mil/Missions/RegulatoryProgram/SouthDakota.aspx

21-DAY NOTICE

JOINT NOTICE OF PERMIT PENDING

US ARMY CORPS OF ENGINEERS
AND
SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

The application of Sanford Health for approval of plans and issuance of a permit under authority of the Secretary of the Army is being considered by the District Commander, US Army Engineer District, Omaha, Nebraska. **The project described herein is not being proposed by the Corps, but by the applicant; the Corps will evaluate the proposed work to determine if it is permittable under current laws and regulations.**

Description of Proposed Project: Sanford Health received Corps authorization on July 16, 2008 to construct the Sanford Health Medical Research Center in southwest Sioux Falls, South Dakota. Authorization was granted to grade approximately 10.4 acres of wetlands in order to install water main, sanitary sewer, storm sewer, street lighting, bike/walking trails, asphalt streets with curb and gutter, and landscaping. To date, a majority of the grading has been completed which has impacted 7.87 acres of wetlands, however delays in development occurred and the project has not been completed. The previous Corps authorization expired on September 30, 2017. The applicant now requests authorization to complete the project by constructing a new Sioux Falls Lutheran School on the south side of the property which will impact the remaining 2.53 acres of wetlands. See attached design drawings.

Location: The project is located in Section 18, Township 100 North, Range 50 West, Lincoln County, South Dakota.

Purpose: The purpose of the proposed project is to provide institutional development for the growing population of Sioux Falls.

Mitigation: The proposed project alternative was selected to avoid wetlands to the greatest extent possible. Compensatory mitigation for the originally authorized 10.4 acres of permanent wetland impacts was provided by constructing mitigation wetlands both off-site and on-site. The off-site mitigation was completed in 2014 and the on-site mitigation was completed in 2017. Hydrogeomorphic functional assessment scores were calculated to account for the functional loss of the impacted wetlands. A mitigation ratio of 2 to 1 was used to compensate for the impacts and a total of 39.4 wetland mitigation credits were constructed.

Existing Conditions: The project area is situated in the City of Sioux Falls, SD on the southeast side of the intersections of Interstate Highways 29 and 229 in a patchwork of agricultural and urban sector that is rapidly being enveloped by the expanding City. The adjoining Interstate Highway 29 system runs along the west boundary of the property. Other surrounding land uses include agricultural land parcels that are either currently being developed, or are scheduled for development in the near future. A State Department of Transportation highway maintenance facility is also located adjacent to the site. The landscape consists of gentle sloping prairie (glacial till) divided by ephemeral streams, linear wetlands, and intermittent flowing drainages/tributaries with scattered wetland depressions in the Big Sioux River drainage basin.

The South Dakota Department of Environment and Natural Resources, Division of Environmental Services, 523 East Capitol Avenue, Pierre, South Dakota, 57501-3181, will review the proposed project for state certification in accordance with the provisions of Section 401 of the Clean Water Act. The certification, if issued, will express the State's opinion that the operations undertaken by the applicant will not result in a violation of applicable water quality standards. The South Dakota Department of Environment and Natural Resources hereby incorporates this public notice as its own public notice and procedures by reference (ARSD 74:51:01).

The Omaha District will comply with the National Historic Preservation Act of 1966, as amended. As a result of a cultural resources survey completed in April 2008 and lack of cultural resources found in the project area, this project received a determination of “No Historic Properties Affected”. The State Historic Preservation Officer (SHPO) concurred with this determination on July 1, 2008. We will evaluate additional input by the SHPO and the public in response to this public notice.

In compliance with the Endangered Species Act, a preliminary determination has been made that the described work will not affect species designated as threatened or endangered or adversely affect critical habitat. In order to complete our evaluation of this activity, comments are solicited from the U.S. Fish and Wildlife Service and other interested agencies and individuals.

The decision whether to issue a permit will be based on an evaluation of the probable impacts including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposals must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the activity will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food production, and, in general the needs and welfare of the people. In addition, the evaluation of the impacts of the project on public

interest will include application of the guidelines promulgated by the Administrator, Environmental Protection Agency, under authority of Section 404(b) of the Clean Water Act (40 CFR Part 230).

The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reason for holding a public hearing. The request must be submitted to the US Army Corps of Engineers, South Dakota Regulatory Office, 28563 Powerhouse Road, Room 118, Pierre, South Dakota 57501.

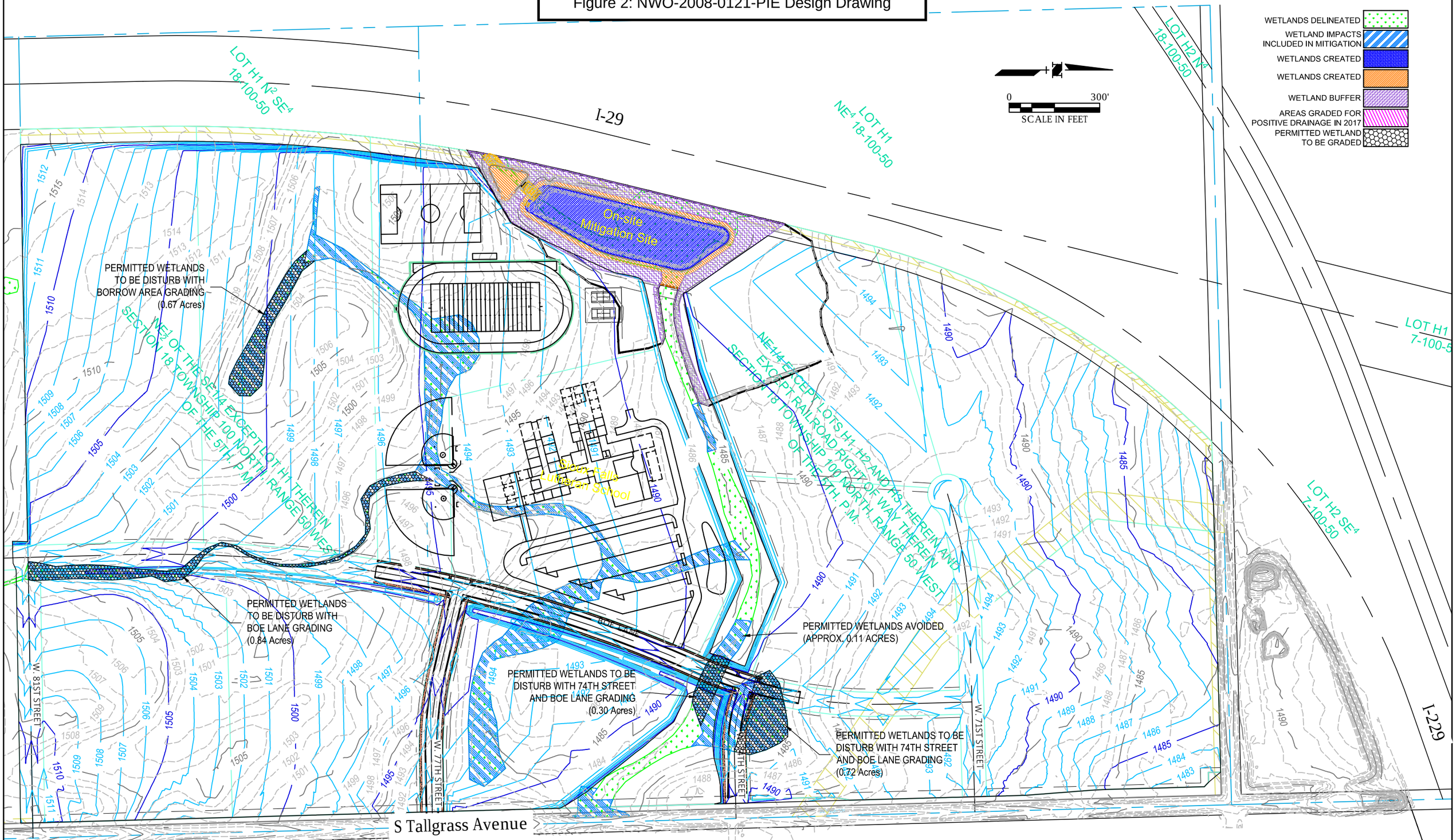
Any interested party (particularly officials of any town, city, county, state, Federal agency, Indian Tribe, or local association whose interests may be affected by the proposed work) is invited to submit to this office, written facts, arguments, or objections on or before May 25, 2018. Any agency or individual having an objection to the proposed work should specifically identify it as an objection with clear and specific reasons. Comments, both favorable and unfavorable, will be accepted, made a part of the record and will receive full consideration in subsequent actions on this permit application. All replies to the public notice should be addressed to the address listed in the previous paragraph. Cathy Juhas, telephone number (605) 224-8531, may be contacted for additional information.

