Appendix H – Approved Wetland Finding

U.S. DEPARTMENT OF TRANSPORTATION
Federal Highway Administration

THE STATE OF SOUTH DAKOTA
South Dakota Department of Transportation

Projects:
EM 1360(02), PCN 06JQ-85th St (270th St) - Fm Sundowner Avenue E 1 to Tallgrass Ave
IM 0292(88)74, PCN 07C6-I29 NBL - Fm 85th St to I229
IM 2292(104)0, PCN 07D0-I229 NBL - Fm I29 to Louise Ave

Sioux Falls, Lincoln County, South Dakota

This action complies with the Executive Order 11990 “Protection of Wetlands”.

Approved _____ Tom Lehmkuhl 2022.10.05 12:00:55 -05'00' Date: 10/05/2022

FHWA Environmental Engineer

Approved _____ Joanne M. Hight Date: Joanne Hight Digitally signed by Joanne Hight Date: 2022.10.05 10:21:05 -05'00'

SDDOT Administration Program Manager

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

THE STATE OF SOUTH DAKOTA
SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

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Sioux Falls, Lincoln County, South Dakota

I-29 Exit 74 New Interchange at 85th Street, 85th Street from Sundowner Avenue to Tallgrass Avenue, I-229 NB Auxiliary Lane from the I-29/85th Interchange to I-229 Exit 1C, and Repaving of I-229 Exit 1C NB Exit to Louise Avenue, in the cities of Tea and Sioux Falls, South Dakota

1. INTRODUCTION

In compliance with Executive Order 11990 and in accordance with 23 CFR 771.777 and Technical Advisory T6640.8a, this statement sets forth the basis for a finding that there is no practical alternative to the placing of fill for highway construction in certain wetlands adjacent to a new interchange at I-29 and 85th Street and along 85th Street between Sundowner Avenue and Tallgrass Avenue in Tea and Sioux Falls, Lincoln County, South Dakota. All practicable measures to minimize the fill areas to reduce harm to the wetlands have been taken.

2. PROJECT LOCATION AND SUMMARY

The proposed project consists of the construction of a new interchange at I-29 and 85th Street in Sioux Falls, South Dakota. The project's recommended design is a Diverging Diamond Interchange. The configuration also includes a connector ramp from southbound I-229 to the 85th Street exit ramp and a braided exit ramp from southbound I-29 to the 85th Street Exit, the construction of an auxiliary lane from the northbound I-29 entrance ramp to I-29 as it merges with I-229, and the reconstruction of the existing exit ramp at I-229 Exit 1C (Louise Avenue). The project also includes the two-lane paved section of 270th Street (future 85th Street) from its future interchange at I-29 west to 469th Avenue (Tea/Ellis Road).

Total estimated project construction cost is $49.4M. The project is tentatively scheduled to be constructed in FY 2025.

Attachment A shows the project location and illustrates the improvements included in the Build Alternative. **Attachment B** shows anticipated wetland impacts resulting from the Build Alternative.

3. PURPOSE AND NEED FOR THE ACTION / RELATED ACTIONS

The Purpose of the project is to address the main needs identified in the study area. These needs, which are listed below and will be addressed with equal importance and priority in this study, are:

- **System Linkage (Connectivity)** – The project is needed to address route inefficiencies that will be introduced with planned development surrounding the current transportation system. The connectivity need of the study area will be met if the project demonstrates that vehicle hours traveled (VHT) within the study area throughout the 2045 design year of the project do not exceed 101.5 million hours.

- **Traffic Operations (Mobility)** – The project is needed to ensure adequate levels of operation are maintained throughout the transportation network under projected traffic conditions. Several roadway segments and intersections within the existing network are expected to fail operationally under the projected traffic volumes. The mobility need of the study area will be met if the project demonstrates that acceptable levels of service (LOS) will be maintained on all roadway segments and at intersections on the local transportation network, according to SDDOT and City of Sioux Falls standards, under the projected traffic conditions. Acceptable levels of service are defined as LOS C for all freeway sections of I-29, I-229, and all ramp terminals within the study area, and LOS D for all arterial roadway sections and signalized intersections in the study area.

- **Economic Development (Planned Economic Growth)** – The project is needed to achieve the planned development identified in local plans and proposals. The economic development need of the study area will be met if the project demonstrates a positive Net Present Value (NPV) will be achieved throughout its lifecycle.

Related Actions – Future Improvements in the Project Study Area

The Cities of Tea and Sioux Falls are planning to jointly improve 85th Street from 469th Avenue (Tea-Ellis Road / Heritage Parkway / CR 111) eastward to the western I-29/85th Street Interchange access control area. This project is tentatively scheduled for construction in 2024. Updates to the Sioux Falls MPO's LRTP & TIP for the 2023-2026 period have been submitted for this project. No permits have yet been submitted for these improvements but permitting for construction is expected to be completed in 2023 for the 2024 construction year.

The one-mile segment of 85th Street between 469th and 470th Avenues is planned to be developed as a 2-lane rural (paved) road with a 3rd turning lane with major intersections at each end. The east ¼ mile (approaching the interchange) will be urbanized with lanes transitioning from the 3-lane to a 5/6 Lane layout to blend in with the interchange. Two-lane improvement segments are expected to conform to existing roadway sections and not result in wetland impacts.

Similar plans for future improvements to Sundowner Avenue for the one-mile segment extending north from Gateway Boulevard/CR 106 to its intersection with 85th Street. This segment is expected to develop as a three-lane rural road section. This will include some minor road and shoulder widening, but impacts to the adjacent roadside ditches are anticipated to be minimal. Sundowner Avenue, from 85th Street north to 69th Street is expected to be paved as a rural two-lane section, with minimal or no impact to roadside ditches.

4. ALTERNATIVES CONSIDERED

Four (4) alternatives were considered for the project, each as described below.

A. Existing Conditions Alternative

The Existing Conditions Alternative is a "no action" alternative. This alternative assumes that no interchange and no overpass would be constructed at I-29 and 85th Street. Any future construction would be limited to repaving and routine maintenance. The approved IJR acknowledges a phasing plan for many additional programmed and planned arterial network street projects to improve capacity, safety, and mobility in coordination with new interchange access on I-29 at 85th Street. Many of these phasing plan projects would proceed on the local system and independently as development needs dictate if an interchange is not constructed.

Although the no action alternative typically does not meet the purpose and need of a proposed transportation project, it is always carried forward to serve as the baseline when

analyzing the potential social, economic, and environmental impacts of other alternatives. Consideration of a no action alternative is required by Council of Environmental Quality regulations for implementing NEPA (40 CFR 1500-1508).

B. No Build Alternative

With the No Build Alternative, an interchange would not be constructed at I-29 and 85th Street. However, this is not a “no action” alternative. The No Build Alternative assumes that the previously planned overpass at I-29 and 85th Street would be constructed. The approved IJR acknowledges a phasing plan for many additional programmed and planned arterial network street projects to improve capacity, safety, and mobility in coordination with new interchange access on I-29 at 85th Street. Many of these phasing plan projects would proceed on the local system in conjunction with the construction of an interchange, or independently as development needs dictate if an interchange is not constructed.

C. IJR Diamond Interchange with No Ramp Braids

A diamond interchange with no ramp braids was considered in the IJR as an option that would potentially reduce costs. This alternative was not selected as the IJR Recommended Alternative because it did not allow a minimum weaving distance of 2,000 feet and was not considered feasible. Because the IJR concluded that this alternative is not feasible, it will not be considered further during the NEPA process.

D. The Build Alternative includes the following components of the IJR Recommended Alternative.

- Construction of a Diverging Diamond Interchange (DDI) along I-29 at 85th Street. The configuration also includes a connector ramp from southbound I-229 to the 85th Street exit ramp and a braided exit ramp from southbound I-29 to the 85th Street Exit.
- Construction of a full auxiliary lane from 85th Street through the northbound I-229 Exit ramp, including the reconstruction of the existing Exit Ramp 1C at Louise Avenue.
- Two-lane paving of 270th Street from its future interchange at I-29 west to 469th Avenue (Tea/Ellis Road).
- Two-lane pavement of Sundowner Avenue from 69th Street to 270th Street.

In addition to the above components, the Build Alternative would include ¾ access to 85th street from future local access roads that would be constructed as part of planned development in the area. This ¾ access would allow for right turns onto and off access roads at 85th Street and would also allow for left turns onto the access roads from 85th Street. Left turns from access roads onto 85th street would not be permitted. The Build Alternative also proposes the expansion of 85th street to six lanes between the 85th Street east access intersection and Tallgrass Avenue.

The Build Alternative was designed with the assumption that planned local roadway projects on Sundowner Avenue and Tallgrass Avenue would proceed to design and construction during the design and construction timeline of the Build Alternative. These local projects would include reconstruction of Sundowner Avenue and Tallgrass Avenue (currently gravel roads) to four-lane paved roads, and each of these projects would have independent utility. When considering impacts for the Build Alternative, the EA also looks at the potential impacts of intersection improvements on 85th Street at Sundowner Avenue and Tallgrass Avenue. Improvements to 85th Street at these intersections, including approaches from the local roads, would be needed to provide independent utility to the Build Alternative. These intersections have been conceptually

designed for the purposes of environmental analysis of the Build Alternative. Their impacts will be considered as part of the NEPA process for this project to allow for an accurate impact comparison between alternatives. However, these approaches would be fully designed and constructed as part of the independent local roadway projects, as agreed upon by project parties in a pre-annexation agreement signed prior to the initiation of this study.

Coordination of the Build Alternative final design efforts and the design of local intersection improvement projects on Sundowner Avenue and Tallgrass Avenue with 85th Street will involve additional future coordination to improve efficiency in the design process. Currently, both projects are programmed in the Sioux Falls MPO's Transportation Improvement Plan (TIP) for design and construction in approximately the same timeframe as the Build Alternative.

The environmental effects of the No Build alternative have been fully analyzed and documented in an EA completed and signed November 2017. FHWA signed a FONSI in February 2018 based on the findings of the EA. As a result, effects from this alternative will not need to be explored further in the I-29 and 85th Street Interchange EA unless otherwise indicated. The effects from this alternative would be compared to those of the Build Alternative when selecting a Preferred Alternative if it is determined that both alternatives satisfy the purpose and need of the project.

The No Build and IJR Diamond Interchange with No Ramp Braids were dismissed due to various design-deficiency reasons. In addition, all the alternatives, except for the Existing Conditions Alternative, would result in wetland impacts. There are several wetlands situated near the highway which make them unavoidable with an overpass or interchange design. While the other alternatives would result in less wetland impact than the Build Alternative, they do not meet the purpose and need of the project and were dismissed (Section 2.0 within the EA).

5. BASIS FOR DETERMINING THE PROPOSED ACTION INCLUDES ALL PRACTICABLE MEASURES TO MINIMIZE HARM TO WETLANDS

Measures to minimize impacts to the wetlands were discussed and considered at all points of planning, location, and design of the project. Field delineations were conducted in November 2018 and July 2019 to identify the locations of wetlands within the study area. These delineations were updated in August 2022 to thoroughly investigate any potential stormwater pond areas. Elements of the Build Alternative, including drainage features, will be designed in such a way that they would avoid identified wetlands to the extent practicable. This includes consideration for an assessment of unavoidable impacts associated with cuts and fills necessary to satisfy SDDOT and City of Sioux Falls design standards for all roadways, sidepaths, and structural components of the project.

Wetland mitigation will be finalized following the Section 404 permit process with the USACE, though preliminary impacts and mitigation plan are discussed in Section 7 below. The mitigation plan for the proposed action proposes purchasing credits from a mitigation bank in the Lower Big Sioux Geographic Service Area (GSA). Off-site mitigation is being recommended because it is difficult to develop and maintain quality mitigation sites adjacent to roadways. Wetland mitigation for unavoidable impacts related to this project would be accomplished through the purchase of mitigation bank credits from a wetland mitigation bank.

Non-jurisdictional wetlands would be mitigated in accordance with FHWA regulation 23 CFR 777.9. The mitigation plan would be provided to the appropriate mitigation bank as part of the process for purchasing credits.

Best Management Practices (BMPs) will be implemented during all phases of construction to reduce impacts to aquatic resources from erosion and sedimentation. All disturbed areas will be restored and revegetated according to a project specific erosion and sediment control plan, which will be included in the project plans as Section D. The contractor will be required to submit a Spill Prevention, Control, and Countermeasure (SPCC) Plan prior to commencing construction. With

implementation of these measures, it is anticipated that the construction of the proposed I-29 and 85th Interchange and associated roadways will not result in long-term impacts to aquatic resources along the project corridor. In addition to the above measures, the project will require a USACE Section 404 permit and a South Dakota Department of Agriculture and Natural Resources (SDDANR) General Permit Authorizing Stormwater Discharges Associated with Construction Activities, and the project will comply with the conditions listed in these permits.

6. WETLAND IMPACTS

Several digital resources were examined, and a field review was conducted to determine wetland locations within the study area. Digital resources examined include:

- U.S. Geological Survey black and white aerial photographs (2016)
- U.S. Geological Survey LiDAR data for South Dakota
- The Natural Resources Conservation Service (NRCS) Soil Survey Geographic Maps (SSURGO) for Lincoln County
- U.S. Fish and Wildlife Service National Wetlands Inventory (NWI)

The primary field delineation site visit was conducted by Rebecca Beduhn, SEH Senior Scientist, on November 13, 2018, and a follow-up field delineation site visit was conducted on July 25, 2019. An additional wetland delineation was conducted by Ann Howell of Wetland Specialists, Inc. on July 22, 2022. The purpose of these visits was to identify 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 wetlands for this project were evaluated as part of a larger study area. The numbering applied in the overall study is maintained in this document for consistency with the initial survey. However, this section discusses only those wetlands located within the 85th Street study area, as these are the wetlands which would have the potential to be impacted by actions associated with the 85th Street project.

In total, 44 wetland areas were delineated within the 85th Street study area. These include newly delineated wetlands for this study, as well as wetlands delineated in the past five years for other projects and approved by USACE (hereby referred to as wetlands delineated by others). Wetlands in the study area consist of primarily palustrine emergent wetlands (PEM), with one palustrine unconsolidated bottom (PUB) wetland.

The Preliminary Wetlands Assessment for the current survey was provided to the USACE on January 6, 2020, was supplemented on August 11, 2022, and both are included in **Attachment C**. It was determined that there are no wetlands present within the August 2022 review area. USACE provided Approved Jurisdictional Determinations (AJDs) for both delineations on March 6, 2020 and September 1, 2022. (**Attachment D**). The March 2020 AJD states that there are jurisdictional and non-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. The September 2022 AJD states there are no jurisdictional or non-jurisdictional waters located in the updated review area.

The Build Alternative results in an estimated 14.76 acres of permanent wetland impact (10.09 acres of jurisdictional wetlands, 4.67 acres of non-jurisdictional wetlands). Due to the space requirements of the necessary improvements and the number and proximity of wetlands within the study area, these impacts are unavoidable. There are no planned temporary wetland impacts or impacts to non-wetland Waters of the US. A Section 404 permit will be required for jurisdictional wetland impacts. Non-jurisdictional wetlands would need to be mitigated under EO 11990, in accordance with FHWA regulation 23 CFR 777.9. Delineated and impacted wetlands are shown in **Attachment B** and listed in **Table 1**. Completely avoiding wetlands would require the preferred alternative to be a no-build alternative, realignment alternative, or an alternative that creates a design exception (i.e. narrowing travel lanes or shoulders) on the Interstate Highway System.

These are not practicable options. A no-build alternative would not address the project's purpose and need. A realignment of I-229 would require the construction of unsafe curves in the alignment of the travel lanes. An alignment shift would likely require nearby I-229 bridge crossing relocations that would be prohibitively expensive. Narrowed travel lanes would not be acceptable due to potential safety and congestion issues that could result.

7. WETLAND MITIGATION

Wetlands in the project area are located within the Lower Big Sioux Geographic Service Area. As part of the wetland delineation process, the Hydrogeomorphic (HGM) Approach was utilized to determine the Functional Capacity Unit (FCU) score of the existing basins as wetland impacts will result from the proposed project. Full calculations for HGM can be found in the Hydrogeomorphic Model Worksheet in **Attachment E**. The number of FCUs required to be mitigated are calculated by multiplying the impact in acres by the FCI score. Wetland impacts and FCUs anticipated to be required for mitigation are included in Table 1 below. These values will be finalized following final design and wetland permitting.

For wetlands requiring mitigation under Section 404, a 1:1 ratio is assumed where credits are available in the same watershed and resource type. If the same resource type is not available, the mitigation ratio will increase to 1.5:1, for jurisdictional wetlands and wetlands impacts under EO 11990. Jurisdictional wetlands anticipated to be impacted that were delineated using Level 1 methodology (Wetland 35) were not evaluated using the HGM Model. Mitigation for these wetlands is calculated by acre of impact x 5.5 FCI x 1.5:1 mitigation ratio.

Because avoiding wetlands is a not a practicable option, a number of mitigation measures will be incorporated into the final design of the build alternative and mitigation commitments for construction will be incorporated into the project plans. These commitments may include adjustments to ditch grading, and the use of silt fencing and barrier protection (potential solutions, to be determined during final design). Off-site wetland mitigation through the purchase of wetland credits from a wetland bank is proposed to satisfy the requirements for both the Section 404 permit and "No Net Loss" per EO 11990. Wetland Banking is the preferred option for off-site mitigation, and since it is feasible for this project, other options for off-site mitigation such as In-lieu fee and permittee responsible site were not considered. On-site mitigation is not proposed due to the site constraints with available land. FCUs required for mitigation are separated by credit type under Section 404 EO 11990 in the following **Table 1.**

Table 1 – Wetland Impacts and Mitigation

Wetland Name	Wetland Impact (acres)	HGM Type	Jurisdictional Status	FCI Score	Mitigation Ratio (in-kind and in-place)	Mitigation Required Under (EO 11990 or Section 404)	Mitigation Required (FCUs)
Wetland 1	0.12	Prairie Pothole	Non-JD	4.46	1:1	EO 11990	0.5352
Wetland 2	2.03	Slope	Non-JD	4.79	1:1	EO 11990	9.7237
Wetland 3	1.00	Slope	Non-JD	4.92	1:1	EO 11990	4.9200
Wetland 5	0.06	Prairie Pothole	Non-JD	4.85	1:1	EO 11990	0.2910
Wetland 6	0.32	Prairie Pothole	Non-JD	5.52	1:1	EO 11990	1.7664
Wetland 9	0.13	Prairie Pothole	Non-JD	4.57	1:1	EO 11990	0.5941
Wetland 10	0.07	Slope	JD	3.38	1:1	Section 404	0.2366
Wetland 11	2.58	Slope	JD	4.77	1:1	Section 404	12.3066
Wetland 12	0.79	Prairie Pothole	JD	3.36	1:1	Section 404	2.6544
Wetland 15	0.01	Slope	Non-JD	4.07	1:1	EO 11990	0.0407
Wetland 23	1.34	Slope	JD	4.76	1:1	Section 404	6.3784
Wetland 33	0.78	NA	Non-JD	NA[1]	1:1	EO 11990	4.2900
Wetland 34	5.09	Slope	JD	4.39	1:1[2]	Section 404	22.3451
Wetland 35	0.22	NA	JD	NA[1]	1.5:1	Section 404	1.8150
Wetland 38	0.03	Slope	Non-JD	3.98	1:1	EO 11990	0.1194
Wetland 39	0.02	Slope	Non-JD	3.91	1:1	EO 11990	0.0782
Wetland 40	0.06	Slope	Non-JD	4.00	1:1	EO 11990	0.2400
Wetland 43	0.11	Slope	Non-JD	3.91	1:1	EO 11990	0.4301
Total Mitigation Required under Section 404							
Total Prairie Pothole FCUs							**2.6544**
Total Slope FCUs							**41.2667**
Non-Type Specific FCUs (Level 1 delineated wetlands)							**1.815**
Total Mitigation Required Under EO 11990							
Total Prairie Pothole FCUs							**3.1867**
Total Slope FCUs							**15.5521**
Non-Type Specific FCUs (Level 1 delineated wetlands)							**4.2900**

[1]: Level 1 delineated wetlands mitigation requirement was calculated by: acres impacted x 5.5 FCI x mitigation ratio. This is explained in further detail in the narrative preceding this table.