Comments received after the close of the business day on the expiration date of this public notice will not be considered.

This project, if authorized, will be under the provisions of Section 404 of the Clean Water Act.

Drawings showing the location and extent of the work are attached to this notice.

Figure 2: NWO-2008-0121-PIE Design Drawing



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
SOUTH DAKOTA REGULATORY OFFICE
28563 POWERHOUSE ROAD, ROOM 118
PIERRE, SOUTH DAKOTA 57501-6174

REPLY TO
ATTENTION OF

October 4, 2017

South Dakota Regulatory Office
28563 Powerhouse Road, Room 118
Pierre, South Dakota 57501

Sonler Properties
Attn: Jean Brockmueller
100 North Phillips Avenue
Sioux Falls, South Dakota 57104-6725

Dear Ms. Brockmueller:

Reference is made to the information received August 21, 2017, concerning Section 404 of the Clean Water Act permit requirements. The review area is located in the northeast quarter of Section 19, Township 100 North, Range 50 West, Lincoln County, South Dakota.

Based on the information provided, we have determined that there are no waters of the United States (i.e. jurisdictional waters) located within the review area. Therefore, activities within the review area are not subject to Department of the Army regulatory authorities and no permit pursuant to Section 404 of the Clean Water Act is required from the Corps of Engineers.

An approved jurisdictional determination (JD) has been completed for your project. This JD is valid for 5 years from the date of this letter. The JD is enclosed and also may be viewed at our website. The link to the website is shown below. The JD will be available on the website within 30 days. If you are not in agreement with the JD, you may request an administrative appeal under Corps of Engineers regulations found at 33 C.F.R. 331. Enclosed you will find a Notification of Administrative Appeal Options and Process and Request for Appeal form (RFA). Should you decide to submit an RFA form, it must be received by the Corps of Engineers Northwestern Division Office within 60 days from the date of this correspondence (by December 4, 2017). It is not necessary to submit a RFA if you do not object to the JD.

You can obtain additional information about the Regulatory Program from our website:
http://www.nwo.usace.army.mil/Missions/RegulatoryProgram/SouthDakota.aspx

If you have any questions, please feel free to contact this office at the above Regulatory Office address, or telephone Cathy Juhas at (605) 224-8531 and reference action ID NWO-2008-0204-PIE.

Sincerely,

Steven E. Naylor
Regulatory Program Manager,
South Dakota

Enclosures

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): October 2, 2017

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:Omaha District, South Dakota Regulatory Office, Hegg-Sonler Property Jurisdictional Determination, NWO-2008-0204-PIE

C. PROJECT LOCATION AND BACKGROUND INFORMATION:The project area is located south of Sioux Falls and east of Tea, SD in Section 19, Township 100 North, Range 50 West. There are ten wetlands onsite totaling 17.70 acres. The current land uses of this property are agricultural corn field, soybean field, and pasture. Adjacent land use to the south is commercial property. Approved jurisdictional determinations (AJDs) were completed for this site on February 25, 2008 and again on October 22, 2012. The property owners are now requesting an updated AJD.

State:SD County/parish/borough:Lincoln City:Sioux Falls
Center coordinates of site (lat/long in degree decimal format): Lat.43.4740274519393N; Long.-96.7873689857223W
Universal Transverse Mercator:
Name of nearest waterbody: Ninemile Creek (1.5 miles to the west)
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows:
Name of watershed or Hydrologic Unit Code (HUC):10170203

☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☒ Office (Desk) Determination. Date:September 8, 2017
☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are no** *"waters of the U.S."* within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
      ☐ TNWs, including territorial seas
      ☐ Wetlands adjacent to TNWs
      ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
      ☐ Non-RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
      ☐ Impoundments of jurisdictional waters
      ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters: linear feet: width (ft) and/or acres.
      Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Pick List**
      Elevation of established OHWM (if known): .

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

2. **Non-regulated waters/wetlands (check if applicable):**[3]

☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain:The 10 PEM wetlands in question are isolated and completely surrounded by upland. The quarter of land with the wetlands on it is located 1 mile from a potentially jurisdictional unnamed tributary and 3 miles from the Big Sioux River, a Section 10 waters of the US. There is no evidence that any surficial flows leave these isolated wetlands. There is no information available to show that the wetlands 1) are or could be used by interstate or foreign travelers for recreational or other purposes, 2) produce fish or shellfish which are or could be taken and sold in interstate or foreign commerce, or 3) are or could be unsed for industrial pruposes by industries in interstate commerce .

III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**
   Identify TNW: .

   Summarize rationale supporting determination: .

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

   (i) **General Area Conditions:**
   Watershed size: **Pick List**
   Drainage area: **Pick List**
   Average annual rainfall: inches
   Average annual snowfall: inches

   (ii) **Physical Characteristics:**
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.

[3] Supporting documentation is presented in Section III.F.
[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.
Project waters are **Pick List** river miles from RPW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Project waters are **Pick List** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: .

Identify flow route to TNW[5]: .
Tributary stream order, if known: .

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☒ Natural
☐ Artificial (man-made). Explain: .
☒ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: feet
Average depth: feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):
☐ Silts ☐ Sands ☐ Concrete
☐ Cobbles ☐ Gravel ☐ Muck
☐ Bedrock ☐ Vegetation. Type/% cover:
☐ Other. Explain: .

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: .
Presence of run/riffle/pool complexes. Explain: .
Tributary geometry: **Pick List**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **Pick List**
Describe flow regime: .
Other information on duration and volume: .

Surface flow is: **Pick List.** Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):
☐ clear, natural line impressed on the bank ☐ the presence of litter and debris
☐ changes in the character of soil ☐ destruction of terrestrial vegetation
☐ shelving ☐ the presence of wrack line
☐ vegetation matted down, bent, or absent ☐ sediment sorting
☐ leaf litter disturbed or washed away ☐ scour
☐ sediment deposition ☐ multiple observed or predicted flow events
☐ water staining ☐ abrupt change in plant community
☐ other (list):
☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
☒ High Tide Line indicated by: ☒ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects ☐ survey to available datum;
☐ fine shell or debris deposits (foreshore) ☐ physical markings;

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

☐ physical markings/characteristics ☐ vegetation lines/changes in vegetation types.
☐ tidal gauges
☐ other (list):

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: .
Identify specific pollutants, if known: .

(iv) Biological Characteristics. Channel supports (check all that apply):
☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☐ Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:
(a) General Wetland Characteristics:
Properties:
Wetland size: acres
Wetland type. Explain: .
Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is: **Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain: .
☐ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:
Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):
☐ Riparian buffer. Characteristics (type, average width): .
☐ Vegetation type/percent cover. Explain: .
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)
All wetland(s) being considered in the cumulative analysis: **Pick List**

Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet width (ft), Or, acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   - ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

[8]See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

E. **ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):**[10]

- ☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
- ☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
- ☐ which are or could be used for industrial purposes by industries in interstate commerce.
- ☐ Interstate isolated waters. Explain: .
- ☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):

- ☐ Tributary waters: linear feet width (ft).
- ☐ Other non-wetland waters: acres.
  - Identify type(s) of waters: .
- ☐ Wetlands: acres.

F. **NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):**

- ☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- ☒ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
  - ☒ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- ☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
- ☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- ☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- ☐ Lakes/ponds: acres.
- ☐ Other non-wetland waters: acres. List type of aquatic resource: .
- ☒ Wetlands: 17.70 acres.
  - WETLAND A – 1.32 ACRE
  - WETLAND B – 0.17 ACRE
  - WETLAND C – 0.27 ACRE
  - WETLAND D – 4.93 ACRE
  - WETLAND E – 6.99 ACRE
  - WETLAND F – 0.55 ACRE
  - WETLAND G – 2.89 ACRE
  - WETLAND H – 0.33 ACRE
  - WETLAND I – 0.02 ACRE
  - WETLAND J – 0.23 ACRE

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- ☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- ☐ Lakes/ponds: acres.
- ☐ Other non-wetland waters: acres. List type of aquatic resource: .
- ☐ Wetlands: acres.

[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

SECTION IV: DATA SOURCES.

A. **SUPPORTING DATA. Data reviewed for JD (check all that apply** - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

- ☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
- ☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☒ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps: .
- ☐ Corps navigable waters' study: .
- ☐ U.S. Geological Survey Hydrologic Atlas: .
  - ☐ USGS NHD data.
  - ☒ USGS 8 and 12 digit HUC maps.
- ☒ U.S. Geological Survey map(s). Cite scale & quad name:Tea 24K.
- ☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
- ☒ National wetlands inventory map(s). Cite name:Tea.
- ☐ State/Local wetland inventory map(s): .
- ☐ FEMA/FIRM maps: .
- ☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- ☒ Photographs: ☒ Aerial (Name & Date):ORM2 & Google Earth Pro.
  or ☐ Other (Name & Date): .
- ☒ Previous determination(s). File no. and date of response letter:NWO-2008-0204; 25 FEB 2008 & 22 OCT 2012.
- ☐ Applicable/supporting case law: .
- ☐ Applicable/supporting scientific literature: .
- ☐ Other information (please specify): .

B. **ADDITIONAL COMMENTS TO SUPPORT JD:** The 10 isolated wetlands are prairie pothole wetlands that do not have a surface hydrologic connection to any jurisdictional waters of the US nor do they have a significant nexus to a TNW.

WETLAND M
0.02 ACRES
SAMPLE 1
WETLAND B
0.17 ACRES
WETLAND
COMPLEX E
WETLAND C
0.27 ACRES
WETLAND J
WETLAND H
0.33 ACRES
SAMPLE 7

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Sonler Properties	File Number: NWO-2008-0204-PIE	Date: October 4, 2017

Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found in Corps regulations at 33 CFR Part 331, or at http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/FederalRegulation.aspx

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:	If you only have questions regarding the appeal process you may also contact: US Army Corps of Engineers, Northwestern Division Attn: Melinda M. Witgenstein Post Office Box 2870 Portland, OR 97208-2870 Telephone (503) 808-3888 Melinda.M.Witgenstein@usace.army.mil

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

	Date:	Telephone number:
_____ Signature of appellant or agent.		

SONLER PROPERTIES

COPY

August 17, 2017

Steven E. Naylor
Regulatory Program Manager,
South Dakota
Department of the Army
Corps of Engineers, Omaha District
28563 Powerhouse Road, Room 118
Pierre, SD 57501

Re: ID: NOW-2008-204
NE ¼ , Section 19, Township 100 North, Range 50 West, Lincoln County, South Dakota

Dear Mr. Naylor:

On October 23, 2012, you issued a determination letter stating there are no jurisdictional waters of the United States located within the above referenced project site. I have enclosed a copy of that letter for your reference.

It is our understanding the determination is good for a period of five years or until October 23, 2017. A decline in the economy existed for several years and development has not occurred to date. However, the owner (Tallgrass Investments, LLC/Sonler Properties) is working cooperatively with other area landowners, the State of South Dakota and Federal Highway Commission for funding and construction of an Interchange at 85th Street and Interstate 29 to access this property. It is therefore our request that your determination be extended for an additional five years or until October 23, 2022.

Thank you for your consideration and I look forward to hearing from you.

Yours very truly,

Jean Brockmueller

Telephone (605) 335-4950 Fax (605) 335-4961
100 North Phillips Avenue • Ninth Floor • Sioux Falls, South Dakota 57104-6725

Scale 1"=250'

Existing Wetlands Summary		
Wetland ID	**Acres**	**Type**
Wetland A	10.78	Wetland Complex
Wetland B	0.01	Linear
TOTAL	10.79	

SUNDOWNER PROPERTY

JURISDICTIONAL DETERMINATION & WETLAND DELINEATION

EXISTING CONDITIONS

DATE: 10/15/2015
SCALE: 1"=250'
PROJ. NO. 15514
DRAWN BY: TLB
CHECKED BY: KJ
REVISIONS:

EOE
2301 8th Avenue NE
Suite 125
Aberdeen, SD 57401
Phone: (605) 225-3494
Fax: (605) 225-5433
clarkabn@nvc.com
CLARK ENGINEERING

SHEET
WM2
OF 2

X15514

REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
SOUTHDAKOTA REGULATORY OFFICE
28563 POWERHOUSE ROAD, ROOM 118
PIERRE, SOUTH DAKOTA 57501-6174

COPY

December 29, 2015

South Dakota Regulatory Office
28563 Powerhouse Road, Room 118
Pierre, South Dakota 57501

Joel Dykstra
RMB Associates, LLC
Post Office Box 2524
Sioux Falls, South Dakota 57101

Dear Mr. Dykstra:

Reference is made to the information received November 2, 2015, concerning Section 404 of the Clean Water Act permit requirements. We have reviewed your request for a determination of Section 404 CWA jurisdiction. The project site is located in the South ½ of the Southwest ¼ Section 18, Township 100 North, Range 50 West, Lincoln County, South Dakota.

Based on the information provided, we have determined that there are waters of the United States (i.e. jurisdictional waters) located within the area you identified for a jurisdictional determination. Therefore, the proposed activity within this project area is subject to Department of the Army regulatory authorities and a permit pursuant to Section 404 of the Clean Water Act is required from the Corps of Engineers.