[2]: Wetland 34 impacts include a prior-constructed wetland mitigation site by others unrelated to the proposed project. The final mitigation ratio, therefore, may need to be adjusted based on further coordination with USACE during the project's Section 404 permit application. In addition, Wetland 34 includes impacts associated with a prior construction project that was graded for the Northbound I-29/I-229 Auxiliary Lane which was not constructed and later added to the proposed action.

To compensate for permanent wetland impacts at the site, the project proposes to purchase wetland credits from Tetonka, LLP. Tetonka has confirmed it has the following credits available at this time between three wetland banks: 126.5065 depressional credits and 12.87 slope credits (**Attachment F**). There are insufficient slope credits available to offset the slope wetland impacts; however, a 1.5:1 ratio can be used for replacement out-of-kind under Section 404 and EO 11990. Assuming that the remaining slope credits will be replaced with prairie pothole credits with a higher ratio, there are sufficient credits available between the three banks owned by Tetonka LLP at this time (Calculation shown below). Tetonka, LLP has indicated that there may be sufficient slope credits available when this project moves into wetland permitting efforts.

The USACE has confirmed that credits which were purchased for the prior, but not constructed, I-29 overpass project can be applied to the anticipated Section 404 permit for the current proposed interchange project. A total of 4.55 FCUs are anticipated to be available for use. The USACE will require that the previous purchase agreement with Tetonka LLP be revised to include the Section 404 action, as well as EO 11990, as the intended and appropriate use for the credits. The final amount of previous purchased credits that can be applied to this project will be determined in future discussions including the USACE and Tetonka LLP, including the amount and type of wetland credits that will be required. This will be included as a commitment in the Environmental Assessment.

Additionally, a wetland pre-construction commitment to avoid or minimize harm to a USACE Section 404 permitted wetland mitigation site that is unrelated to the project – but may be impacted by the project (Wetland 34) – shall be considered and incorporated where practicable. This will include avoidance and minimization measures that may include ditch slope adjustments, silt fencing, and barrier (cable, concrete or steel) protection.

Table 2 – Mitigation Calculations

Slope FCUs required under Section 404 and EO 11990	Slope FCUs available by Tetonka, LLP	Remaining Slope FCUs to be replaced out-of-kind	Prairie Pothole FCUs required to offset remaining Slope FCUs (1.5:1)	Total Prairie Pothole FCUs required for the project (under Section 404 and EO 11990)
56.8188	12.87	43.9488	65.9232	77.8693

8. NEPA COORDINATION & DOCUMENTATION

In accordance with the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. §§ 4321-4370h and the Regulations for Implementing the procedural Provisions of NEPA (40 CFR §§ 1500-1508), the SDDOT conducted an environmental review on the project to determine if significant impacts to the environment would occur because of the proposed project improvements and to determine the level of documentation required to comply with NEPA. Based on input from state and federal agencies, tribes that have an interest in projects located in Lincoln County and the public, SDDOT has determined this project will not individually or cumulatively have a significant effect on the environment and that NEPA compliance will be documented under an Environmental Assessment (EA).

The project has been and will continue to be in coordination with the following agencies as it relates to wetland impacts:

- South Dakota Department of Environment & Natural Resources (renamed South Dakota Department of Agriculture & Natural Resources during this study)

- South Dakota Department of Game, Fish and Parks
- U.S. Fish and Wildlife Services – South Dakota Field Office
- Natural Resources Conservation Service
- U.S. Army Corps of Engineers

In addition, in accordance with Section 106 of the NHPA (36 CFR Part 800), the SDDOT solicited comments on this project from the following tribes:

- Flandreau Santee Sioux Tribe
- Iowa Tribe of Oklahoma
- Ponca Tribe of Nebraska
- Lower Brule Sioux Tribe
- Sisseton-Wahpeton Oyate Tribe
- Standing Rock Sioux Tribe
- Yankton Sioux Tribe
- Three Affiliated Tribes of North Dakota

Consultation letters were sent to each tribe on February 27, 2019 (**Attachment G**). One response letter was received from the Yankton Sioux Tribe on March 27, 2019 stating that the Tribal Historic Preservation Office does not have an interest in the proposed project but would like to be notified if any cultural artifacts are found. No other responses from tribes have been received.

Public Involvement

Open House style public meetings were held throughout the project, which helped the study team identify impacts and obtain input on the alternatives. Stakeholders were notified of the meetings through postcard mailings, the project website, press release, local newspaper ads, and social media. The following Open Houses were held for the project:

- Open House #1, April 17, 2019 – The focus of this meeting was to introduce the project and provide an overview of the scope and schedule, present a draft purpose and need, and present a draft range of alternatives. A presentation was provided by project staff, and poster-board exhibits were set up at the meeting. Comment forms were provided, and members of the study team were on hand to answer questions. Postcard invitations were mailed directly to 158 properties surrounding the project area. Approximately 120 individuals signed in at the meeting.
- Noise Abatement Analysis Meeting, August 7, 2020 – This meeting was held to share the results of the noise analysis with stakeholders who rent or own property in the study area. This study shared concepts for the noise barrier proposed by the Build Alternative and commenced the balloting process for the barrier.
- Open House #2 – An additional public information meeting will be held to present the findings of the EA. The details of this public meeting, public comments received, and responses to these comments, if needed, will be published later.

Public involvement documentation is included in **Attachment H**.

Other Stakeholders

Roles of members of the 85th Street Business District Joint Venture (85th Street JV), for the purposes of the environmental documentation process, were those of members of the public with special interest in the project due to land ownership and proximity to proposed improvements. Regular quarterly update project meetings were held with SDDOT, FHWA, and the 85th Street JV. These meetings allowed the local government agency to provide regular updates on the project

status and allowed the 85th Street JV members to provide input and ask questions. Environmental Documentation coordination meetings with the 85th Street JV group were held beginning in November 2018 and have continued to present.

Previous Public Involvement

Numerous public involvement activities were also conducted prior to this study during the EA Overpass study prior to the change in the project to include interchange full-access ramps from I-29. This included four open house style meetings to discuss the project throughout various stages of completion, and an additional public meeting to discuss the noise study. A presentation was given at each meeting and project staff were present to answer questions.

A Public Meeting/Open House for the I-29/I-229 Interchange Reconstruction and 85th Street Extension was also held prior to this study. A presentation was made to review the EA process, the purpose of the project, the proposed improvements and alternatives, and potential impacts.

Future Public Involvement

The EA document will be made available to public agencies and the general public for review and comments. The EA document will be available for a 30-day comment period at the following locations:

- SDDOT Website
- Sioux Falls City Hall, Engineering Department
- SDDOT Sioux Falls Area Office
- Siouxland Library, Caille Branch
- SDDOT Office of Project Development in Pierre
- FHWA Division Office, Pierre

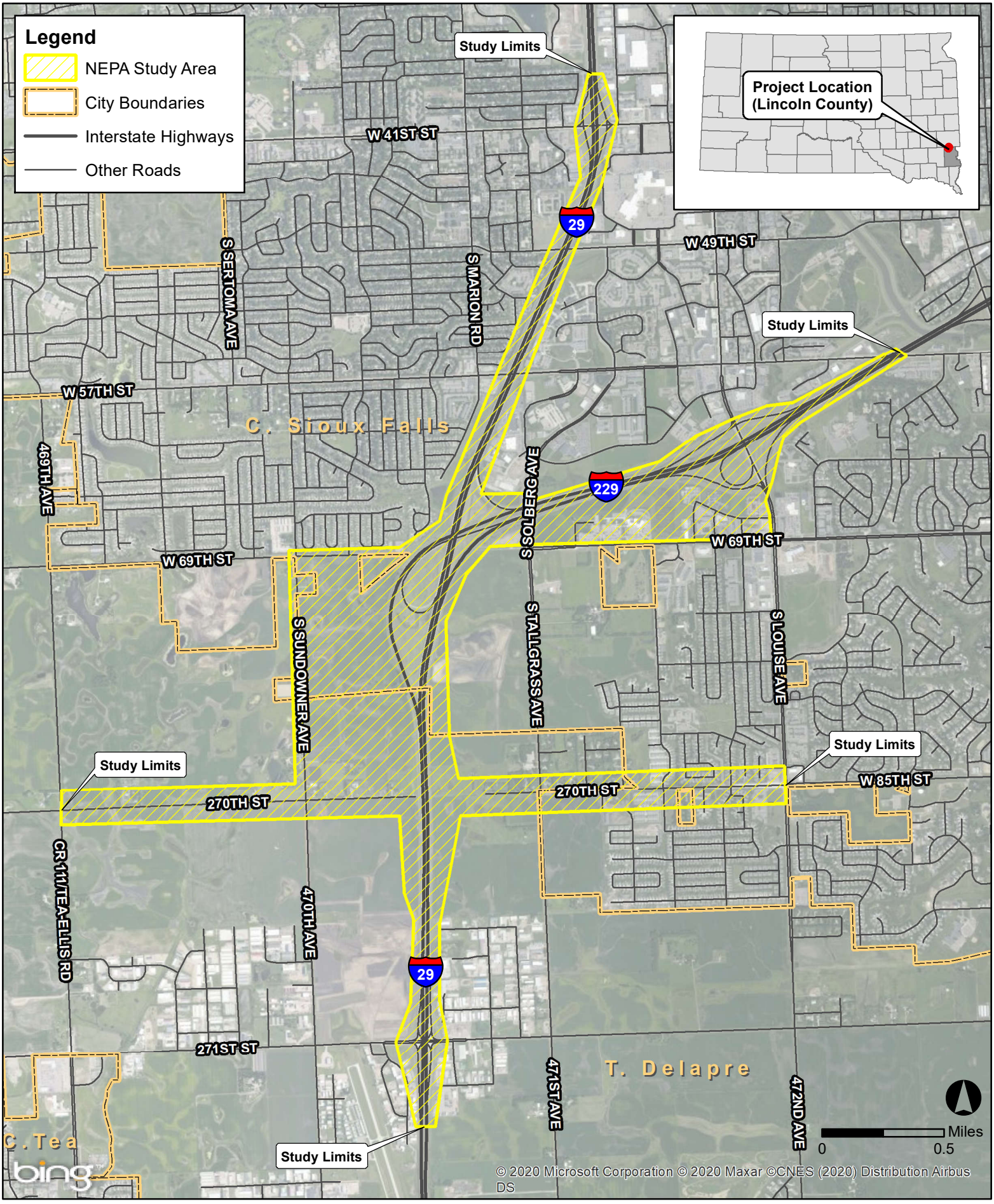
FHWA will take into consideration all verbal and formal comments received during the comment period in determining whether the Preferred Alternative would or would not result in significant social, economic, and environmental impacts. If it is found that project does not result in significant impacts, a Finding of No Significant Impact (FONSI) document will be prepared and submitted to FHWA. The FHWA would take into consideration all verbal and formal comments received during the comment period in determining whether the Preferred Alternative would or would not result in significant social, economic, and environmental impacts. If a FONSI is determined, this document will be posted on the SDDOT and other project websites. If not, the agencies would consider whether the project will be pursued under an Environmental Impact Statement (EIS).

9. CONCLUSION

Based on the above considerations, it has been determined that there is no practicable alternative to the proposed construction in wetlands and that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use.

Attachments

Attachment A – Project Location and Build Alternative



SEH
401 East 8th Street
Suite 309
Sioux Falls, SD 57103
(605) 330-7000

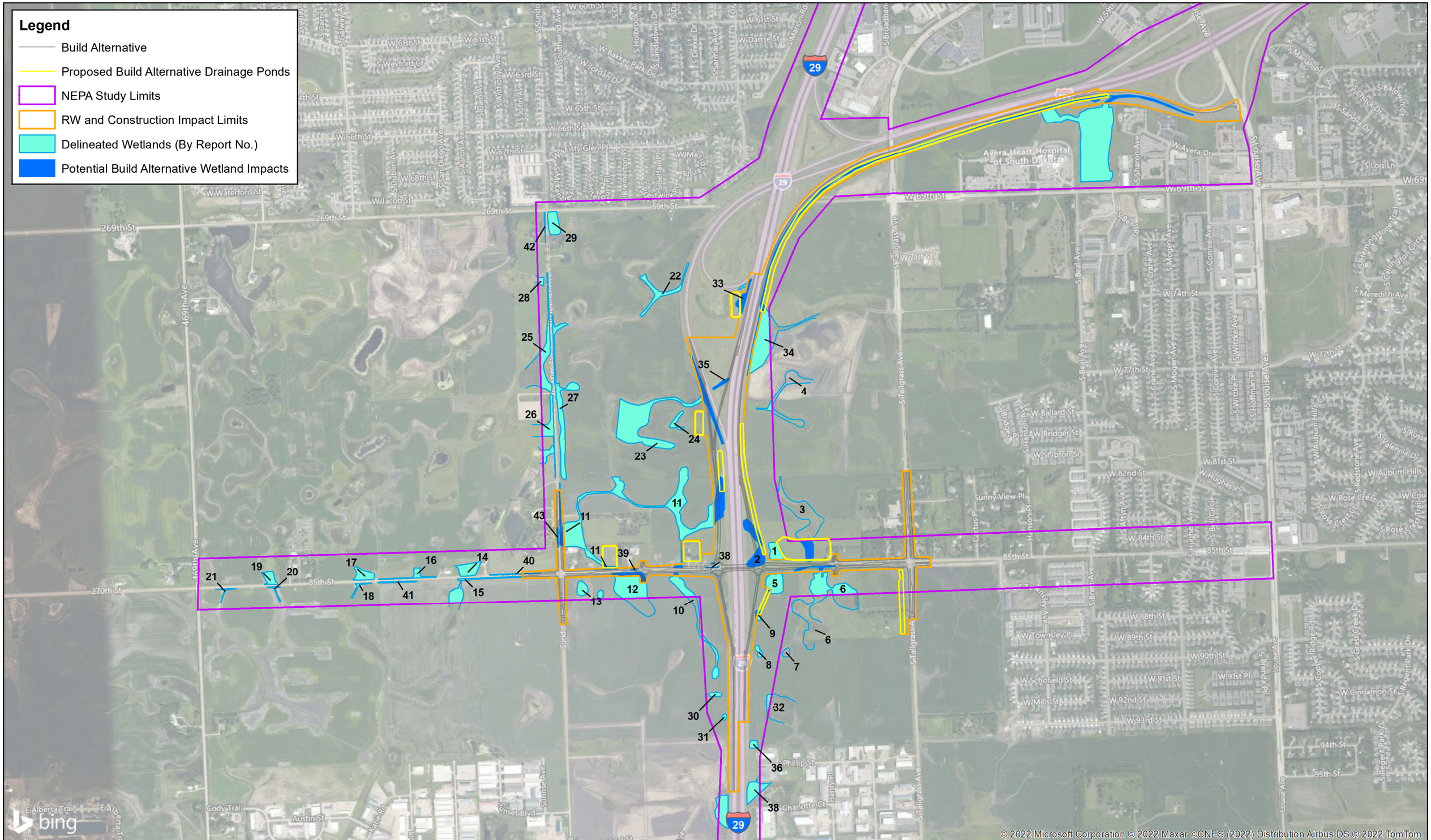
Print Date: 12/1/2020
Source: Bing Maps,

Map by: mfalk
Projection: State Plane South Dakota S

Project Location Map

I-29 and 85th Street Interchange
Lincoln County, SD

Attachment B – Wetland Impacts Map



SEH
401 East 8th Street
Suite 309
Sioux Falls, SD 57103
(605) 330-7000

Print Date: 8/18/2022
Source: Bing Maps,

Map by: mfalk
Projection: State Plane
South Dakota S

Delineated Wetlands and Build Alternative Wetland Impacts

I-29 and 85th Street Interchange
Lincoln County, SD

0 1,250 2,500 Feet

Attachment C –Preliminary Wetland Assessment

WSI WETLAND SPECIALISTS INC

Project Site: 85th and Tallgrass

85th and Tallgrass
Lincoln County

Jurisdictional Determination & Wetland Delineation

August 11, 2022

Submitted to:
Corps of Engineers
South Dakota
Regulatory Office
28563 Powerhouse Road
Pierre, SD 57501

Owner:
Joel Dykstra
2401 W. Trevi Place
Sioux Falls, SD 5710
(605) 310-3398
joel.dykstra@rmbassoc.com

Engineer:
Luke Menden, Scientist SEH
3535 Vadnais Center Drive
St. Paul, MN 55110
lukemenden@sehinc.com (651) 490-2053

Consultant:
Wetland Specialist Inc.
21281 464th Ave
Volga, SD 57071

Prepared By:

Karen Cameron-Howell
Wetland Specialist
August 11, 2022

Ann Howell
Wetland Delineator
August 11, 2022

WSI WETLAND SPECIALISTS INC

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Introduction

As requested by Joel Dykstra Wetland Specialists Inc. completed a wetland delineation, on the 12.84-acre property located in the NE1/4 NE1/4 of Section 19-100N-50W in Lincoln County, South Dakota on 7/22/2022. Access to the field is easiest at a road approach located along Tallgrass Avenue.

The property owner is Joel Dykstra and he serves as the Point of Contact as well. His email is joel.dykstra@rmbassoc.com. His physical address is 2401 W. Trevi Place, Sioux Falls, SD 57108. His phone is (605) 310-3398. The point of contact for survey and engineering design is Luke Menden with SEH at 3535 Vadnais Center Drive, St. Paul, MN 55110. His email is lukemenden@sehinc.com and his phone is (651) 490-2053. The project name is "85th & Tallgrass" and is referred to as "The Project" within this report.