An approved jurisdictional determination (JD) has been completed for your project. This JD is valid for 5 years from the date of this letter. The JD is enclosed and also may be viewed at our website. The link to the website is shown below. The JD will be available on the website within 30 days. If you are not in agreement with the JD, you may request an administrative appeal under Corps of Engineers regulations found at 33 C.F.R. 331. Enclosed you will find a Notification of Administrative Appeal Options and Process and Request for Appeal form (RFA). Should you decide to submit a RFA form, it must be received by the Corps of Engineers Northwestern Division Office within 60 days from the date of this correspondence (by February 29, 2016). It is not necessary to submit a RFA if you do not object to the JD.

The Omaha District, Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to complete our Customer Service Survey found on our website at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey. If you do not have Internet access, you may call and request a paper copy of the survey that you can complete and return to us by mail or fax.

You can obtain additional information about the Regulatory Program from our website: http://www.nwo.usace.army.mil/Missions/RegulatoryProgram/SouthDakota.aspx

If you have any questions or need any assistance, please feel free to contact this office at the above Regulatory Office address or telephone Doug Sargent at (605) 224-8531 and reference action ID NWO-2015-2097-PIE.

Sincerely,

Steven E. Naylor
Regulatory Program Manager,
South Dakota

CF:
Karrie Johnson
Clark Engineering
Convention Center Plaza
1410 West Russell Street
Sioux Falls, South Dakota 57104

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): Final 12/29/2015

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Omaha, JD request for Sundowner Property Project, Lincoln County, NWO-2015-2097-PIE.

C. PROJECT LOCATION AND BACKGROUND INFORMATION: South 1/2 of the Southwest 1/4, Section 18, T100N, 50W. The review area consists of 80 acres of residential and agricultural land (see Figure 1). Two (2), wetlands have been delineated within the review area. Wetland A is jurisdictional and Wetland B is non-jurisdictional, (see Figures 3 and 4).

State: **SD** County/parish/borough: **Lincoln** City: **Tea**

Center coordinates of site (lat/long in degree decimal format): Lat. 43.47802N; Long. -96.80197W

Universal Transverse Mercator: **14**

Name of nearest waterbody: Ninemile Creek

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Big Sioux River**

Name of watershed or Hydrologic Unit Code (HUC): **10170203**

☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☒ Office (Desk) Determination. Date: **12/21/15**

☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

☐ Waters subject to the ebb and flow of the tide.

☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
      - ☐ TNWs, including territorial seas
      - ☐ Wetlands adjacent to TNWs
      - ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
      - ☒ Non-RPWs that flow directly or indirectly into TNWs
      - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
      - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
      - ☒ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
      - ☐ Impoundments of jurisdictional waters
      - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters: linear feet: width (ft) and/or acres.
      Wetlands: **10.78** acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**
      Elevation of established OHWM (if known): .

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.

[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

2. **Non-regulated waters/wetlands (check if applicable):**[3]

☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional

Explain: **Wetland B (0.01 ac.) has been determined to be non-jurisdictional, refer to Figure 3. This wetland does not exhibit a discernable hydrological outlet to (or interaction with) any WOUS. In addition, this water is an intrastate, non-navigable water body with no nexus to interstate commerce .**

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**
   Identify TNW: .

   Summarize rationale supporting determination: .

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

   (i) **General Area Conditions:**
   Watershed size: **3,309 square miles**
   Drainage area: **11.54 square miles**
   Average annual rainfall: **23.8** inches
   Average annual snowfall: **38.2** inches

   (ii) **Physical Characteristics:**
   (a) Relationship with TNW:
   ☒ Tributary flows directly into TNW.
   ☐ Tributary flows through **Pick List** tributaries before entering TNW.

[3] Supporting documentation is presented in Section III.F.
[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Project waters are **2-5** river miles from TNW.
Project waters are **Pick List** river miles from RPW.
Project waters are **2-5** aerial (straight) miles from TNW.
Project waters are **Pick List** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: .

Identify flow route to TNW[5]: **Two tributaries from Wetland A conjoin and flow directly to the Big Sioux River, a TNW.**
Tributary stream order, if known: .

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☒ Natural
☐ Artificial (man-made). Explain: .
☒ Manipulated (man-altered). Explain: **Tributary has been manipulated by ditching within and beyond the review area for agricultural, residential and road construction purposes.**

Tributary properties with respect to top of bank (estimate):
Average width: **highly variable at 5 to 30** feet
Average depth: **< 1 foot** feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):
☒ Silts ☒ Sands ☐ Concrete
☒ Cobbles ☒ Gravel ☐ Muck
☐ Bedrock ☒ Vegetation. Type/% cover: **Plant species composition consists of agricultural crops and tame/non-native grasses.**
☐ Other. Explain: .

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **Residential areas and road ditches are planted to non-native grasses providing soil stabilization, while agricultural areas are more subject to erosion due to typical crop production methodology.**
Presence of run/riffle/pool complexes. Explain: .
Tributary geometry: **Meandering**
Tributary gradient (approximate average slope): **<2%** %

(c) Flow:
Tributary provides for: **Ephemeral flow**
Estimate average number of flow events in review area/year: **6-10**
Describe flow regime: **Flow occurs during snow melt and rainfall events.**
Other information on duration and volume: .

Surface flow is: **Discrete and confined.** Characteristics: .

Subsurface flow: **Unknown**. Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☒ OHWM[6] (check all indicators that apply):
☐ clear, natural line impressed on the bank ☐ the presence of litter and debris
☐ changes in the character of soil ☐ destruction of terrestrial vegetation
☐ shelving ☐ the presence of wrack line
☒ vegetation matted down, bent, or absent ☒ sediment sorting
☐ leaf litter disturbed or washed away ☐ scour
☒ sediment deposition ☐ multiple observed or predicted flow events
☐ water staining ☐ abrupt change in plant community
☐ other (list):
☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
☐ High Tide Line indicated by: ☐ Mean High Water Mark indicated by:

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

☐ oil or scum line along shore objects
☐ fine shell or debris deposits (foreshore)
☐ physical markings/characteristics
☐ tidal gauges
☐ other (list):
☐ survey to available datum;
☐ physical markings;
☐ vegetation lines/changes in vegetation types.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: **Typical shallow, wetlands, prairie streams and drainages.** .

Identify specific pollutants, if known: **Specific pollutants are unknown, however pollutants likely include fertilizers, pesticides and herbicides from residential home and lawn care products, agricultural practices and road construction/maintenance activities.**

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☒ Wetland fringe. Characteristics: **Wetlands abut the tributaries.**
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☒ Aquatic/wildlife diversity. Explain findings: **Aquatic habitat is considered to be of low quality given the residential and agricultural environment.**

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: **Wetland A = 10.78** acres

Wetland type. Explain: **Linear depressional.**

Wetland quality. Explain: **Wetland A is highly manipulated for road maintenance, lawn care purposes and agricultural practices such that the wetland is in a degraded condition.**

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral flow**. Explain: **Runoff from rainfall and snowmelt is the primary source of water flow for Wetland A.**

Surface flow is: **Discrete and confined**

Characteristics: .

Subsurface flow: **Unknown**. Explain findings: .

☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

☒ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain: .
☐ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **2-5** river miles from TNW.

Project waters are **2-5** aerial (straight) miles from TNW.

Flow is from: **Wetland to navigable waters.**

Estimate approximate location of wetland as within the **50 - 100-year** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: **Typical shallow, wetlands, prairie streams and drainages.**

Identify specific pollutants, if known: **Specific pollutants are unknown, however pollutants likely include fertilizers, pesticides and herbicides from residential home and lawn care products, agricultural practices and road construction/maintenance activities.**

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .

☐ Vegetation type/percent cover. Explain: **Plant species composition consists of agricultural crops and tame/non-native grasses.**

☐ Habitat for:

☐ Federally Listed species. Explain findings:

☐ Fish/spawn areas. Explain findings:

☐ Other environmentally-sensitive species. Explain findings:

☒ Aquatic/wildlife diversity. Explain findings: **Aquatic habitat is considered to be of low quality given the residential and agricultural environment.**

3. **Characteristics of all wetlands adjacent to the tributary (if any)**

All wetland(s) being considered in the cumulative analysis:
Approximately (**10.78**) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Wetland Name	Directly abuts? (Y/N)	Size (in acres)
A	**Y**	**10.78**

Summarize overall biological, chemical and physical functions being performed: **Refer to Figures 1 and 2. Land use surrounding Wetland A consists of a mix of agricultural lands and urban development. The reviewed wetland moderates the downstream transport of stormwater generated from this landscape. Similarly, the Wetland A has some capacity to capture and process pollutants associated with stormwater runoff. Wetland A provides a low level of habitat for various wildlife species.**

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: **The non-RPW tributaries and the adjacent wetland, identified as Wetland A, has a significant nexus to the Big Sioux River, a TNW. Functionally, it is a part of the TNW's tributary system such that it impacts the biological, physical and chemical integrity of the Big Sioux River. Land use surrounding the wetland consists of urban and agricultural lands and moderates the downstream transport of stormwater generated from this landscape. Similarly, the wetland has a limited ability to capture and process pollutants associated with stormwater runoff. The wetland also provides a low level of habitat for a limited array of wildlife species.**

7. **Impoundments of jurisdictional waters.**[9]
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☒ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☒ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☒ Wetlands: **Refer to Figure 3. One isolated, non-jurisdictional wetland includes Wetland B = 0.01** acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **Provided by Applicant.**
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☒ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .

[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

- ☐ Corps navigable waters' study: .
- ☐ U.S. Geological Survey Hydrologic Atlas: .
  - ☐ USGS NHD data.
  - ☐ USGS 8 and 12 digit HUC maps.
- ☒ U.S. Geological Survey map(s). Cite scale & quad name: **Tea 1:24K.**
- ☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
- ☒ National wetlands inventory map(s). Cite name:**Obtained through Google Earth.**
- ☐ State/Local wetland inventory map(s): .
- ☐ FEMA/FIRM maps: .
- ☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- ☒ Photographs: ☒ Aerial (Name & Date):**Provided by consultant and accessed through Google Earth.**
  or ☐ Other (Name & Date): .
- ☐ Previous determination(s). File no. and date of response letter: .
- ☐ Applicable/supporting case law: .
- ☐ Applicable/supporting scientific literature: .
- ☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

Figure 1. Aerial view of review area. Review area outlined in green.

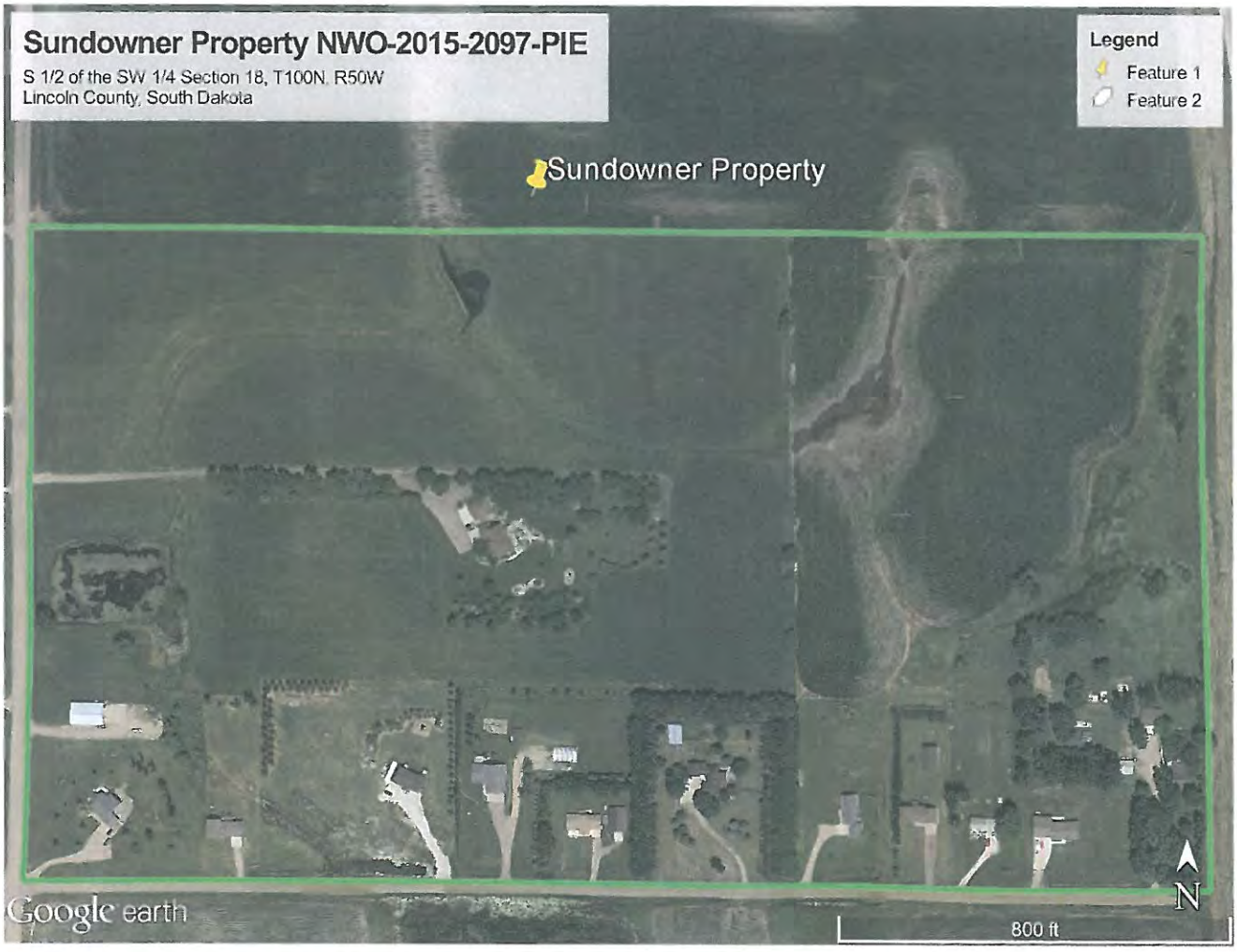


Figure 2. Topographic map of review area outlined in green.

Figure 3. Aerial view of review area showing jurisdictional Wetland A and non-jurisdictional Wetland B.