The field determination was performed on July 22, 2022, by Wetland Specialists Inc. staff (Wayne Bachman, Soil Scientist and Ann Howell, Certified Wetland Delineator). The delineation was performed in accordance with procedures in the 1987 USACE Wetlands Delineation Manual (Wetlands Research Program Technical Report Y-87-1) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) (ERDC/EL TR-10-16). These documents will be referred to as the '87 Manual and the MW Supplement throughout this delineation report.

The MW Supplement is appropriate to use within the boundaries of Land Resource Region M (Central Feed Grain and Livestock Region). LRRM includes MLRA's 102A, 102B, and 102C. This property is found within the boundaries of MLRA 102B. WSI did not find that the project area was within a transitional region and that the correct supplement to use is the Midwest Supplement. Considering the landforms in the local area, the ecosystems present and climatic information WSI concluded that the Midwest Supplement is the correct supplement to use to evaluate potential wetlands within the project area.

Field conditions on 7/22/2022 were hot and windy. Air temperature was above 90 degrees. The field has been planted to corn and was above our heads which made navigating the potential sites difficult but possible given the size of the Review Area (12.84 acres). The area has been intensively farmed for over 80 years. In the past 20 years the crop rotation has been row crop corn and beans with conventional tillage. Climatic and hydrologic conditions are normal for the field date. However normal circumstances are not present due to intensive management of the review area (cropland) along with vegetation removal or management. WSI decided to use offsite information for hydrology because of annual cropping and disturbance plus intensive urbanization on surrounding land. Onsite hydrology is noted where possible and compared to the offsite information for decision concurrence. Analysis of precipitation on the 7/22/2022 field date using procedures in the '87 Manual and the MW Supplement (Ch. 19 Engineering Field Manual), indicated that the field date was within normal climate and hydrologic conditions, but normal circumstance is not present due to the removal and management of vegetation (farming). Direct observation of hydrology and vegetative factors were not used for this reason unless otherwise noted on the data sheets.

The Routine Approach was selected for all potential sample sites because most sample sites were less than 5 acres. A Level 3 approach was chosen to compare on-site information to off-site information due to annual agricultural operations (atypical). All sample points except SP1 and Sp3 are annually farmed, and any onsite vegetation was noted. Sample points 2 and 3 are in the road ditch due to a review of images showing a "wide" ditch. Onsite the width of the ditch is typical, but samples were taken anyway. Long term ecological site plant communities and prevalence index for the specific soil identified by the Soil Scientist. Off-site hydrology was used for the hydrology factor decision. Offsite vegetation preponderance was used for farmed sample points.

Wetlands are shown on the National Wetland Inventory Map (NWI) which is attached to this report (Exhibit 1). One site (PEM1A) is identified on the NWI map, and it was investigated by WSI. All other sites were observed prior to selecting sampling points by the use of offsite: topographic map tools (Exhibit 2), and aerial imagery from 1992-2021 (www.earthexplorer.usgs.gov), Google Earth images, and then by a field. The sampling points were chosen via guidance provided in the '87 Manual and the Midwest Supplement. A Field Base Map (Exhibit 3) was produced based on the off-site tools and on-site reconnaissance. The Field Base Map shows location of sample points.

Land Summary

The project area contains deep well-drained silty and loamy soils that formed in glacial drift and glacial till. The soils are deep well drained and somewhat poorly drained on gently undulating or gently sloping silty soils. The Egan and Viborg soils are on very slight rises and are well drained. The Chancellor soils are in slight swales. Tetonka and Worthing soils are in depressions.

Wetlands Identified by Federal Agencies

There is no existing JD on the project area per communication with the Corps of Engineers in Pierre (Exhibit 4). The area does not have a USDA wetland determination. The USFW Service Wetland Inventory map identified one area as a wetland.

Background Information and Methods

Preliminary Data Gathering and Synthesis ('87 COE Manual Part IV, Section B) information included NWI (Exhibit 1), USGS topographic map tools (Exhibit 2), NRCS Web Soil Survey (Exhibit 5), Hydric Soil List (Exhibit 6) and USDA-NRCS aerial photography and Google Earth. NRCS photography was obtained from the USDA-NRCS Geospatial Data Gateway at www.gdg.sc.egov.usda.gov . Google photography was obtained from Google EarthPro. After review of the off-site information and an on-foot reconnaissance of the project area, WSI decided that the Routine Approach would be used, and a Level 3 (combination of level 1 and 2 methods) inspection was necessary. A Level 3 inspection was chosen due to the agricultural setting (tillage) and time of year. Since the project area contains mostly potential wetlands that are less than 5 acres in size and are uniform in their history a less than 5-acre approach was used.

In the field, sample points' plant communities and landscape were identified and evaluated by traversing the area using and identifying sample observation points on the Field Base Map. Vegetation was noted if there was any onsite, but the vegetative factor decision was based on offsite information since most sample points are in a cropland field. The vegetative factor decision for cropland was based on an ecological site description and calculated prevalence index (NRCS eFOTG) after identification of the specific soil identified to the map unit level found at the sample point (Exhibit 7). However, due to intensive annual crop production, it was decided that the lack of positive indicators on the non-perennially vegetated sites would not be dependable for the vegetative factor due to effects of recent human activities (agricultural crop production), Section F Atypical Situations, Subsection 1 – Vegetation, Step 3, f of the 1987 Manual was utilized. Please refer to the Wetland Determination Data Form – Midwest Region for details. (Exhibit 8) NRCS has calculated a Prevalence Index (PI) for each ecological sites representative plant community.

After any vegetation was noted, the soil pit was observed for hydrology indicators as well as the surrounding area at each sample observation point. Soil from the pit was recorded and measured. Observations were made for primary indicators of hydrology in each pit, but the factor decision was based on offsite methods due to time of year. Hydric Soil Indicators (if any) were recorded on the data sheets. On-site hydrology indicators were recorded and compared to offsite methods due to cropland disturbance.

WSI utilized the 1987 Manual and the MW Supplement and used off-site methods for hydrology for all sample points Per Chapter 5 of the MW Supplement – Difficult Wetland Situations, Step 3, e, f; it refers the reader to a review of aerial photography. Hydrology was evaluated using aerial imagery per off-site procedures outlined in the '87 Manual and the MW Supplement. This was utilized due to the time of year and disturbed conditions. Please see the attached Wetland Hydrology from Aerial Imagery – Recording Form for detailed analysis of wetness signatures from 1992 to 2021 with reference to "dry", "wet", and "normal" rainfall years (Exhibit 9). Page 119 of the MW Supplement outlines the procedure for part f: Evaluating multiple years of aerial photography. The 2021 and 2017 photo were obtained from Google Earth Pro. Photos from 2002 to 2020 were obtained from the USDA-NRCS Geospatial Data Gateway. Photos from 1992 to 2001 were obtained from www.earthexplorer.usgs.gov. WSI obtained the USDA-NRCS calculations of "wet," "normal" and "dry" for most years (Exhibit 10) from the eFOTG website. Photo interpretation by WSI was enhanced by staff experience and formal training from USDA-NRCS and USACE-St Paul Region. Upon completion of the Aerial Imagery recording form, sample points were evaluated to see if they met the 50% hydrology threshold in "normal" year's imagery (Exhibit 9). Results are displayed in Exhibit 11 in table form.

Onsite soil was evaluated in all cases to determine the presence or absence of hydric soil indicators. WSI (Wayne Bachman, Soil Scientist) identified the actual map unit present to accurately apply the correct Ecological Site Index for the vegetative factor. He was unable to identify the actual soil within the ROW.

Soil, Hydrology and Vegetation

Hydric soil indicators were not found at sample points 2, 3, 4 and 5. These sample points did not have positive indicators for hydrology and vegetation, are not identified on the National Wetland Inventory Maps and are not in water collecting landscape position. All other points are discussed below.

Sample point 1 has an onsite hydric soil indicator and the soil identified onsite as a Chancellor silty clay loam. A Chancellor soil is on the Hydric Soil List and has a subirrigated ecological site description with a prevalence index of 3.3630 and therefore, does not support a wetland plant community under normal circumstance. Further, the imagery review revealed that this sample point had a wetness signature 5.8% of the normal images reviewed from 1992 to 2021. This sample point meets the hydric soil factor but does not meet the vegetative or hydrology factors.

Conclusion

Sample point 1, 2, 3, 4 and 5 do not meet all three wetland factors and are not aquatic resources (Exhibit 11).

Upon completion of field observations, it has been determined that the project area contains no wetlands in the 12.84-acre review area. Please refer to the Aquatic Resources Wetland Map (Exhibit 12). This map is based on results from the Level 3 wetland delineation process applied to the project area. Also provided is the Aquatic Resource Wetland Table which provides data for all sample sites. (Exhibit 11)

Please see exhibit 13 for site photographs.

References Cited

Environmental Laboratory. 1987. “Corps of Engineers Wetlands Delineation Manual,” Technical Report Y-87-1, U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, Mississippi.

Environmental Laboratory. 2010. “Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Version 2.0” Wetland Regulatory Assistance Program, U.S. Army Corps of Engineers, Vicksburg, Mississippi

U.S. Department of Agriculture, Natural Resources Conservation Service. 2010. “Field Indicators of Hydric Soils in the United States, Version 7.0” G.W. Hurt, L.M. Vasilas, and C.V. Noble. USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.

USDA-NRCS eFOTG, Section II, Climatic Data WETS table http://agacis.rcc-acis.org/46083/wets

USDA-NRCS eFOTG, Section 1, Wetland Guidance, Rainfall Datahttps://efotg.sc.egov.usda.gov/references/public/SD/2016_RainfallNormalizationTables_SDTG421.pdf

USDA-NRCS Web Soil Survey http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

Soil Survey of Lincoln County, South Dakota, SCS, USDA-NRCS

Aerial photography: www.earthexplorer.usgs.gov

Geospatial Data Gateway: https://gdg.sc.egov.usda.gov/

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296.

Exhibit I: National Wetland Inventory Map (NWI)

U.S. Fish and Wildlife Service
National Wetlands Inventory

85th & Tallgrass

July 8, 2022

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

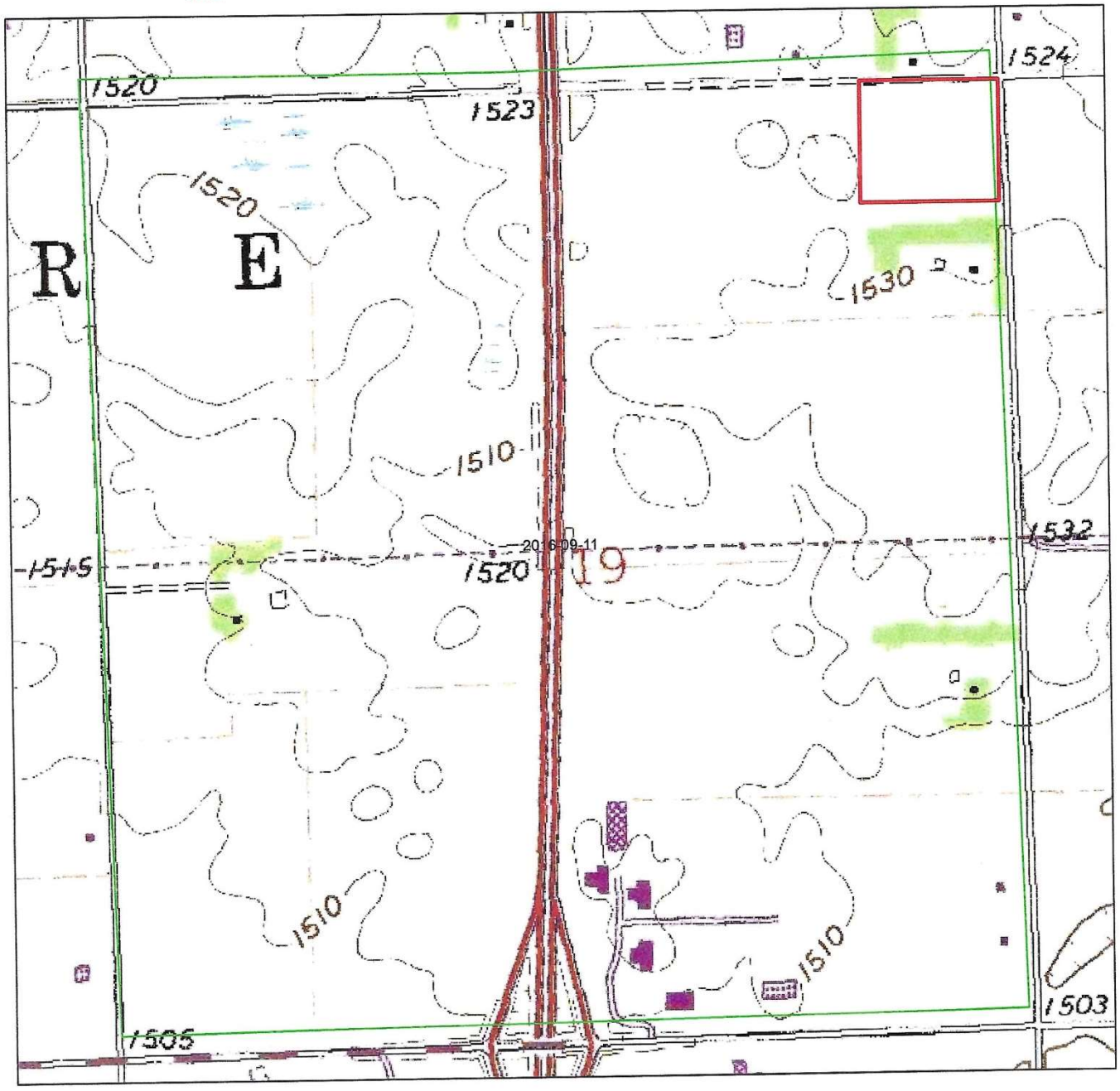
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

Exhibit II: Topography Map

Wetland Specialists Inc.

Producers Name:	85th & Tallgrass
County:	Lincoln
Legal Desc:	**NENE 19-100-50**
Completion Date:	--
Tract:	_____

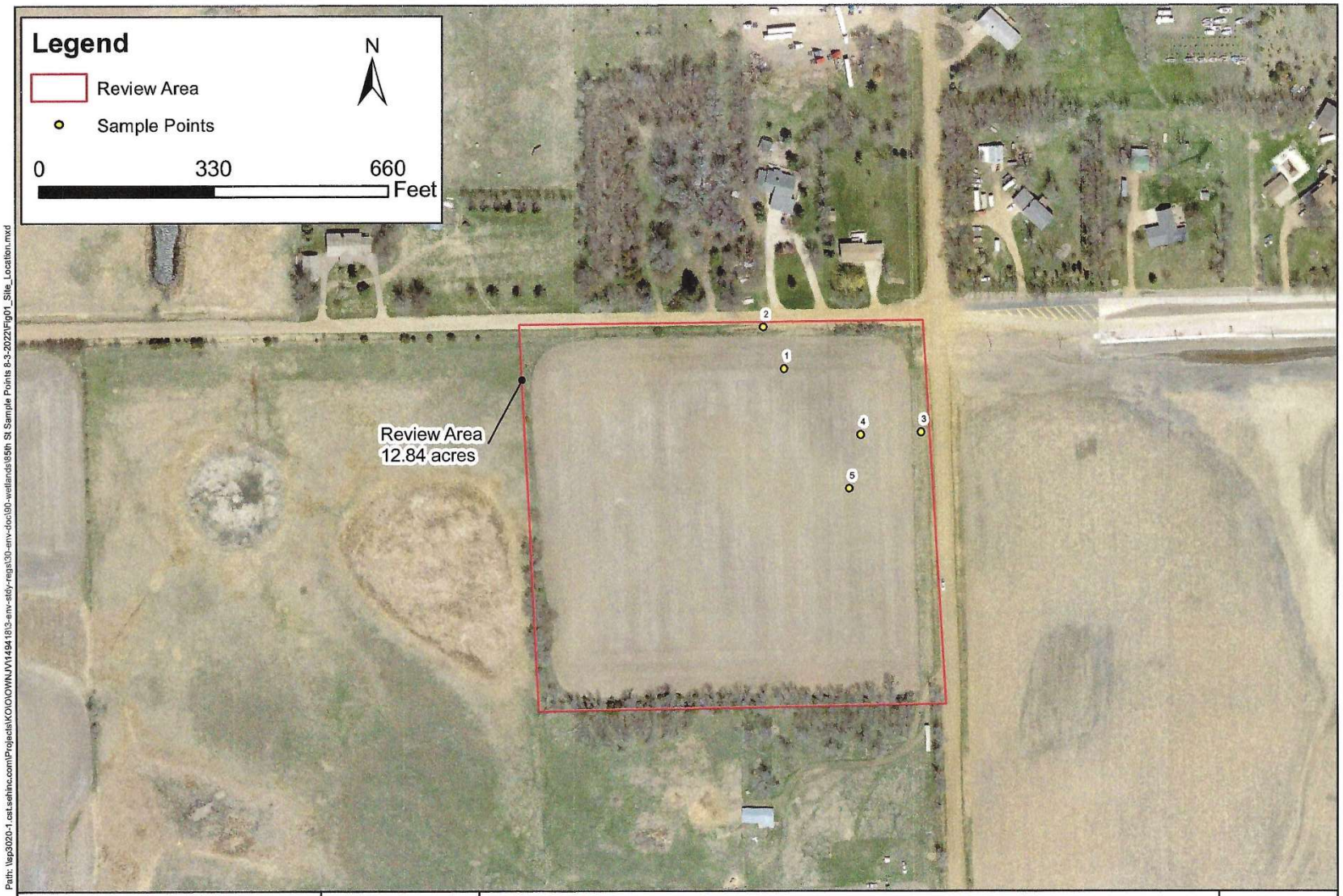


USGS Topographic Map

N

0 215430 860 1,290 1,720 2,150 2,580 Feet

Exhibit III: Base Map



Path: \\sp3020-1.cst.sehinc.com\Projects\KOI\OWNJV\149418\3-env-stdy-regs\30-env-doc\90-wetlands\85th St Sample Points 8-3-2022\Fig01_Site_Location.mxd

SEH

401 E 8th St, Suite 309
Sioux Falls, SD 57103-7032
605.330.7000
877.214.4370 toll free
888.908.8166 fax
www.sehinc.com

Project: OWNJV 149418
Print Date: 8/4/2022

Map by: lmenden
Projection: UTM NAD 83 Zone 14N
Source: Google, SEH, ESRI

85th St and Tallgrass Ave Review Area

85th St and Tallgrass Ave Wetland Delineation
Sioux Falls, Lincoln County, South Dakota

Figure 1

Exhibit IV: COE Communication

RE: 85TH & Tallgrass - Lincoln County

Juhas, Catherine D CIV USARMY CENWO (USA) <Catherine.D.Juhas@usace.army.mil>
Tue 7/12/2022 1:26 PM

To: Karen Cameron-Howell <karen@hydsoil.com>

Hi Karen,

The only action near that area that I'm finding in our database was a JD done for the SD DOT for their I-29/I-229 Interchange and 85th Street upgrades. There's a wetland just to the north of the area you're looking at that was determined to be an isolated wetland. I don't see any JD requests that have been submitted or processed for that area.