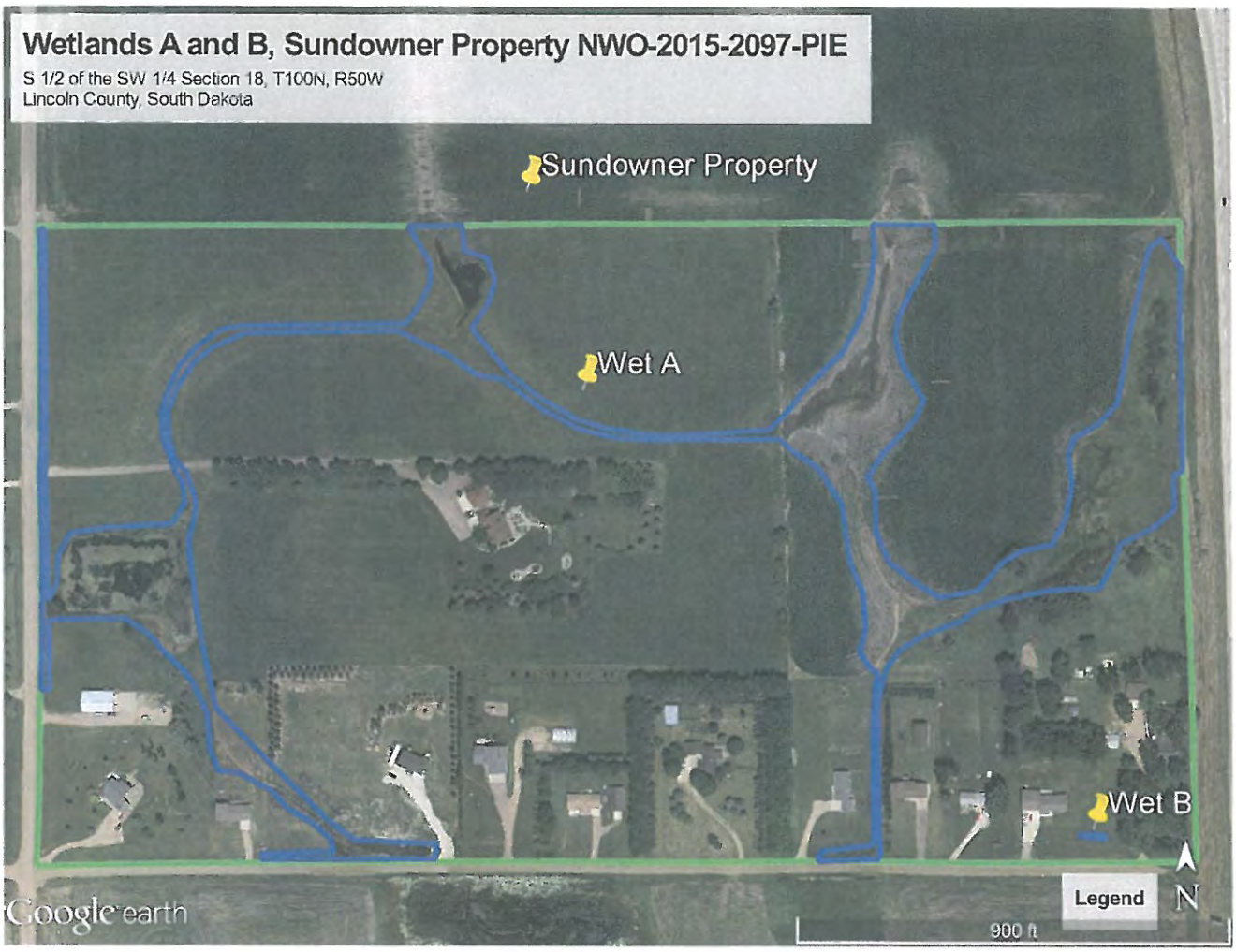
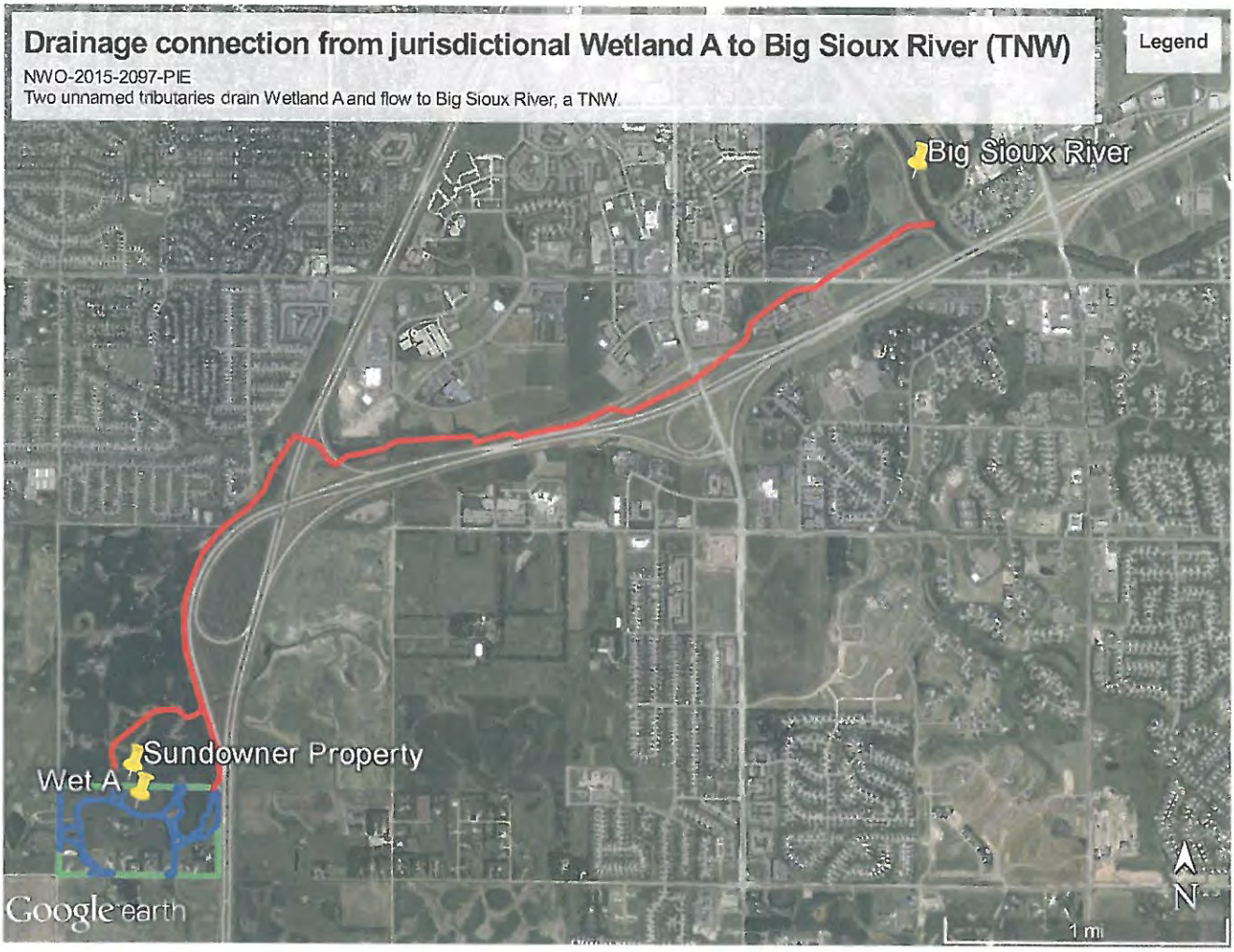


Figure 4. Aerial view of drainage connection from jurisdictional Wetland A to Big Sioux River TNW.



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
SOUTH DAKOTA REGULATORY OFFICE
28563 POWERHOUSE ROAD, ROOM 118
PIERRE, SOUTH DAKOTA 57501-6174

REPLY TO
ATTENTION OF

June 23, 2017

South Dakota Regulatory Office
28563 Powerhouse Road, Room 118
Pierre, South Dakota 57501

Sundowner, Incorporated
Attn: Dan Lemme
3408 South Sycamore Road
Sioux Falls, South Dakota 57110

Dear Mr. Lemme,

Reference is made to the information received May 10, 2017, and additional information received June 14, 2017, concerning Section 404 of the Clean Water Act permit requirements. The review area is the northwest quarter of Section 19, Township 100 North, Range 50 West, Lincoln County, South Dakota.

Based on the information provided, we have determined that there are waters of the United States (i.e. jurisdictional waters) located within the review area. Therefore, any activity involving the discharge of dredged or fill material within the waters of the United States would require a permit from the Corps of Engineers.

At your request, we have evaluated 16 potential aquatic resources, the locations of which are noted on page 30 of the Bakker Landing Jurisdictional Determination & Wetland Delineation provided to our office on May 10, 2017. Waters 9,13 & 14 were found to be jurisdictional waters of the US under Section 404 of the Clean Water Act. Waters 1,2,4,5,6,7,8, & 11 were determined as non-jurisdictional waters under action ID number NWO-2013-2226-PIE, which is still in effect. Waters 3, 10, 12, 15 & 16 were found to be non-jurisdictional.

An approved jurisdictional determination (JD) has been completed for your project. This JD is valid for 5 years from the date of this letter. The JD is enclosed and also may be viewed at our website. The link to the website is shown below. The JD will be available on the website within 30 days. If you are not in agreement with the JD, you may request an administrative appeal under Corps of Engineers regulations found at 33 C.F.R. 331. Enclosed you will find a Notification of Administrative Appeal Options and Process and Request for Appeal form (RFA). Should you decide to submit an RFA form, it must be received by the Corps of Engineers Northwestern Division Office within 60 days from the date of this correspondence (by August 22, 2017). It is not necessary to submit a RFA if you do not object to the JD.

You can obtain additional information about the Regulatory Program from our website:
http://www.nwo.usace.army.mil/Missions/RegulatoryProgram/SouthDakota.aspx

If you have any questions, please feel free to contact this office at the above Regulatory Office address, or telephone Carl Johnson at (605) 224-8531 and reference action ID NWO-2008-2837-PIE.

Sincerely,

for Steven E. Naylor
Regulatory Program Manager,
South Dakota

Enclosure

cc:
Wetland Specialists Incorporated (Cameron-Howell)

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): **June 23, 2017**

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: **CENWO-OD-RSD, Sundowner Investments jd request Lincoln County, NWO-2008-2837-PIE**

C. PROJECT LOCATION AND BACKGROUND INFORMATION: **The project area is the northwest quarter of Section 19, Township 100 North, Range 50 West located approximately 1.5 miles from the junction of I-29 and I 229. Waters 1, 2, 4, 5, 6, 7, 8 & 11 were found to be Non-Jursidictional according to NWO-2013-2226-PIE, which is still in affect, and therefore were not evaluated. Waterway 14 and Wetlands 9 & 13 are jurisdictional. Wetlands 3,10,12,15 & 16 are isolated.**

State:SD County/parish/borough:Lincoln City:Sioux Falls
Center coordinates of site (lat/long in degree decimal format): Lat.43.47468N; Long.-96.80232W
Universal Transverse Mercator: 14
Name of nearest waterbody: Unnamed Tributary to Ninemile Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows:The Big Sioux River
Name of watershed or Hydrologic Unit Code (HUC):1017020317
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☒ Office (Desk) Determination. Date:June 14, 2017
☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **are and are not** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   ☐ TNWs, including territorial seas
   ☐ Wetlands adjacent to TNWs
   ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   ☐ Non-RPWs that flow directly or indirectly into TNWs
   ☒ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   ☐ Impoundments of jurisdictional waters
   ☒ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: linear feet: width (ft) and/or 0.74 acres.
   Wetlands:2.01 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**
   Elevation of established OHWM (if known):

2. **Non-regulated waters/wetlands (check if applicable):**[3]

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: Waters 3, 10, 12, 15 & 16 were evaluated and found to be isolated waters. .

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**
   Identify TNW:

   Summarize rationale supporting determination:

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent":

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

   (i) **General Area Conditions:**
   Watershed size: 32259 **acres**
   Drainage area: 15 **acres**
   Average annual rainfall: 27 inches
   Average annual snowfall: 41 inches

   (ii) **Physical Characteristics:**
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **1** tributaries before entering TNW.

   Project waters are **15-20** river miles from TNW.
   Project waters are **1 (or less)** river miles from RPW.
   Project waters are **5-10** aerial (straight) miles from TNW.
   Project waters are **1 (or less)** aerial (straight) miles from RPW.

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW[5]: The unnamed tributary flows to Ninemile Creek which flows to the Big Sioux River.
Tributary stream order, if known:

(b) General Tributary Characteristics (check all that apply):
Tributary is:
☐ Natural
☐ Artificial (man-made). Explain:
☒ Manipulated (man-altered). Explain: There are large sections of drainage ditching within the tributary.

Tributary properties with respect to top of bank (estimate):
Average width: 17 feet
Average depth: 2 feet
Average side slopes: **4:1 (or greater).**

Primary tributary substrate composition (check all that apply):

☒ Silts	☐ Sands	☐ Concrete
☐ Cobbles	☐ Gravel	☒ Muck
☐ Bedrock	☒ Vegetation. Type/% cover:	
☐ Other. Explain:		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: The banks of the unnamed tributary are fairly shallow. The condition of the tributary is largely stable as multiple years of aerial imagery show a consistent OHWM.
Presence of run/riffle/pool complexes. Explain: N/A.
Tributary geometry: **Meandering**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **11-20**
Describe flow regime:
Other information on duration and volume:

Surface flow is: **Discrete and confined.** Characteristics:

Subsurface flow: **Unknown.** Explain findings:
☐ Dye (or other) test performed:

Tributary has (check all that apply):
☐ Bed and banks
☒ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☒ changes in the character of soil	☒ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☒ vegetation matted down, bent, or absent	☐ sediment sorting
☒ leaf litter disturbed or washed away	☐ scour
☒ sediment deposition	☒ multiple observed or predicted flow events
☐ water staining	☒ abrupt change in plant community
☐ other (list):	

☐ Discontinuous OHWM.[7] Explain:

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

(iii) **Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: The tributary drains largely agricultural areas. It is likely that the tributary's ecosystem is degraded due to ag runoff. Water is generally murky.

Identify specific pollutants, if known: .

(iv) **Biological Characteristics. Channel supports (check all that apply):**

☐ Riparian corridor. Characteristics (type, average width): .

☒ Wetland fringe. Characteristics: The channel provides hydrology to abutting wetlands.

☐ Habitat for:

☐ Federally Listed species. Explain findings: .

☐ Fish/spawn areas. Explain findings: .

☐ Other environmentally-sensitive species. Explain findings: .

☒ Aquatic/wildlife diversity. Explain findings: The channel likely provides habitat for aquatic animals such as frogs and foraging habitat for birds.

2. **Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: 2.01 acres

Wetland type. Explain: Palustrine Emergent.

Wetland quality. Explain: The wetlands are degraded due to surrounding agricultural land practices.

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral flow**. Explain: The wetlands bear a consistent connection to Ninemile Creek.