Also, FYI – Harry took another position in the Corps and is no longer working in the Regulatory Program. I really miss having him as a coworker, but he's still working out of the Oahe Project Office so it's not all bad. 😉

Thanks,

Cathy Juhas
U.S. Army Corps of Engineers
South Dakota Regulatory Office
28563 Powerhouse Road, Room 118
Pierre, South Dakota 57501

From: Karen Cameron-Howell <karen@hydsoil.com>
Sent: Friday, July 8, 2022 11:43 AM
To: Juhas, Catherine D CIV USARMY CENWO (USA) <Catherine.D.Juhas@usace.army.mil>; Decker, Harry J CIV USARMY CENWO (USA) <Harry.J.Decker@usace.army.mil>
Subject: [URL Verdict: Neutral][Non-DoD Source] 85TH & Tallgrass - Lincoln County

I've been asked to (potentially) do an on-site delineation on the attached area. It is northwest of Tea and just east of the I-229 and I-29 interchange in Lincoln County.
No one has given me an NWO number or map. But they "think" it has expired. There are several companies involved and the original request for a JD has never been developed.

Please let me know if there is an existing JD for this parcel. If so, please send me a copy. Thank you!
NENE 19-100-50 in Lincoln County. Please see attached maps

Karen Cameron-Howell

Wetland Specialists, Inc

(605) 695-3189

www.hydsoil.com

Exhibit V: Web Soil Survey

Soil Map—Lincoln County, South Dakota

USDA **Natural Resources Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

Exhibit VI: Hydric Soil List

Report—Hydric Soil List - All Components

Hydric Soil List - All Components–SD083-Lincoln County, South Dakota					
Map symbol and map unit name	**Component/Local Phase**	**Comp. pct.**	**Landform**	**Hydric status**	**Hydric criteria met (code)**
EcB: Egan-Chancellor silty clay loams, 0 to 4 percent slopes	Egan	50	Till plains	No	—
	Chancellor	30	Drainageways	Yes	2
	Viborg	9	Drainageways	No	—
	Wakonda	4	Rises on swales on till plains	No	—
	Wentworth	4	Till plains	No	—
	Tetonka	2	Closed depressions on till plains	Yes	2,3
	Worthing	1	Potholes on till plains	Yes	2,3
Te: Tetonka silt loam, 0 to 2 percent slopes, frequently ponded	Tetonka-Frequently ponded	85-97	Depressions	Yes	2,3
	Wakonda	3-10	Rims on depressions	No	—
	Chancellor-Frequently flooded	0-5	Drainageways	Yes	2
WeA: Wentworth silty clay loam, 0 to 2 percent slopes	Wentworth	85-95	Hillslopes	No	—
	Chancellor-Frequently flooded	5-10	Drainageways on hillslopes	Yes	2
	Viborg	0-3	Swales on hillslopes	No	—
	Tetonka-Frequently ponded	0-2	Depressions on hillslopes	Yes	2,3
WhA: Wentworth-Chancellor silty clay loams, 0 to 2 percent slopes	Wentworth	55	Till plains	No	—
	Chancellor	25	Drainageways	Yes	2
	Egan	5	Till plains	No	—
	Tetonka	5	Closed depressions on till plains	Yes	2,3
	Viborg	5	Drainageways	No	—
	Wakonda	5	Rises on swales on till plains	No	—

Data Source Information

Soil Survey Area: Lincoln County, South Dakota
Survey Area Data: Version 23, Sep 13, 2021

Exhibit VII: Ecological Site Description (ESD)

Link to Ecological Site Descriptions in EDIT–Lincoln County, South Dakota					
Map symbol and map unit name	**Component**	**Percent of map unit**	**Ecological Site ID**	**Ecological Site Name**	**Hyperlink to Ecological Site Description in EDIT**
EcB—Egan-Chancellor silty clay loams, 0 to 4 percent slopes					
	Egan	50	R102BY010SD	Loamy	https://edit.jornada.nmsu.edu/catalogs/esd/102B/R102BY010SD
	Chancellor	30	R102BY003SD	Subirrigated	https://edit.jornada.nmsu.edu/catalogs/esd/102B/R102BY003SD
	Viborg	9	R102BY020SD	Loamy Overflow	https://edit.jornada.nmsu.edu/catalogs/esd/102B/R102BY020SD
	Wakonda	4	R102BY006SD	Limy Subirrigated	https://edit.jornada.nmsu.edu/catalogs/esd/102B/R102BY006SD
	Wentworth	4	R102BY010SD	Loamy	https://edit.jornada.nmsu.edu/catalogs/esd/102B/R102BY010SD
	Tetonka	2	R102BY004SD	Wet Meadow	https://edit.jornada.nmsu.edu/catalogs/esd/102B/R102BY004SD
	Worthing	1	R102BY001SD	Shallow Marsh	https://edit.jornada.nmsu.edu/catalogs/esd/102B/R102BY001SD
Te—Tetonka silt loam, 0 to 2 percent slopes, frequently ponded					
	Tetonka, frequently ponded	90	R102BY004SD	Wet Meadow	https://edit.jornada.nmsu.edu/catalogs/esd/102B/R102BY004SD
	Wakonda	6	R102BY006SD	Limy Subirrigated	https://edit.jornada.nmsu.edu/catalogs/esd/102B/R102BY006SD
	Chancellor, frequently flooded	4	R102BY003SD	Subirrigated	https://edit.jornada.nmsu.edu/catalogs/esd/102B/R102BY003SD

Link to Ecological Site Descriptions in EDIT–Lincoln County, South Dakota					
Map symbol and map unit name	**Component**	**Percent of map unit**	**Ecological Site ID**	**Ecological Site Name**	**Hyperlink to Ecological Site Description in EDIT**
WeA—Wentworth silty clay loam, 0 to 2 percent slopes					
	Wentworth	90	R102BY010SD	Loamy	https://edit.jornada.nmsu.edu/catalogs/esd/102B/R102BY010SD
	Chancellor, frequently flooded	7	R102BY003SD	Subirrigated	https://edit.jornada.nmsu.edu/catalogs/esd/102B/R102BY003SD
	Viborg	2	R102BY020SD	Loamy Overflow	https://edit.jornada.nmsu.edu/catalogs/esd/102B/R102BY020SD
	Tetonka, frequently ponded	1	R102BY004SD	Wet Meadow	https://edit.jornada.nmsu.edu/catalogs/esd/102B/R102BY004SD
WhA—Wentworth-Chancellor silty clay loams, 0 to 2 percent slopes					
	Wentworth	55	R102BY010SD	Loamy	https://edit.jornada.nmsu.edu/catalogs/esd/102B/R102BY010SD
	Chancellor	25	R102BY003SD	Subirrigated	https://edit.jornada.nmsu.edu/catalogs/esd/102B/R102BY003SD
	Egan	5	R102BY010SD	Loamy	https://edit.jornada.nmsu.edu/catalogs/esd/102B/R102BY010SD
	Tetonka	5	R102BY004SD	Wet Meadow	https://edit.jornada.nmsu.edu/catalogs/esd/102B/R102BY004SD
	Viborg	5	R102BY020SD	Loamy Overflow	https://edit.jornada.nmsu.edu/catalogs/esd/102B/R102BY020SD
	Wakonda	5	R102BY006SD	Limy Subirrigated	https://edit.jornada.nmsu.edu/catalogs/esd/102B/R102BY006SD

Data Source Information

Soil Survey Area: Lincoln County, South Dakota
Survey Area Data: Version 23, Sep 13, 2021

MLRA 102B and 102C Ecological Site Index		
Ecological Sites, Sorted by Site ID	ESD Vegetative Reference Prevalence Index P.I. < 3 meets hydrophytic vegetation indicator test.	
	Great Plains RS	**Midwest RS**
R102BY001SD – Shallow Marsh	1.3498	1.2601
R102BY002SD – Linear Meadow	1.6731	1.6048
R102BY003SD – Subirrigated	3.5445	3.3630
R102BY004SD – Wet Meadow	1.8402	1.8690
R102BY006SD – Limy Subirrigated	4.1673	4.0690
R102BY007SD – Saline Lowland	2.6901	2.6901
R102BY008SD – Sands	Not calculated – drier than other sites	
R102BY009SD – Sandy	Not calculated – drier than other sites	
R102BY010SD – Loamy	Not calculated – drier than other sites	
R102BY011SD – Clayey	Not calculated – drier than other sites	
R102BY012SD – Thin Upland	Not calculated – drier than other sites	
R102BY014SD – Shallow to Gravel	Not calculated – drier than other sites	
R102BY016SD – Very Shallow	Not calculated – drier than other sites	
R102BY020SD – Loamy Overflow	4.1040	3.812
R102BY021SD – Clayey Overflow	3.2677	3.2899
R102BY036SD – Saline Subirrigated	3.7308	3.5684

Exhibit VIII: Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 85th & Tallgrass City/County: Tea Sampling Date: 7/22/2022

Applicant/Owner: Joel Dykstra State: SD Sampling Point: SP-1

Investigator(s): WSI (W. Bachman & Ann Howell) Section, Township, Range: 19-100-50

Landform (hillside, terrace, etc.): footslope Local relief (concave, convex, none): plain

Slope (%): 2 Lat: 48* 28' 31.798 Long: 96* 47' 17.471 Datum:

Soil Map Unit Name: EcB (Egan-Chancellor silty clay loams) NWI classification: PEM1Ad

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ____ (If no, explain in Remarks.)

Are Vegetation x , Soil ____ , or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____ , Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No x	**Is the Sampled Area within a Wetland?** Yes ____ No x
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No x	

Remarks:
SP-1 is planted to corn and has been in crop production for 50+ years. NC not present, Atypical methods. SP1 is connected to the road ditch, however the road ditch rises in each direction (E-W) so water does not move from the wetland location.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: ____)			
1. *Cornus*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	=Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks: (Include photo numbers here or on a separate sheet.)
Section F, Subsection 1,Step 3e, NRCS Ecological Site Index for Chancellor silty clay loam - subirrigated ESD, PI= 3.3630, (R102BY003SD) A similar site was not used due to intensive ag use and urban development in the local area.

SOIL

Sampling Point: SP-1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1	100					Loamy/Clayey	sicl, no redox
4-14	10YR 2/1	96	10YR 4/6	4	C	M	Loamy/Clayey	Prominent redox concentrations
14-28	10YR 3/2	91	10YR 4/6	1	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks:

This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

Soil identified in situ by W. Bachman is a Chancellor silty clay loam.

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): ____

Wetland Hydrology Present? Yes ____ No x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Per '87 Manual and MW Supplement, offsite methods are due to disturbance and time of year, NC, NEC. Per Ch 5 MW Supplement-Difficult Wetland Situations, Step 3, f, b review of aerial imagery using WETS table and Wet Hydrology from Aerial Imagery form, SP has 5.8% occurrence.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 85th & Tallgrass City/County: Tea Sampling Date: 7/22/2022

Applicant/Owner: Joel Dykstra State: SD Sampling Point: SP-2

Investigator(s): WSI (W. Bachman & Ann Howell) Section, Township, Range: 19-100-50

Landform (hillside, terrace, etc.): footslope Local relief (concave, convex, none): plain

Slope (%): 2 Lat: 48* 28' 33.912 Long: 96* 47' 15.822 Datum:

Soil Map Unit Name: WeA (Wentworth silty clay loam) NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ____ (If no, explain in Remarks.)

Are Vegetation x , Soil ____ , or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____ , Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No x	**Is the Sampled Area within a Wetland?** Yes ____ No x
Hydric Soil Present?	Yes ____	No x	
Wetland Hydrology Present?	Yes ____	No x	

Remarks:
SP-2 is in the road ditch that has recently been seeded. NC not present, Atypical methods.Sample point was selected after viewing 2017 image where the road ditch seemed emphasized. Due diligence requires a sample to be sure we are not missing a potential wetland. Results consitent with

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Bromus inermis*	100	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=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: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	100 (A)		400 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks: (Include photo numbers here or on a separate sheet.)
MW Supplement page 105: positive indicators for wetland hydrology and hydric soil are not present, sp2 does not support a wetland plant community.

SOIL

Sampling Point: SP-2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y 4/3	100					Loamy/Clayey	clay loam, no redox
3-10	10YR 3/1	100					Loamy/Clayey	silty clay loam, no redox
10-29	2.5Y 4/3	100					Loamy/Clayey	clay loam, no redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No x

Remarks:

This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

Soil examined in situ has been disturbed with cut and fill layers in the profile. Does not match any soil in the soil survey. The soil profile found does not meet any field hydric soil indicators.

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): _____

Wetland Hydrology Present? Yes ____ No x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Per '87 Manual and MW Supplement, offsite methods are due to disturbance and time of year, NC, NEC. Per Ch 5 MW Supplement-Difficult Wetland Situations, Step 3, f, b review of aerial imagery using WETS table and Wet Hydrology from Aerial Imagery form, SP has 0% occurrence.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 85th & Tallgrass City/County: Tea Sampling Date: 7/22/2022

Applicant/Owner: Joel Dykstra State: SD Sampling Point: SP-3

Investigator(s): WSI (W. Bachman & Ann Howell) Section, Township, Range: 19-100-50

Landform (hillside, terrace, etc.): sideslope Local relief (concave, convex, none): concave

Slope (%): 2 Lat: 48* 28' 29.171 Long: 96* 47' 15.791 Datum:

Soil Map Unit Name: WhA (Wentworth-Chancellor silty clay loams) NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)

Are Vegetation x, Soil x, or Hydrology x significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No x	**Is the Sampled Area within a Wetland?** Yes No x
Hydric Soil Present?	Yes	No x	
Wetland Hydrology Present?	Yes	No x	

Remarks:
SP-3 is in the road ditch that has recently been seeded. NC not present, Atypical methods and CH 5 MW Supplement (page 105). Positive indicators of wetland hydrology and hydric soil are not present. SP3 does not meet vegetation and vegetation definition.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Bromus inermis*	100	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	=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: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	100 (A)		400 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No x

Remarks: (Include photo numbers here or on a separate sheet.)
87 Manual and MW supplement: Does not meet a positive indicator of wetland hydrology and does not have a hydric soil, then not probable that this SP would meet a positive indicator of vegetation and the definition.

SOIL

Sampling Point: SP-3

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 2/1	100					Loamy/Clayey	sicl, no redox
7-29	10YR 3/1	100					Loamy/Clayey	sicl, no redox
29-34	2.5Y 4/2	100					Loamy/Clayey	sicl, no redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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[3]:

___ Coast Prairie Redox (A16)
___ Iron-Manganese Masses (F12)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes ____ No x

Remarks:
This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)
Soil examined in situ has been disturbed with cut and fill layers in the profile. Does not match any soil in the soil survey.

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? Yes ____ No x Depth (inches): ____
(includes capillary fringe)

Wetland Hydrology Present? Yes ____ No x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Per '87 Manual and MW Supplement, offsite methods are due to disturbance and time of year, NC, NEC. Per Ch 5 MW Supplement-Difficult Wetland Situations, Step 3, f, b review of aerial imagery using WETS table and Wet Hydrology from Aerial Imagery form, SP has 0% occurrence.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 85th & Tallgrass City/County: Tea Sampling Date: 7/22/2022

Applicant/Owner: Joel Dykstra State: SD Sampling Point: SP-4

Investigator(s): WSI (W. Bachman & Ann Howell) Section, Township, Range: 19-100-50

Landform (hillside, terrace, etc.): sideslope Local relief (concave, convex, none): convex

Slope (%): 1 Lat: 48* 28' 28.979 Long: 96* 47' 15.791 Datum:

Soil Map Unit Name: EcB (Egan-Chancellor silty clay loams) NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ____ (If no, explain in Remarks.)

Are Vegetation x , Soil ____ , or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____ , Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No x	**Is the Sampled Area within a Wetland?** Yes ____ No x
Hydric Soil Present?	Yes ____	No x	
Wetland Hydrology Present?	Yes ____	No x	

Remarks:
SP-4 is planted to corn and has been in crop production for 50+ years. NC not present, Atypical methods.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: ____)			
1. *Corn*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	=Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks: (Include photo numbers here or on a separate sheet.)
Section F, Subsection 1,Step 3e, NRCS Ecological Site Index for Viborg silty clay loam - loamy ESD, PI> 3.0, (R102BY020SD) A similar site was not used due to intensive ag use and urban development in the local area.

SOIL

Sampling Point: SP-4

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 2/1	100					Loamy/Clayey	sicl, no redox
13-30	10YR 3/1	100					Loamy/Clayey	sicl, no redox
30-35	2.5Y 4/2	100					Loamy/Clayey	sicl, no redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No x

Remarks:

This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

Soil identified in situ by W. Bachman is a Viborg silty clay loam.

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): ____

Wetland Hydrology Present? Yes ____ No x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Per '87 Manual and MW Supplement, offsite methods are due to disturbance and time of year, NC, NEC. Per Ch 5 MW Supplement-Difficult Wetland Situations, Step 3, f, b review of aerial imagery using WETS table and Wet Hydrology from Aerial Imagery form, SP has 11.8% occurrence.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 85th & Tallgrass City/County: Tea Sampling Date: 7/22/2022

Applicant/Owner: Joel Dykstra State: SD Sampling Point: SP-5

Investigator(s): WSI (W. Bachman & Ann Howell) Section, Township, Range: 19-100-50

Landform (hillside, terrace, etc.): sideslope Local relief (concave, convex, none): convex

Slope (%): 1 Lat: 48* 28' 28.428 Long: 96* 47' 16.451 Datum:

Soil Map Unit Name: WhA (Wentworth-Chancellor silty clay loams) NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ____ (If no, explain in Remarks.)

Are Vegetation x , Soil ____ , or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____ , Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No x	**Is the Sampled Area within a Wetland?** Yes ____ No x
Hydric Soil Present?	Yes ____	No x	
Wetland Hydrology Present?	Yes ____	No x	

Remarks:
SP-5 is planted to corn and has been in crop production for 50+ years. NC not present, Atypical methods.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		

Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		

Herb Stratum (Plot size: ____)			
1. *Corn*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	____ =Total Cover		

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ =Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species ____	x 1 =	____
FACW species ____	x 2 =	____
FAC species ____	x 3 =	____
FACU species ____	x 4 =	____
UPL species ____	x 5 =	____
Column Totals: ____ (A)		____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks: (Include photo numbers here or on a separate sheet.)
Section F, Subsection 1,Step 3e, NRCS Ecological Site Index for Viborg silty clay loam - loamy ESD, PI> 3.0, (R102BY020SD) A similar site was not used due to intensive ag use and urban development in the local area.

SOIL

Sampling Point: SP-5

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/1	100					Loamy/Clayey	sicl, no redox
8-18	10YR 3/1	100					Loamy/Clayey	sicl, no redox
18-32	2.5Y 4/2	100					Loamy/Clayey	sicl, no redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No x

Remarks:

This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

Soil identified in situ by W. Bachman is a Viborg silty clay loam.