Surface flow is: **Discrete and confined**

Characteristics: The wetlands maintain consistent hydrology throughout the year.

Subsurface flow: **Unknown**. Explain findings: .

☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

☒ Directly abutting

☐ Not directly abutting

☐ Discrete wetland hydrologic connection. Explain: .

☐ Ecological connection. Explain: .

☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **15-20** river miles from TNW.

Project waters are **5-10** aerial (straight) miles from TNW.

Flow is from: **Wetland to navigable waters.**

Estimate approximate location of wetland as within the **5 - 10-year** floodplain.

(ii) **Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: Wetland system is degraded due to surrounding agricultural practices. Generally the water is murky with low vegetation diversity.

Identify specific pollutants, if known: .

(iii) **Biological Characteristics. Wetland supports (check all that apply):**

☐ Riparian buffer. Characteristics (type, average width): .

☒ Vegetation type/percent cover. Explain: Typha angustifolia, Phalaris arundinacea, and Schoenoplectus fluviatillis were identified in the delineation report provided by the applicant's agent.

☐ Habitat for:

☐ Federally Listed species. Explain findings: .

☐ Fish/spawn areas. Explain findings: .

☐ Other environmentally-sensitive species. Explain findings: .

☒ Aquatic/wildlife diversity. Explain findings: The wetland likely provides habitat for aquatic animals such as frogs and foraging habitat for birds.

3. **Characteristics of all wetlands adjacent to the tributary (if any)**

All wetland(s) being considered in the cumulative analysis: 2
Approximately (2.01) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Wetland Name	Size (in acres)	Directly abuts? (Y/N)
Water 13	1.42	Y
Water 9	0.59	Y

Summarize overall biological, chemical and physical functions being performed: The wetlands provide water filtration via sediment layers, prevent debris from collecting in downstream waters, provides some wetland habitat to various birds, fish and insects, provides vegetation cover.

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet width (ft), Or, acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .

☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: Years of aerial imagery viewed via Google Earth confirm that the tributary flows at least seasonally.

Provide estimates for jurisdictional waters in the review area (check all that apply):
☒ Tributary waters: **1400** linear feet **17** width (ft). .546
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☒ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

☒ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: Aerial earth imagery revealed that wetland 9 & 13 are directly fed by waterway 14, which is an RPW. There is no surface separation between the wetlands and the waterway.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

[8]See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]

☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination:

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☒ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☒ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☒ Wetlands: 2.85 acres.

Water Name	Size in acres
Water 16	0.70
Water 15	0.50
Water 12	0.95
Water 10	0.20
Water 3	0.50

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands:

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. **Data reviewed for JD (check all that apply** - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:Maps, plans.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☒ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.

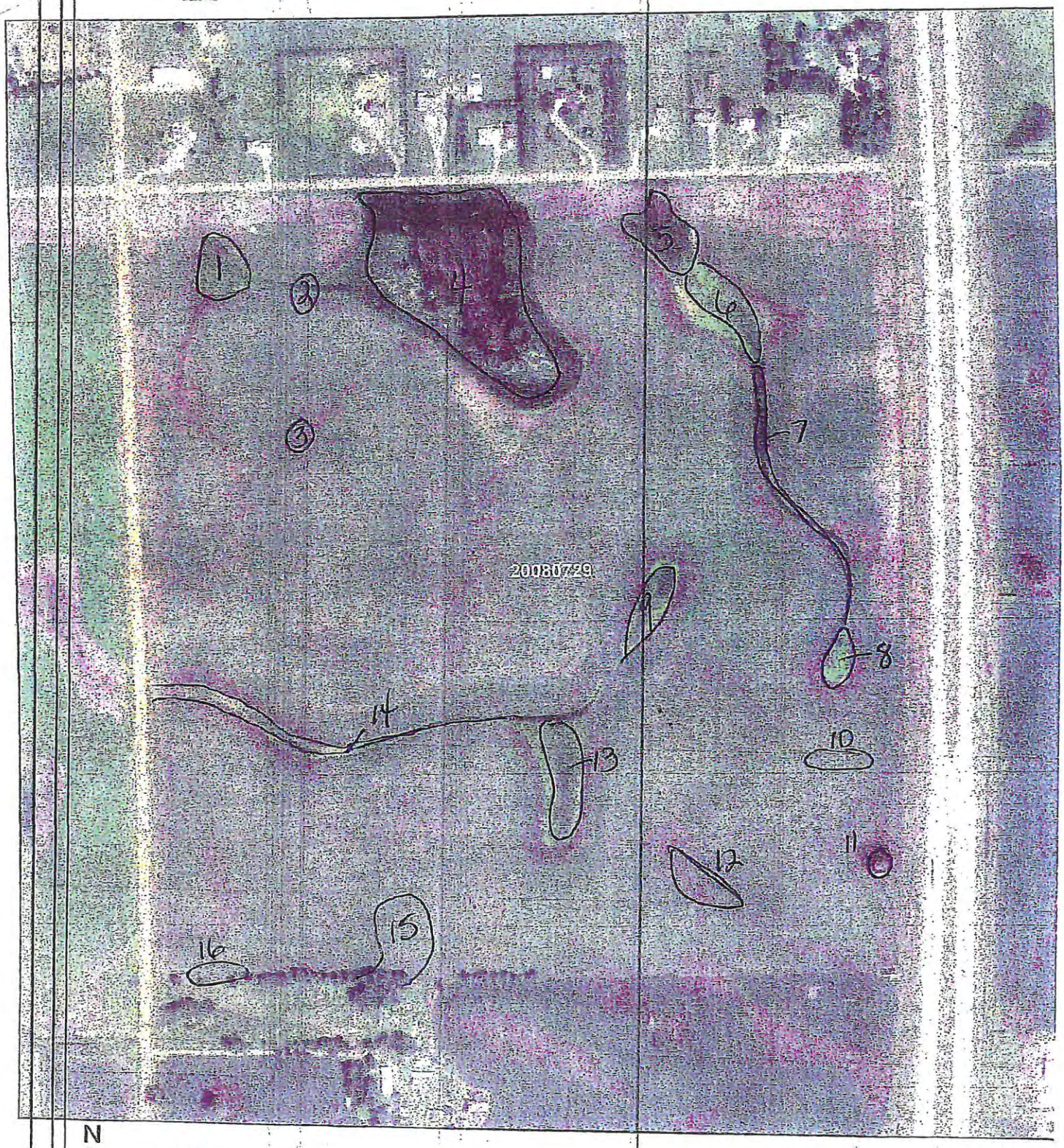
[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

☐ USGS 8 and 12 digit HUC maps.
☐ U.S. Geological Survey map(s). Cite scale & quad name: .
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☐ National wetlands inventory map(s). Cite name: .
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):Google Earth, Multiple years of imagery used.
or ☐ Other (Name & Date): .
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: Waterway 14 and Wetlands 9 & 13 are jurisdictional. Wetlands 3,10,12,15 & 16 are isolated. The five wetlands within the project area are not connected to another wetland or waterway and are not located within a floodplain. They are pothole type wetlands that remain isolated from any natural drainage way. No boating or irrigation would be possible at any location within these wetlands, no fisheries are present, and there is no interstate or foreign commerce at this site. Based on the information provided and the factors listed above, these wetlands are isolated..

Wetland Specialists Inc.

Producers Name: Harr-Lemme
County: Lincoln
Legal Desc: 00
Completion Date: --
Tract:



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