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): ____

Wetland Hydrology Present? Yes ____ No x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Per '87 Manual and MW Supplement, offsite methods are due to disturbance and time of year, NC, NEC. Per Ch 5 MW Supplement-Difficult Wetland Situations, Step 3, f, b review of aerial imagery using WETS table and Wet Hydrology from Aerial Imagery form, SP has 0% occurrence.

Exhibit IX: Aerial Imagery Recording Form

Exhibit 1

Field data sheet reference (if applicable): _____

Wetland Hydrology from Aerial Imagery – Recording Form

Project Name: 85th & Tallgrass Date: 8/4/22 County: LINCOLN

Investigator: WSI (K. Cameron-Howell) Legal Description (T, R, S): 10ON 50W NENE 19

Summary Table

Date Image Taken (M-D-Y)	Image Source	Climate Condition (wet, dry, normal)[1]	Image Interpretation(s)				
			Area: 1	Area: 2	Area: 3	Area: 4	Area: 5
5/2021	GoogleEarthPro	Normal	NSS	NSS	NSS	NSS	NSS
9/5/20	USDA-NRCS	Dry	NSS	NSS	NSS	NSS	NSS
9/12/18	USDA-NRCS	Wet	SS	NSS	NSS	SS	NSS
5/17	GoogleEarthPro	Normal	NSS	NSS	NSS	SS	NSS
9/11/16	USDA-NRCS	Normal	NSS	NSS	NSS	SS	NSS
9/16/14	USDA-NRCS	Wet	NSS	NSS	NSS	NSS	NSS
7/29/12	USDA-NRCS	Normal	NSS	NSS	NSS	NSS	NSS
8/15/10	USDA-NRCS	Wet	WS	NSS	NSS	NSS	NSS
7/29/08	USDA-NRCS	Normal	NSS	NSS	NSS	WS	NSS
7/6/06	USDA-NRCS	Normal	NSS	NSS	NSS	NSS	NSS
7/9/05	USDA-NRCS	Wet	NSS	NSS	NSS	NSS	NSS
7/21/04	USDA-NRCS	Normal	NSS	NSS	NSS	NSS	NSS
8/14/03	USDA-NRCS	Normal	NSS	NSS	NSS	NSS	NSS
8/5/02	USDA-NRCS	Normal	NSS	NSS	NSS	NSS	NSS
7/13/01	USDA-NRCS	Normal	NSS	NSS	NSS	NSS	NSS
8/7/00	USDA-NRCS	Normal	NSS	NSS	NSS	NSS	NSS
7/30/99	USDA-NRCS	Wet	NS	NSS	NSS	SS	NSS
8/21/98	USDA-NRCS	Normal	NSS	NSS	NSS	NSS	NSS
7/97	USDA-NRCS	Normal	NSS	NSS	NSS	NSS	NSS
7/96	USDA-NRCS	Normal	NSS	NSS	NSS	NSS	NSS
8/95	USDA-NRCS	Normal	SS	NSS	NSS	NSS	NSS
8/94	USDA-NRCS	Normal	NSS	NSS	NSS	NSS	NSS
8/93	USDA-NRCS	Wet	SS	NSS	NSS	SS	NSS
8/92	USDA-NRCS	Normal	NSS	NSS	NSS	SS	NSS
Normal Climate Condition			Area: 1	Area: 2	Area: 3	Area: 4	Area: 5
Number			17	17	17	17	17
Number with wet signatures			1	0	0	2	0
Percent with wet signatures			5.8%	0%	0%	11.8%	0%

KEY

WS - wetland signature	SS - soil wetness signature	CS - crop stress
NC - not cropped	AP - altered pattern	NV - normal vegetative cover
DO - drowned out	SW - standing water	NSS – no soil wetness signature
Other labels or comments:		

- Use above keyto label image interpretations. It is imperative that the reviewer read and understand the guidance associated with the use of these labels. If alternate labels are used, indicate in box above.
- If less than five (5) images taken during normal climate conditions are available, use an equal number of images taken during wet and dry climate conditions and use as many images as you have available. Describe the results using this methodology in your report.

[1] Use [illegible] to determine climate condition when image was taken.

Date 8/4/2022

Weather Station SF Airport

County Lincoln

Soil Name

Photo Date 5/1/2017

Landowner 85th & Tallgrass

Legal Location 19-100-50

State SD

Growing Season

		Long-term rainfall records				Month	Condition
		30% <	Normal	30% >	Rainfall	Weight	Value
1st Prior month	April	1.64	2.65	3.20	2.87	3	8.61
2nd Prior month	March	1.03	1.81	2.20	0.54	2	1.08
3rd Prior month	February	0.26	0.51	0.62	0.49	1	0.49
		7.24		14.62		SUM	10.18
							NORMAL

Blank

Date 8/4/2022

Weather Station SF Airport

County Lincoln

Soil Name

Photo Date 9/5/2020

Landowner 85th & Tallgrass

Legal Location 19-100-50

State SD

Growing Season

		Long-term rainfall records				Month	Condition
		30% <	Normal	30% >	Rainfall	Weight	Value
1st Prior month	August	1.86	3.01	3.64	1.23	3	3.69
2nd Prior month	July	1.84	2.93	3.54	2.21	2	4.42
3rd Prior month	June	2.30	3.49	4.19	3.42	1	3.42
		11.56		22.19		SUM	11.53
							DRY

Blank

Date 8/4/2022

Weather Station SF Airport

County Lincoln

Soil Name

Photo Date 7/22/2022

Landowner 85th & Tallgrass

Legal Location 19-100-50

State SD

Growing Season

		Long-term rainfall records				Month	Condition
		30% <	Normal	30% >	Rainfall	Weight	Value
1st Prior month	June	2.30	3.49	4.19	1.95	3	5.85
2nd Prior month	May	2.15	3.39	4.09	4.30	2	8.6
3rd Prior month	April	1.64	2.65	3.20	2.20	1	2.2
		12.84		23.95		SUM	16.65
							NORMAL

Blank

Exhibit X: Rainfall Data

Rainfall Data
Sioux Falls AP
Station #SD7667
Minnehaha County, SD

Portion of the table to be used with the PrecipCategories tool.

	Monthly Rainfall Totals in Inches							Monthly Weighted Totals					Slide Indicator Status					
Year-	March-	April-	May-	June-	July-	Aug-	Sept-	June_	July_	Aug_	Sept_	Oct_	June	July	Aug	Sept.	Oct.	Year
1937	1.36	5.19	3.96	3.20	2.63	5.06	1.48	23.62	22.71	18.25	23.64	17.19	WET	NORM	NORM	WET	NORM	1937
1939	0.51	1.67	4.19	6.44	3.00	4.04	1.12	16.42	29.37	26.07	24.56	14.44	NORM	WET	WET	WET	NORM	1939
1940	3.44	3.39	0.39	5.25	2.49	4.17	1.27	11.39	19.92	18.36	22.74	14.64	NORM	NORM	NORM	WET	NORM	1940
1941	0.93	5.45	1.71	3.81	1.64	0.77	1.70	16.96	20.30	14.25	9.40	8.28	NORM	NORM	NORM	DRY	DRY	1941
1956	2.19	1.29	1.31	6.86	4.02	4.09	0.29	8.70	24.49	27.09	27.17	13.07	DRY	WET	WET	WET	NORM	1956
1958	0.95	2.55	0.81	1.48	3.52	0.61	2.11	8.48	8.61	14.33	10.35	11.07	DRY	DRY	NORM	DRY	NORM	1958
1962	1.72	1.70	6.07	3.98	5.50	2.77	3.58	23.33	25.78	30.53	23.29	21.78	WET	WET	WET	WET	WET	1962
1964	2.12	4.03	1.29	1.68	4.03	3.87	4.06	14.05	11.65	16.74	21.35	23.95	NORM	DRY	NORM	NORM	WET	1964
1966	0.70	1.71	1.94	2.68	1.54	2.12	6.34	9.94	13.63	11.92	12.12	24.80	DRY	NORM	DRY	NORM	WET	1966
1968	0.61	4.34	2.69	4.10	2.37	1.70	4.01	17.36	22.02	18.00	13.94	17.80	NORM	NORM	NORM	NORM	NORM	1968
1970	2.03	3.75	4.83	3.81	2.98	0.53	3.14	24.02	24.84	21.39	11.36	13.46	WET	WET	NORM	NORM	NORM	1970
1971	0.85	1.59	1.06	6.10	2.92	0.71	3.23	7.21	22.01	22.02	14.07	14.03	DRY	NORM	NORM	NORM	NORM	1971
1972	0.97	2.73	7.25	2.09	3.49	2.65	1.75	28.18	23.50	21.90	17.02	14.04	WET	NORM	NORM	NORM	NORM	1972
1976	1.60	2.15	1.02	1.02	1.53	1.31	0.76	8.96	7.25	7.65	8.01	6.43	DRY	DRY	DRY	DRY	DRY	1976
1979	3.47	2.75	4.90	3.01	3.13	4.35	4.03	23.67	21.58	20.31	22.32	23.92	WET	NORM	NORM	WET	WET	1979
1980	0.70	0.77	2.52	2.17	1.63	2.92	0.79	9.80	12.32	11.75	14.19	9.84	DRY	DRY	DRY	NORM	NORM	1980
1981	1.86	0.58	0.61	3.90	3.89	2.28	0.50	4.85	13.50	20.08	18.52	9.95	DRY	NORM	NORM	NORM	NORM	1981
1982	1.17	1.87	4.72	1.18	4.60	5.23	3.49	19.07	14.85	20.88	26.07	25.53	NORM	NORM	NORM	WET	WET	1982
1983	3.35	2.88	2.92	6.75	1.82	2.00	1.92	17.87	28.97	21.88	16.39	11.58	NORM	WET	NORM	NORM	NORM	1983
1984	1.83	5.79	2.95	8.43	1.63	0.76	1.62	22.26	36.98	24.70	13.97	8.01	WET	WET	WET	NORM	DRY	1984
1985	2.37	5.18	3.29	2.52	2.70	4.07	3.34	22.60	19.32	16.43	20.13	20.86	WET	NORM	NORM	NORM	WET	1985
1986	1.50	5.15	2.42	3.93	2.59	2.77	9.26	19.06	21.78	18.05	17.42	35.91	NORM	NORM	NORM	NORM	WET	1986
1987	3.27	0.28	2.94	1.78	3.16	1.36	2.05	12.65	11.50	15.98	12.18	12.03	NORM	DRY	NORM	NORM	NORM	1987
1988	0.63	3.00	1.54	0.91	0.49	4.02	4.39	11.25	8.81	4.83	13.95	21.70	NORM	DRY	DRY	NORM	WET	1988
1989	1.07	1.59	1.42	2.50	1.37	2.46	3.38	8.51	11.93	10.53	12.62	16.43	DRY	DRY	DRY	NORM	NORM	1989
1990	1.57	1.86	4.07	4.86	1.77	1.17	0.47	17.50	24.58	19.10	11.91	5.52	NORM	WET	NORM	NORM	DRY	1990
1991	0.86	2.21	6.20	6.36	2.26	1.41	3.95	23.88	33.69	25.70	15.11	16.93	WET	WET	WET	NORM	NORM	1991
1992	2.36	2.01	1.80	2.44	8.41	5.29	3.06	11.78	12.93	31.91	35.13	28.17	NORM	NORM	WET	WET	WET	1992
1993	2.04	2.61	8.26	6.43	7.86	3.10	1.88	32.04	38.42	44.70	31.45	19.70	WET	WET	WET	WET	NORM	1993
1994	0.20	3.34	1.26	6.03	1.70	2.66	2.36	10.66	23.95	18.42	17.41	14.10	NORM	NORM	NORM	NORM	NORM	1994
1995	4.06	5.83	4.76	2.70	2.55	5.11	1.86	30.00	23.45	17.81	23.13	18.35	WET	NORM	NORM	WET	NORM	1995
1996	0.82	0.55	5.27	1.14	0.96	1.79	2.82	17.73	14.51	10.43	8.43	13.00	NORM	NORM	DRY	DRY	NORM	1996
1997	0.23	2.43	3.58	3.77	2.94	1.58	1.59	15.83	20.90	19.94	14.39	10.87	NORM	NORM	NORM	NORM	NORM	1997
1998	4.08	3.57	1.92	4.52	2.66	3.29	1.19	16.98	20.97	18.94	19.71	12.81	NORM	NORM	NORM	NORM	NORM	1998
1999	1.15	4.32	6.20	2.57	4.81	0.80	0.84	28.39	24.43	25.77	14.59	8.93	WET	WET	WET	NORM	DRY	1999
2000	0.91	2.27	5.56	3.26	3.22	3.17	1.34	22.13	23.17	21.74	19.21	13.58	WET	NORM	NORM	NORM	NORM	2000
2001	0.78	6.97	1.92	3.13	5.88	1.37	2.25	20.48	20.20	25.82	19.00	15.37	NORM	NORM	WET	NORM	NORM	2001
2002	1.41	2.29	1.82	2.57	1.80	8.26	1.39	11.45	13.64	12.36	30.95	22.49	NORM	NORM	NORM	WET	WET	2002
2003	0.22	3.69	2.64	3.54	1.64	1.62	4.74	15.52	19.59	14.64	12.28	19.50	NORM	NORM	NORM	NORM	NORM	2003
2004	2.03	1.28	8.10	6.00	1.40	3.58	5.12	28.89	35.48	24.30	19.54	23.92	WET	WET	WET	NORM	WET	2004
2005	1.53	3.33	5.22	3.72	4.59	1.36	4.76	23.85	24.93	26.43	16.98	21.59	WET	WET	WET	NORM	WET	2005
2006	2.67	6.17	1.02	3.81	0.68	4.33	3.88	18.07	19.64	10.68	18.16	20.98	NORM	NORM	DRY	NORM	WET	2006
2007	4.97	1.93	2.63	3.98	0.32	6.18	2.27	16.72	19.13	11.55	23.16	19.49	NORM	NORM	DRY	WET	NORM	2007
2008	1.34	2.68	3.34	3.95	2.52	1.91	1.78	16.72	21.21	18.80	14.72	11.68	NORM	NORM	NORM	NORM	NORM	2008
2009	1.31	1.95	1.43	3.07	3.71	1.93	1.21	9.50	14.02	18.70	16.28	11.20	DRY	NORM	NORM	NORM	NORM	2009
2010	1.02	2.65	2.03	7.83	8.55	6.26	4.48	12.41	30.20	43.34	43.71	34.45	NORM	WET	WET	WET	WET	2010
2011	0.74	3.09	5.42	4.26	5.76	1.40	0.20	23.18	26.71	31.22	19.98	9.16	WET	WET	WET	NORM	DRY	2011
2012	0.77	2.40	4.60	0.74	0.24	1.75	1.14	19.37	13.82	6.80	6.47	7.16	NORM	NORM	DRY	DRY	DRY	2012
2013	0.88	3.13	6.95	4.26	0.60	3.23	0.77	27.99	29.87	17.31	15.17	9.37	WET	WET	NORM	NORM	DRY	2013
2014	0.71	1.17	2.11	13.70	0.80	4.95	2.28	9.38	46.49	31.91	30.15	17.54	DRY	WET	WET	WET	NORM	2014
2015	0.33	1.00	4.00	4.29	4.19	6.57	3.24	14.33	21.87	25.15	32.38	27.05	NORM	NORM	WET	WET	WET	2015
2016	2.09	4.62	3.11	1.72	2.32	2.32	7.55	20.66	16.00	13.51	13.32	29.61	NORM	NORM	NORM	NORM	WET	2016
2017	0.54	2.87	3.23	3.29	1.13	5.42	1.62	15.97	19.20	13.20	21.81	16.83	NORM	NORM	NORM	NORM	NORM	2017
2018	2.06	3.34	2.48	7.29	4.94	5.33	7.32	16.18	30.17	31.88	33.16	37.56	NORM	WET	WET	WET	WET	2018

Month	30% Lower Bound	N	30% Upper Bound
March	0.99	1.81	2.20
April	1.59	2.65	3.21
May	2.09	3.39	4.11
June	2.24	3.49	4.20
July	1.79	2.93	3.55
August	1.80	3.01	3.65
Sept.	1.40	2.58	3.15
Jun-MAM	10.44	17.28	20.95
Jul-JMA	12.49	19.90	24.03
Aug-JJM	11.94	19.16	23.16
Sep-AJJ	11.22	18.38	22.25
Oct-SAJ	9.59	16.69	20.30

Normals are for 1971-2000 data

March	1.81
April	2.65
May	3.39
June	3.49
July	2.93
August	3.01
Sept.	2.58

NOTE:
Sioux Falls AP NWS Station (SD7667) has not collected data as of 2012.

Sioux Falls AP NWS Station (SD7667) has been replaced with Sioux Falls Foss FLD NWS Station (SD944).

Exhibit XI: Aquatic Resource Table

Wetland Determination Data Form Summary Table

	1	2	3	4	5
Veg					
Offsite	No	-	-	No	No
Soil					
Onsite	Yes	No	No	No	No
Hydrology					
Onsite	No				
Offsite	No 5.8%	No 0%	No 0%	No 11.8%	No 0%
NWI	PEMIAd	-	-	-	-
Aquatic Resource?	No			No	No

Exhibit XII: Aquatic Resource Map

Wetland Specialists Inc.

Producers Name: 85th & Tallgrass
County: Lincoln
Legal Desc: **NENE 19-100-50**
Completion Date: - -
Tract: _____

Aquatic Resource Map

N

0 70 140 280 420 560 700 840
Feet

Exhibit XIII: Site Photographs

Photo 1

Date Taken: 7/22/22

Sample Unit: 1

Latitude: 43.28’30.798

Longitude: 96.47’17.471

Photo 2

Date Taken: 7/22/22

Sample Unit: 2

Latitude: 43.28’33.912

Longitude: 96.47’15.822

Photo 3

Date Taken: 7/22/22

Sample Unit: 3

Latitude: 43.28’29.171

Longitude: 96.47’14.340

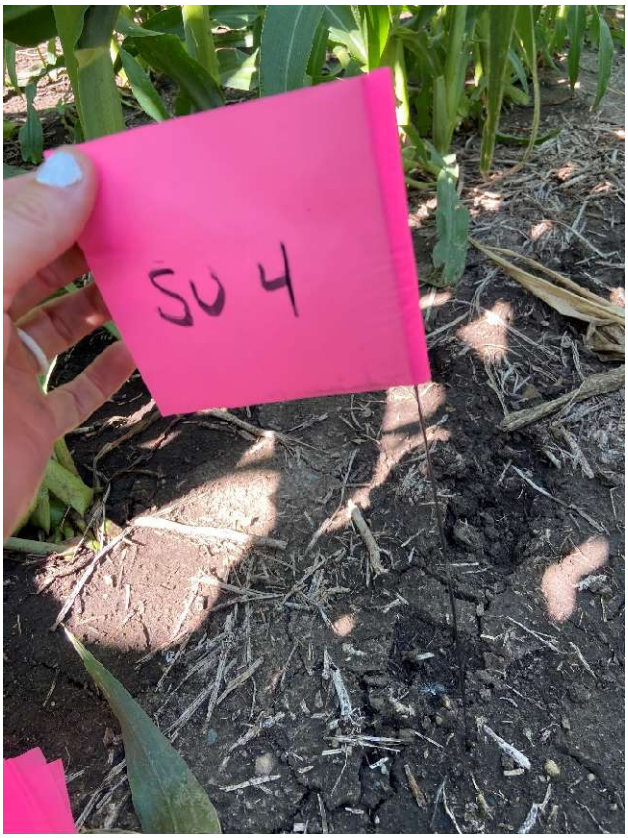


Photo 4

Date Taken: 7/22/22

Sample Unit: 4

Latitude: 43.28’28.979

Longitude: 96.47’15.791

Photo 5

Date Taken: 7/22/22

Sample Unit: 5

Latitude: 43.28’28.428

Longitude: 96.47’16.451

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

Building a Better World for All of Us®

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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Wetland Delineation Report

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

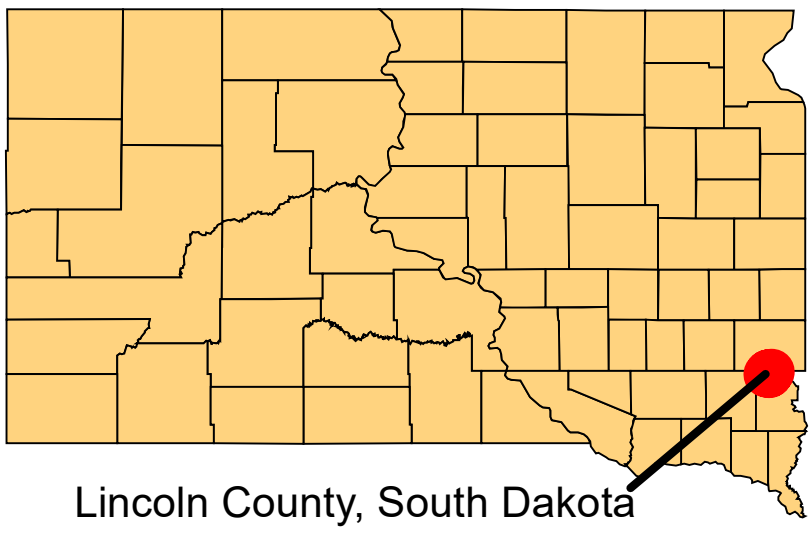
Legend

Revised Area of Investigation

0 2 4 Miles

N W E S

Lincoln County, South Dakota



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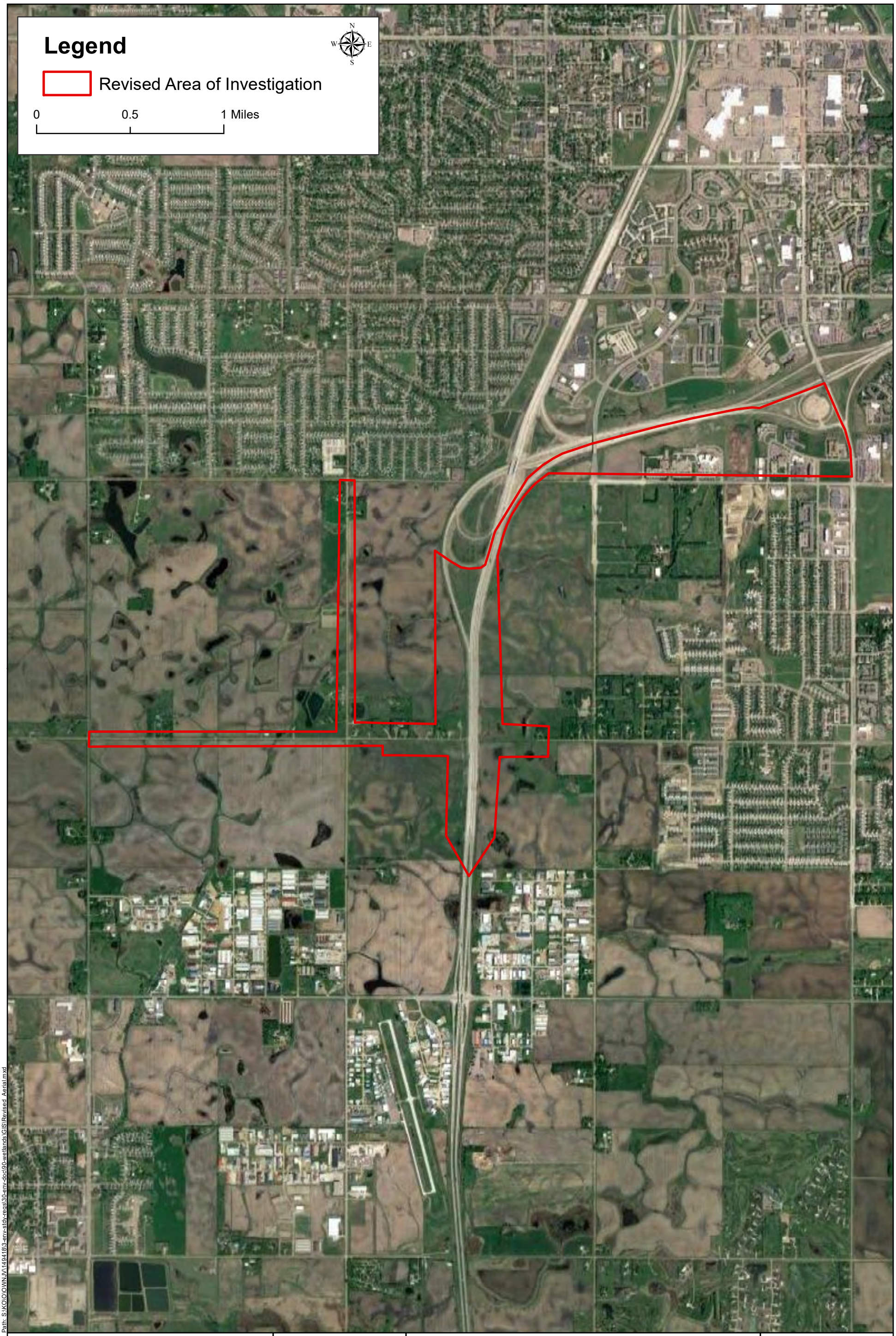
SEH 3535 VADNAIS CENTER DR. ST. PAUL, MN 55110 PHONE: (651) 490-2000 FAX: (888) 908-8166 TF: (800) 325-2055 www.sehinc.com	Project: OWNJV 149418 Print Date: 9/14/2019 Map by: bnelson Projection: UTM NAD 83 Zone 14N Source: SEH, ESRI, SDDOT, USGS, FWS, NRCS, Google	***SITE LOCATION*** 85th Street Interchange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

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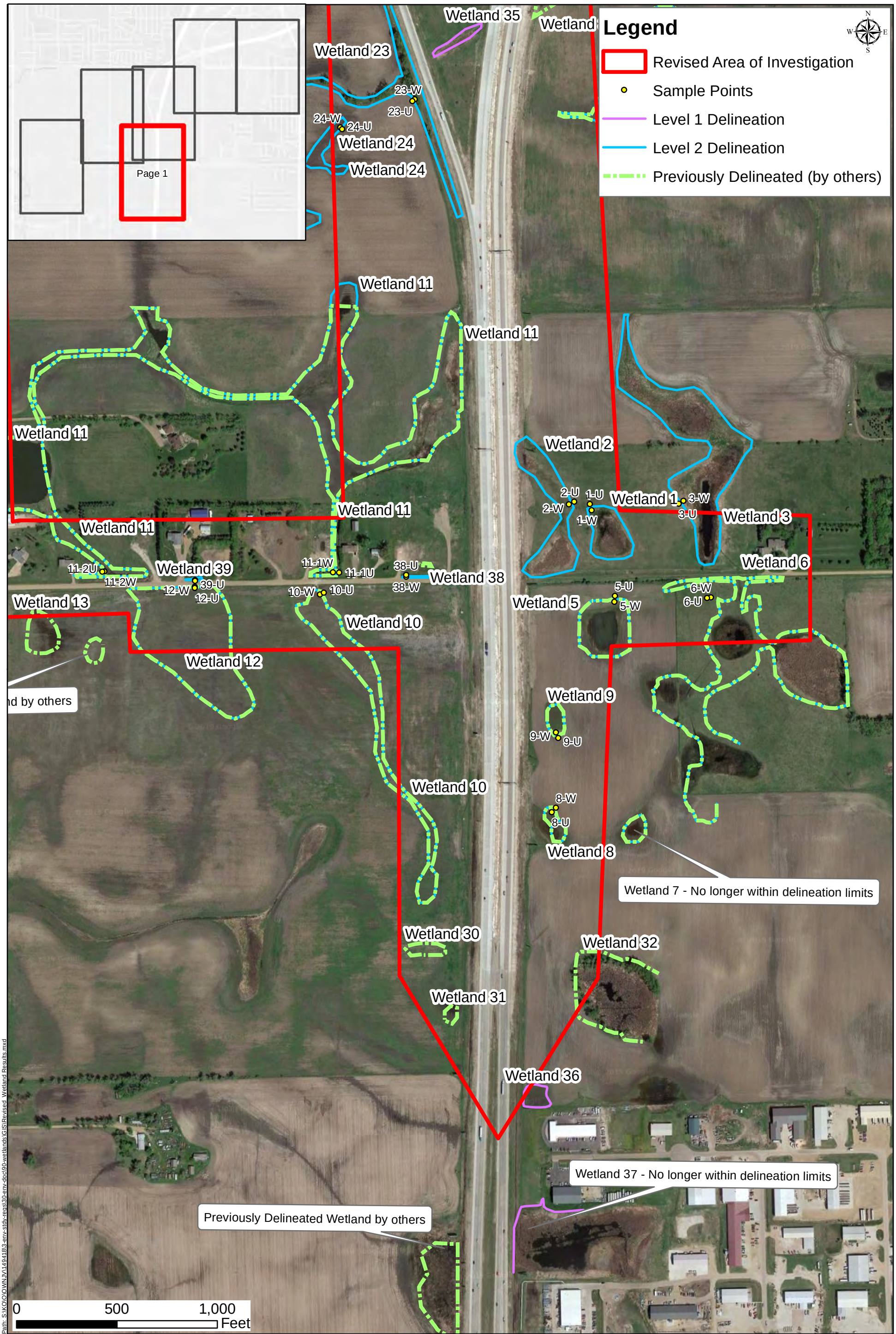
LIDAR TOPOGRAPHY
85th Street Interchange
Lincoln County, South Dakota

Figure 5



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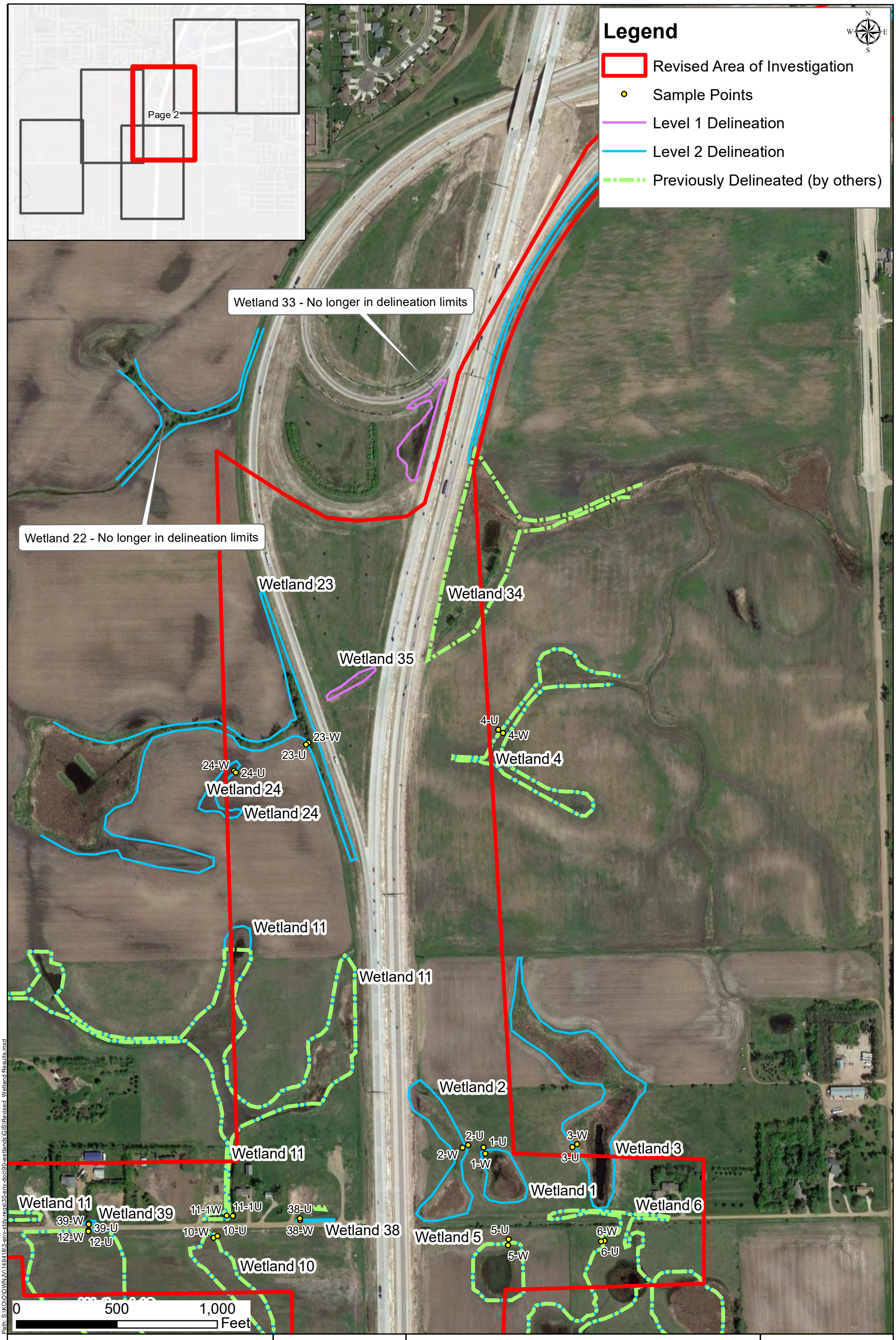
Projection: UTM NAD Zone 14N
Source: SEH ESRI SDDOT, USGS, FWS, NRCS

Wetland Delineation Results - Revised

85th Street Interchange
Lincoln County, South Dakota

Figure 6-1



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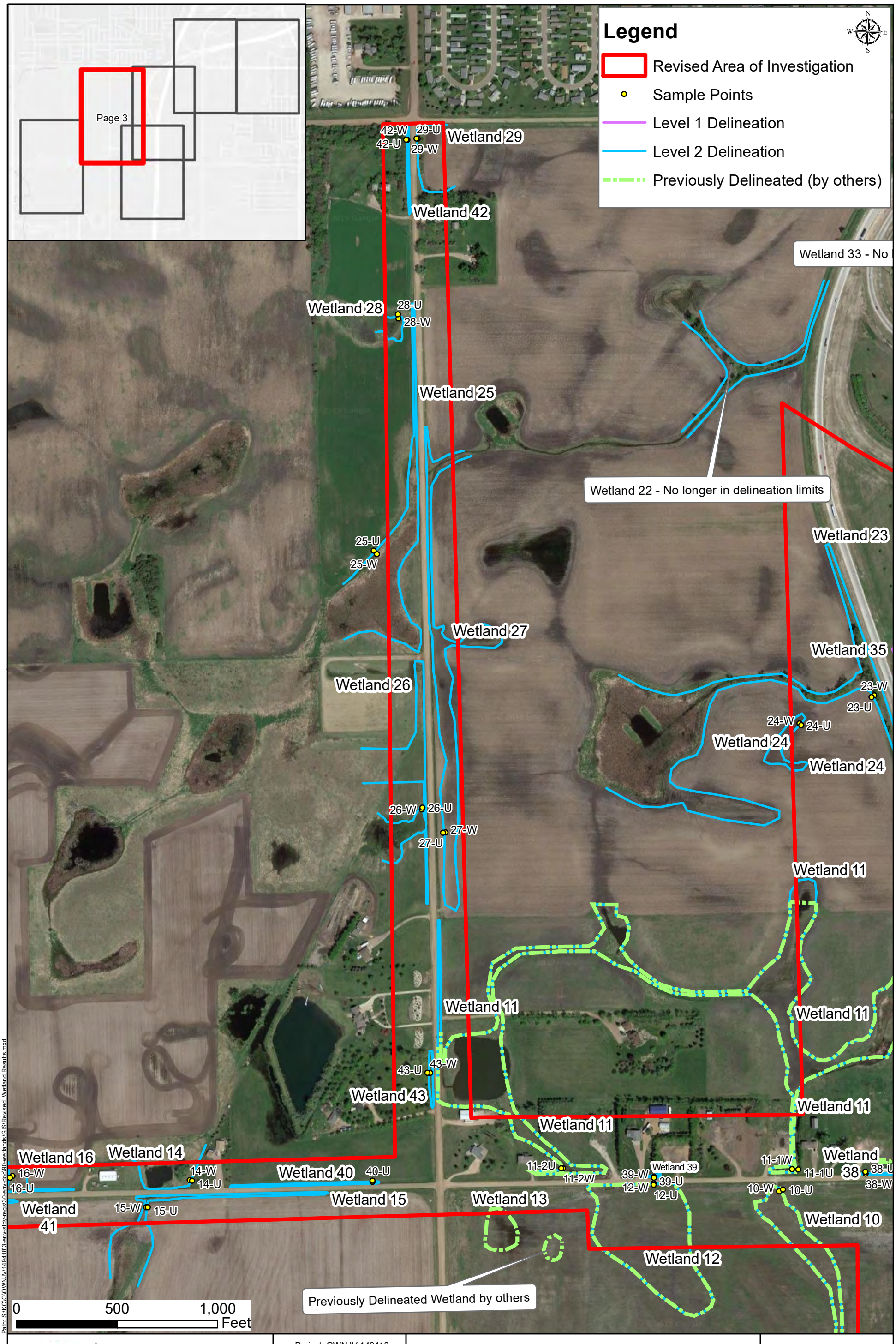
Project: OWNJV 149418
Print Date: 9/16/2019

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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Project: OWNJV 149418
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 6-3

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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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Source: SEH ESRI SDDOT, USGS, FWS, NRCS

Wetland Delineation Results

85th Street Interchange
Lincoln County, South Dakota

Figure 6-5

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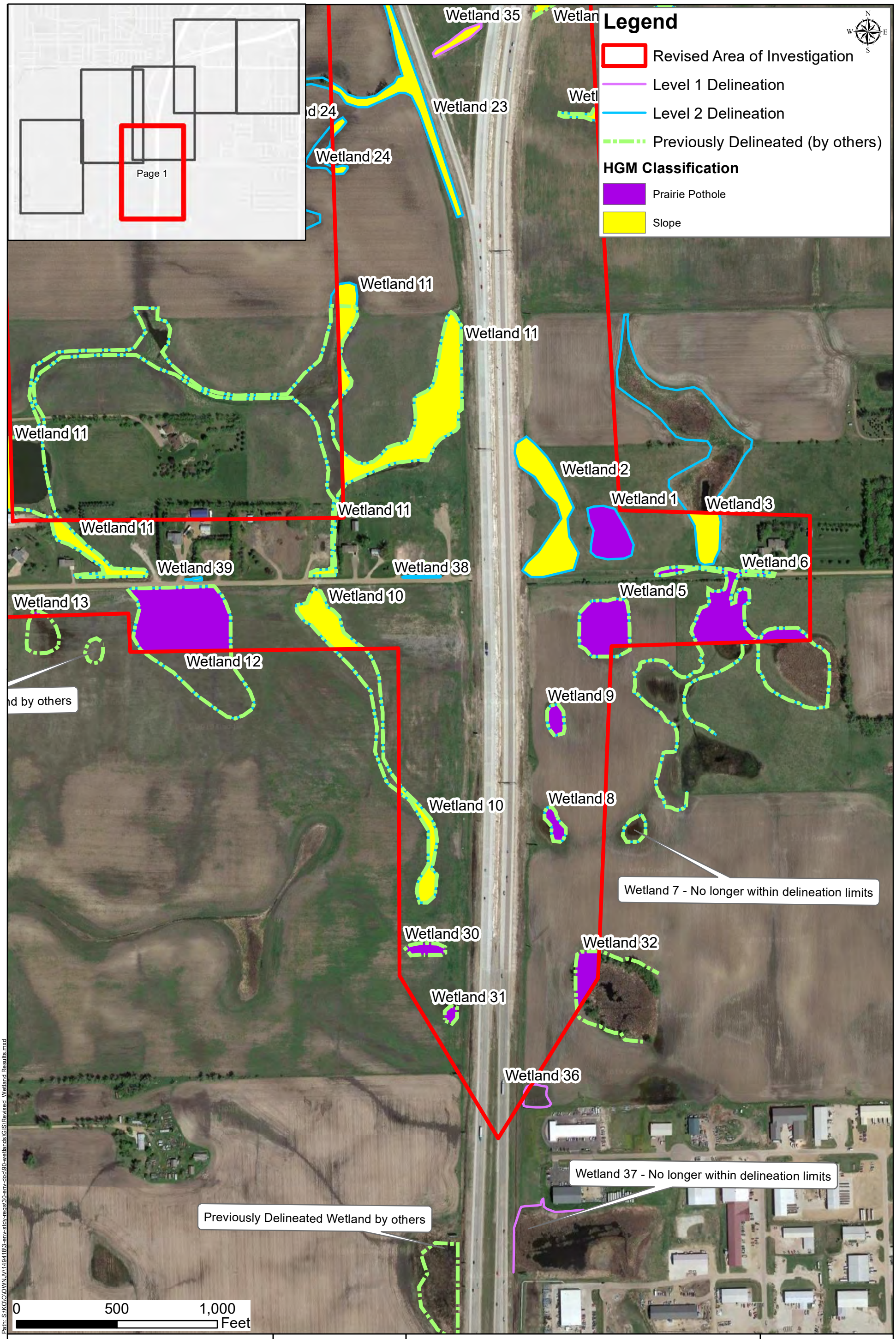
Project: OWNJV 149418
Print Date: 9/16/2019

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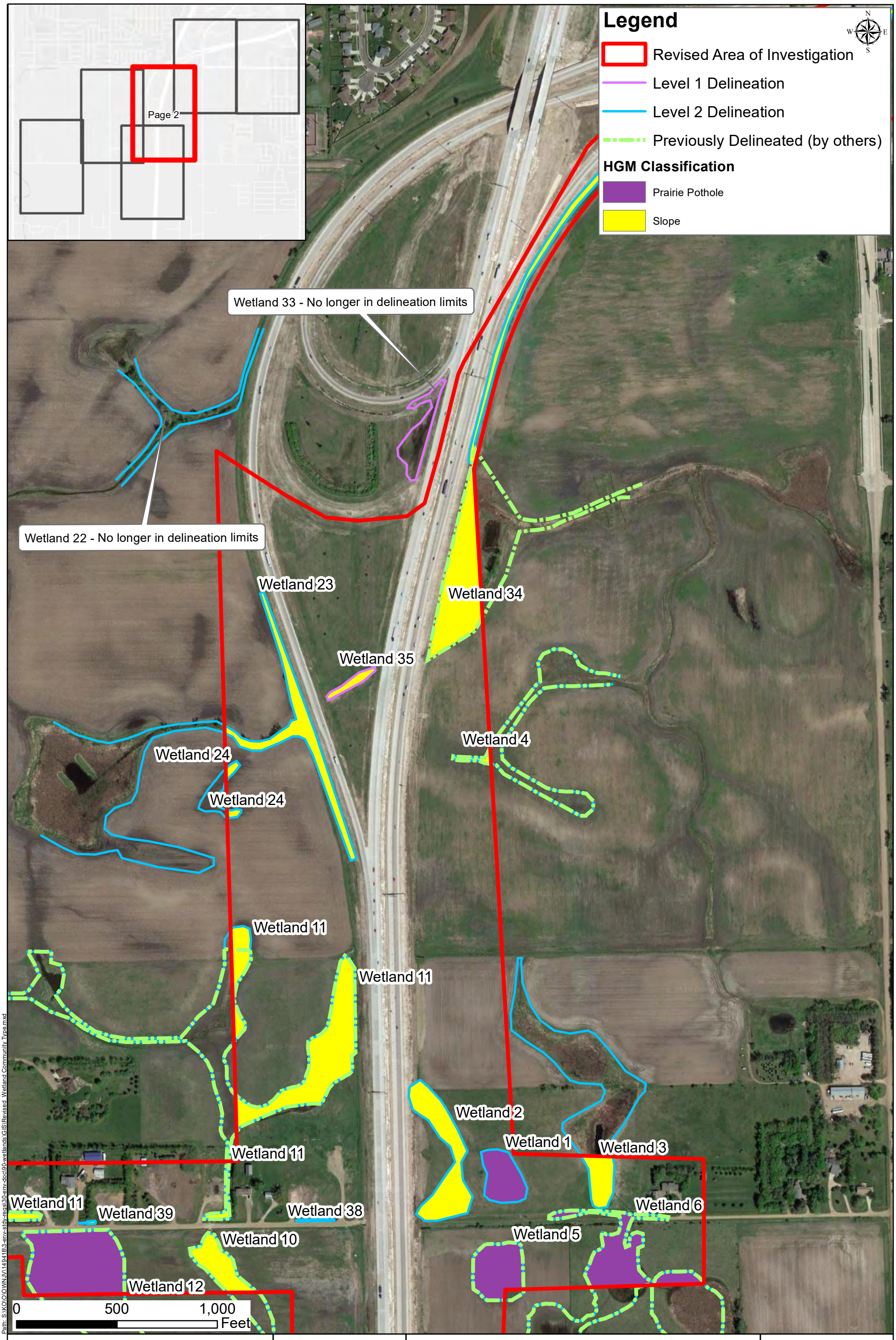
Project: OWNJV 149418
Print Date: 10/1/2019

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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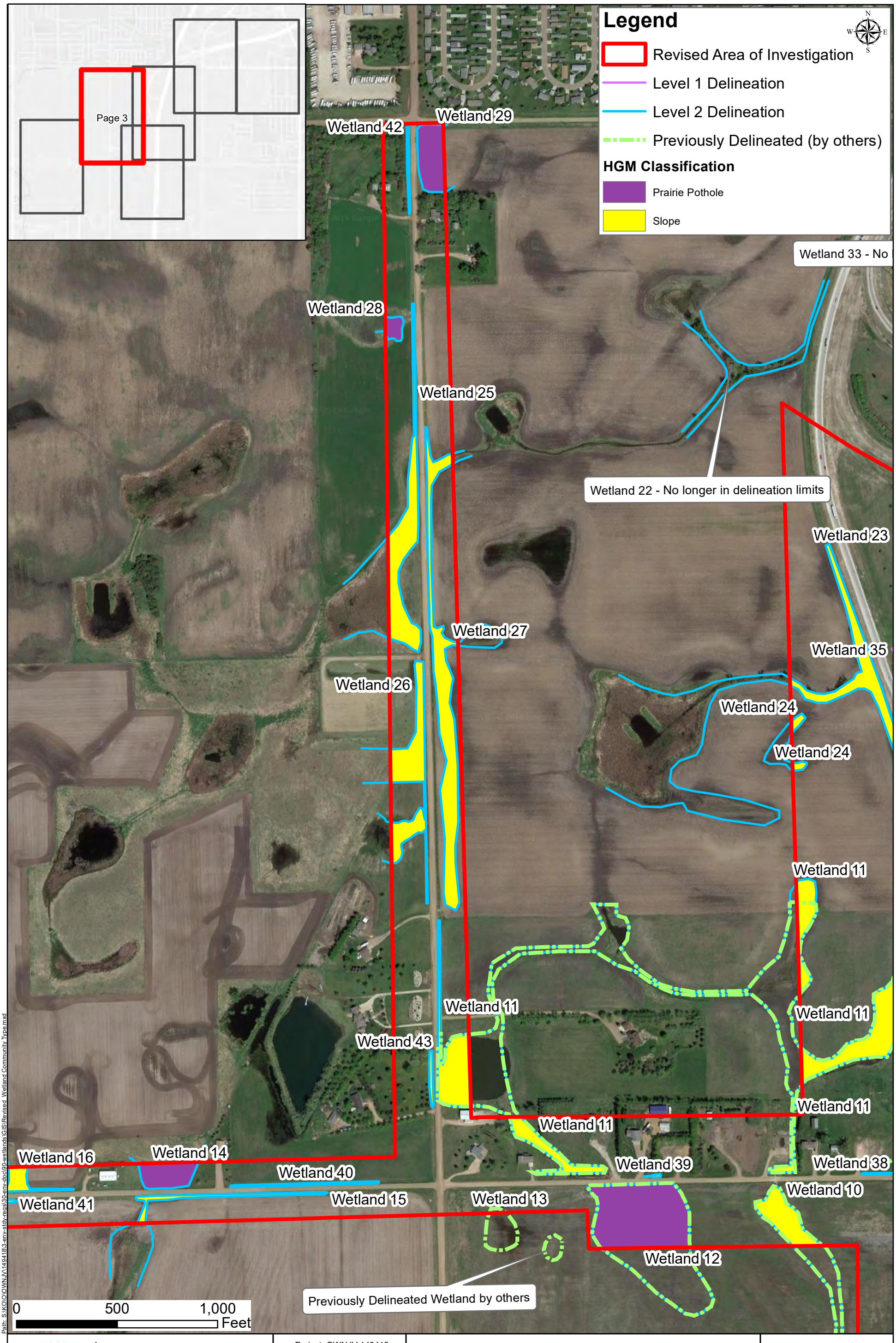
FAX: (888) 908-8166
TF: (800) 325-2055
www.sehinc.com

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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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 7-3

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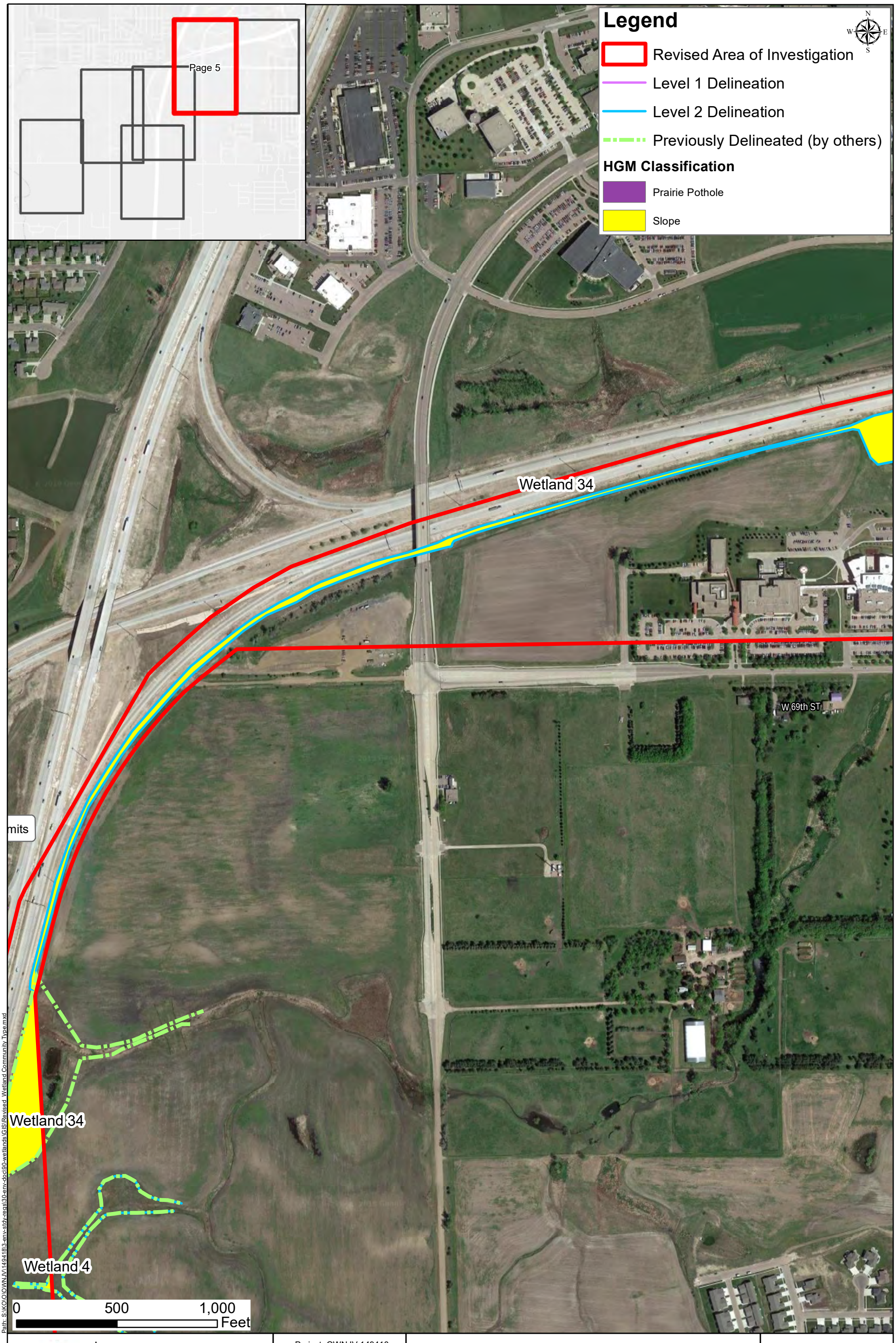
Project: OWNJV 149418
Print Date: 9/12/2019

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 7-4



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www.sehinc.com

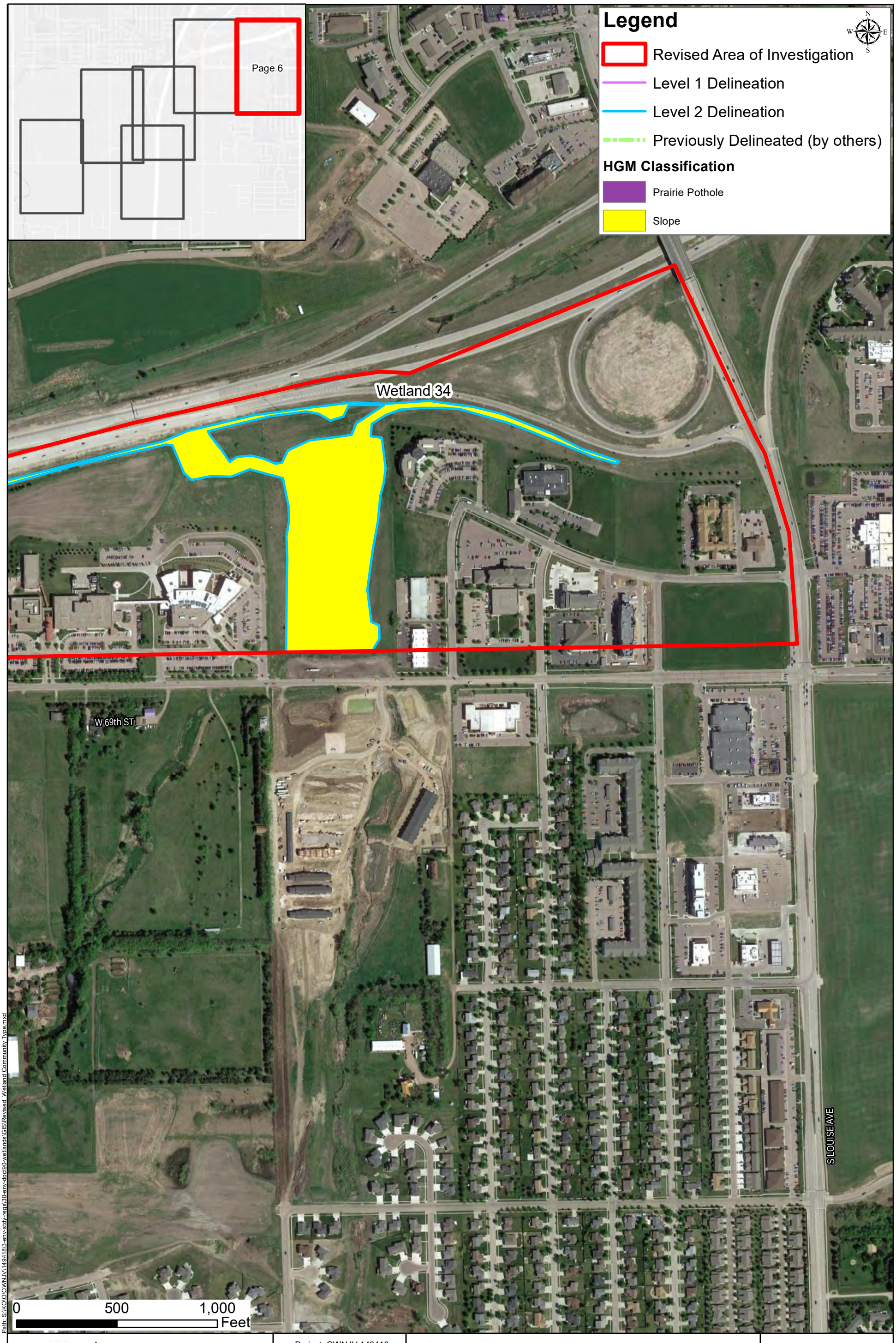
Project: OWNJV 149418
Print Date: 9/12/2019

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 7-5



Path: S:\KO\O\OWNJV\149418\3-env-stdy-reqs\30-env-doc\90-wetlands\GIS\Revised_Wetland_Community_Type.mxd

SEH

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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 7-6

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:
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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:
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-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:
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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:
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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:
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-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:
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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:
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-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:
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:** 34-2W

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

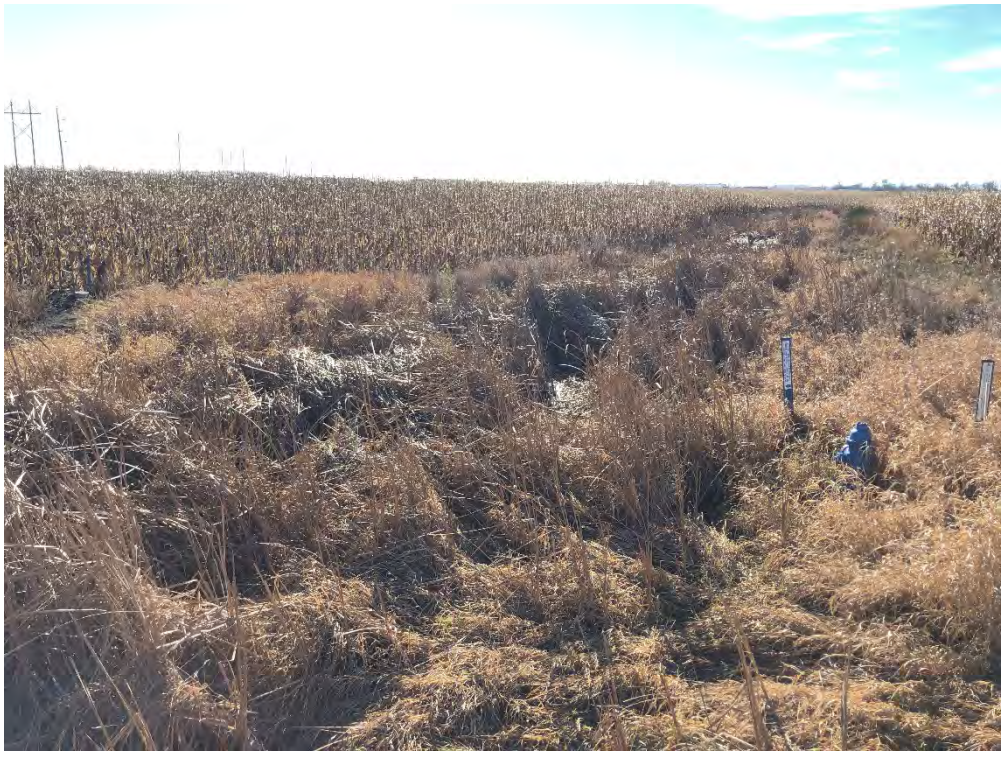


Photo 34 Wetland 18 – Fresh (Wet) Meadow

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

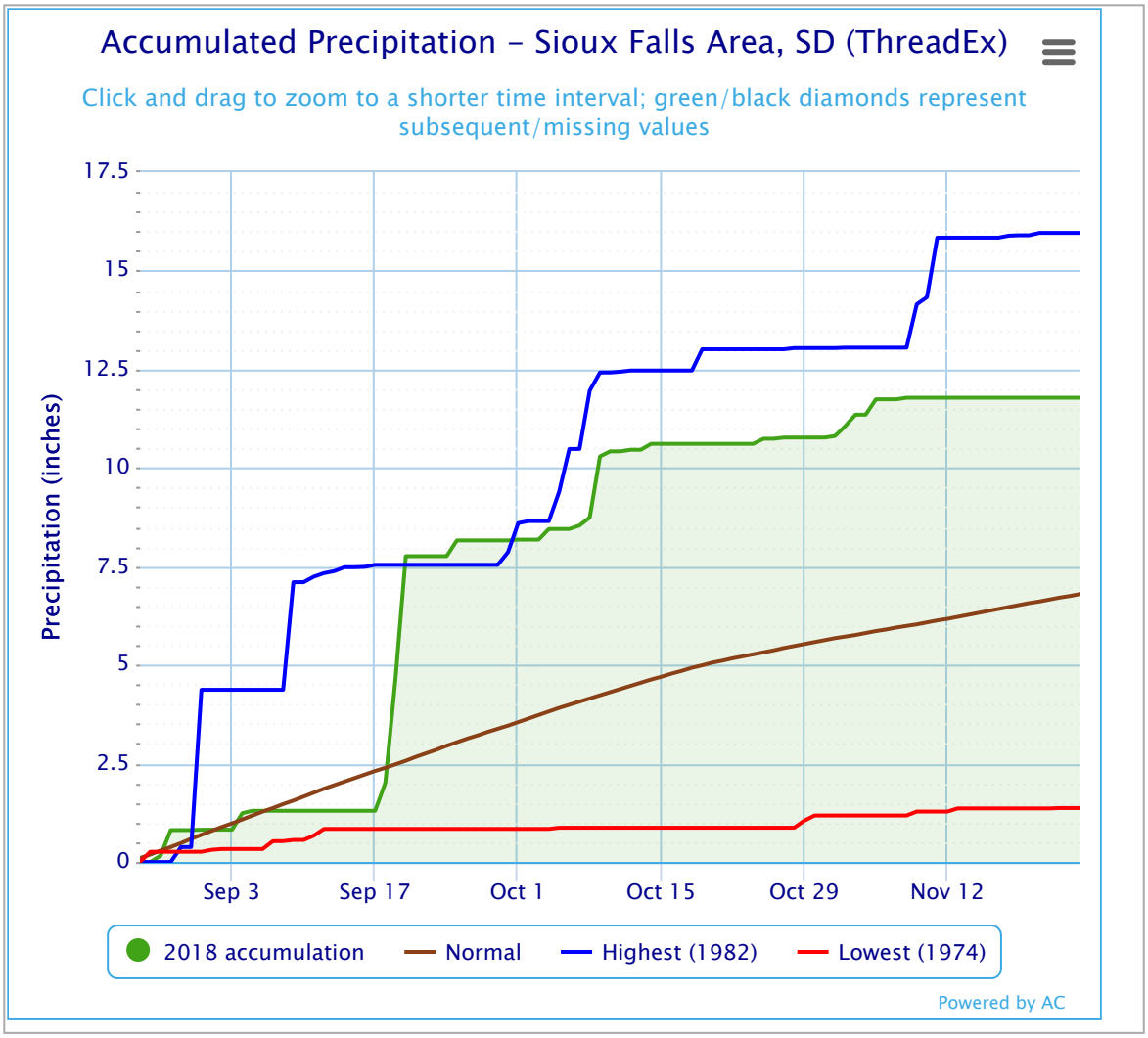
Photo 64 Wetland 34

Photo 65 Wetland 36 (Level 1) Field Verified

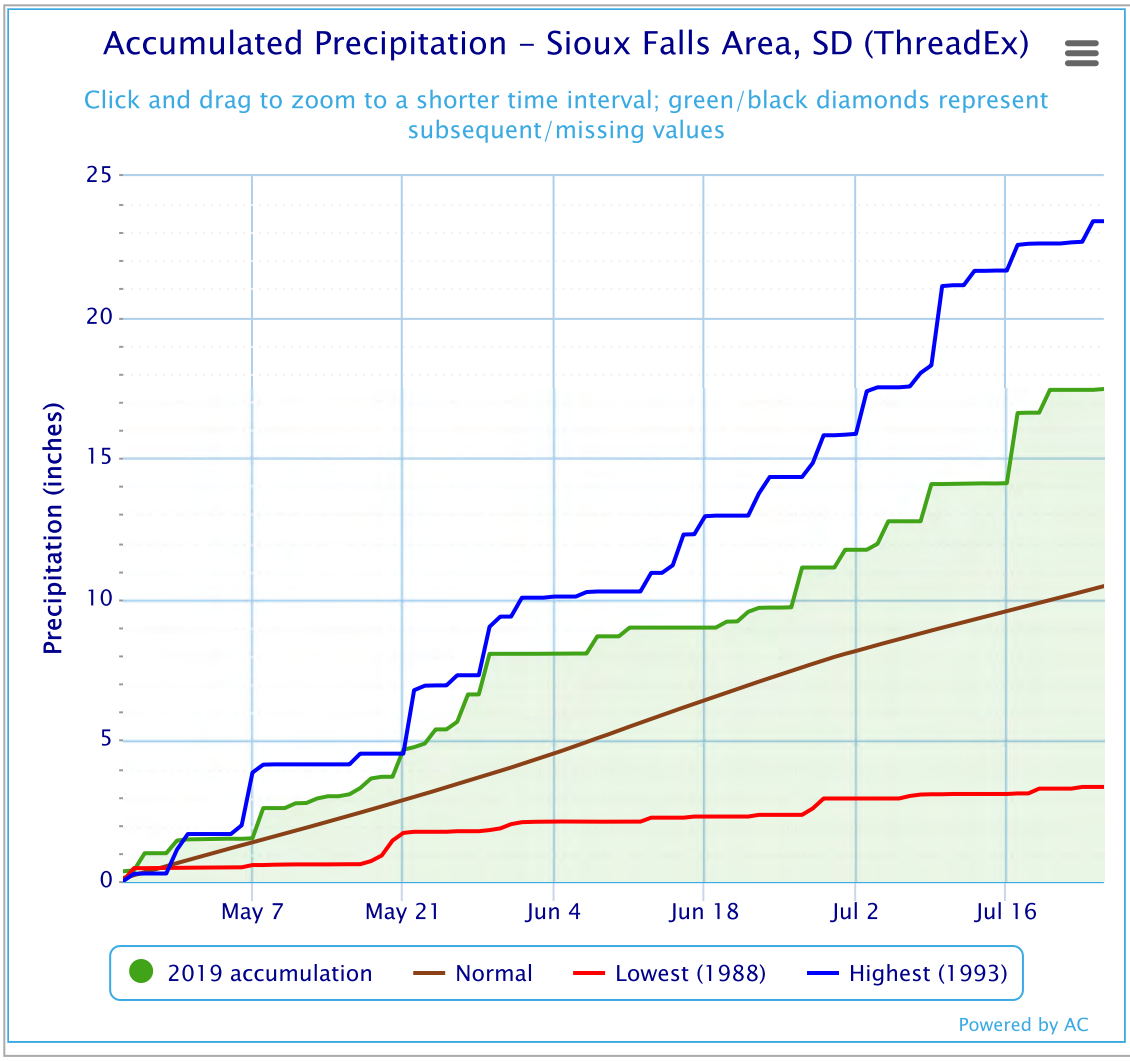
Photo 66 Wetland 36 (Level 1) Field Verified

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	

South Dakota Slope HGM Model, Version 4.0

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

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 #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	

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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	

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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	

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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	

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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

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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

South Dakota Slope HGM Model, Version 4.0

Rev. 6/6/01

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

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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.

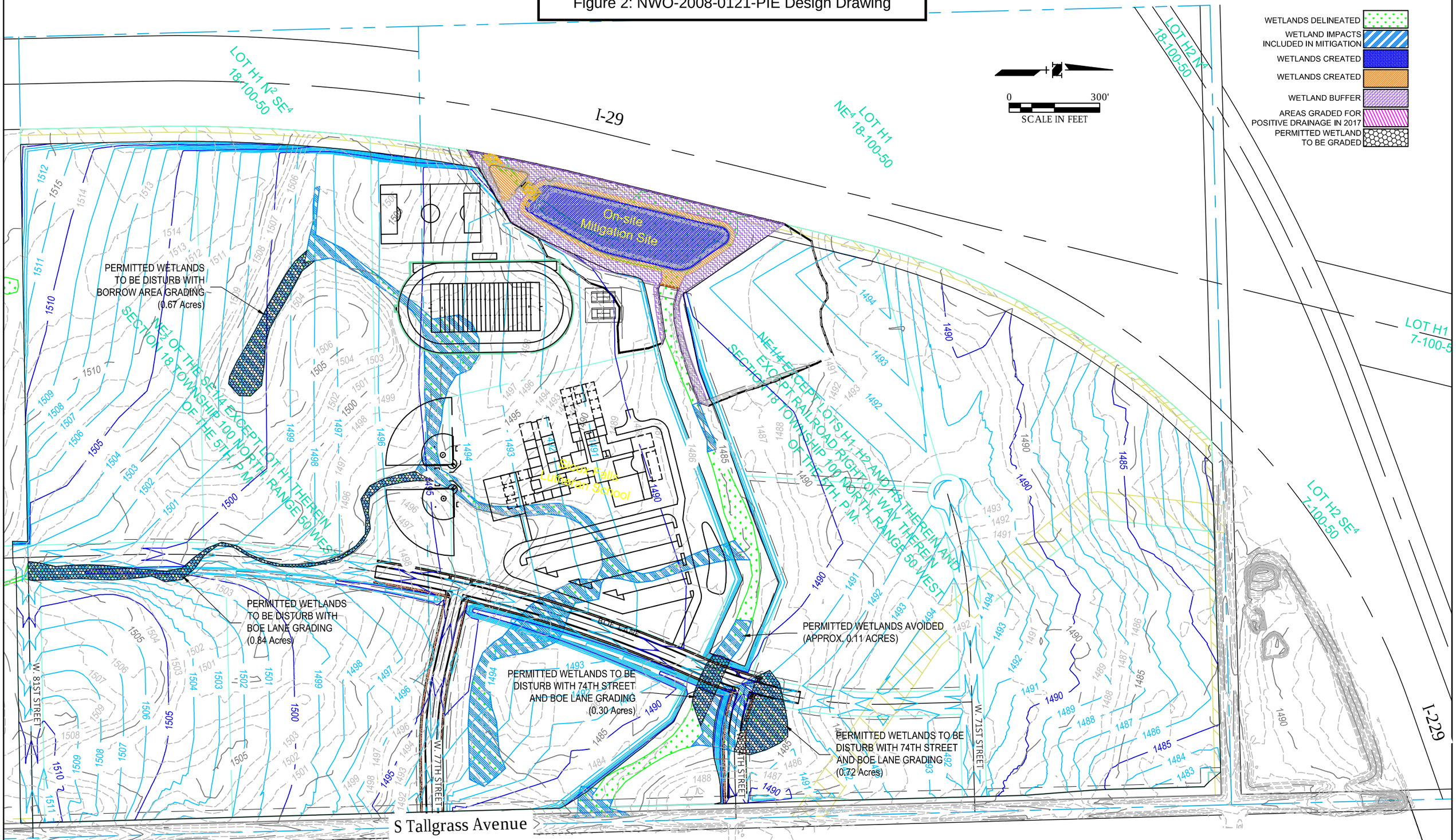
Any interested party (particularly officials of any town, city, county, state, Federal agency, Indian Tribe, or local association whose interests may be affected by the proposed work) is invited to submit to this office, written facts, arguments, or objections on or before May 25, 2018. Any agency or 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 K
0.02 ACRES
SAMPLE 1
WETLAND
COMPLEX E
WETLAND C
0.27 ACRES
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.

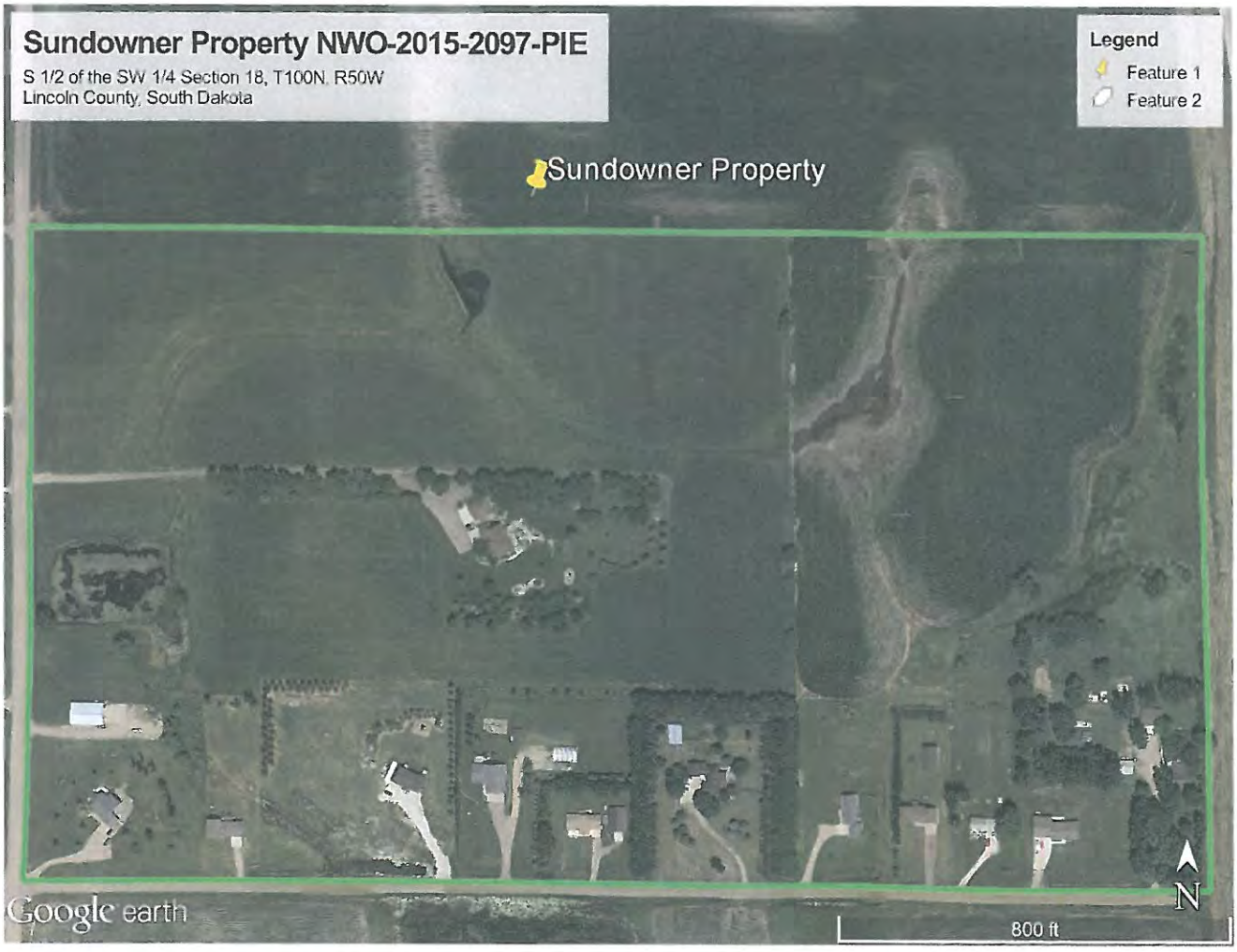


Figure 2. Topographic map of review area outlined in green.

Figure 3. Aerial view of review area showing jurisdictional Wetland A and non-jurisdictional Wetland B.

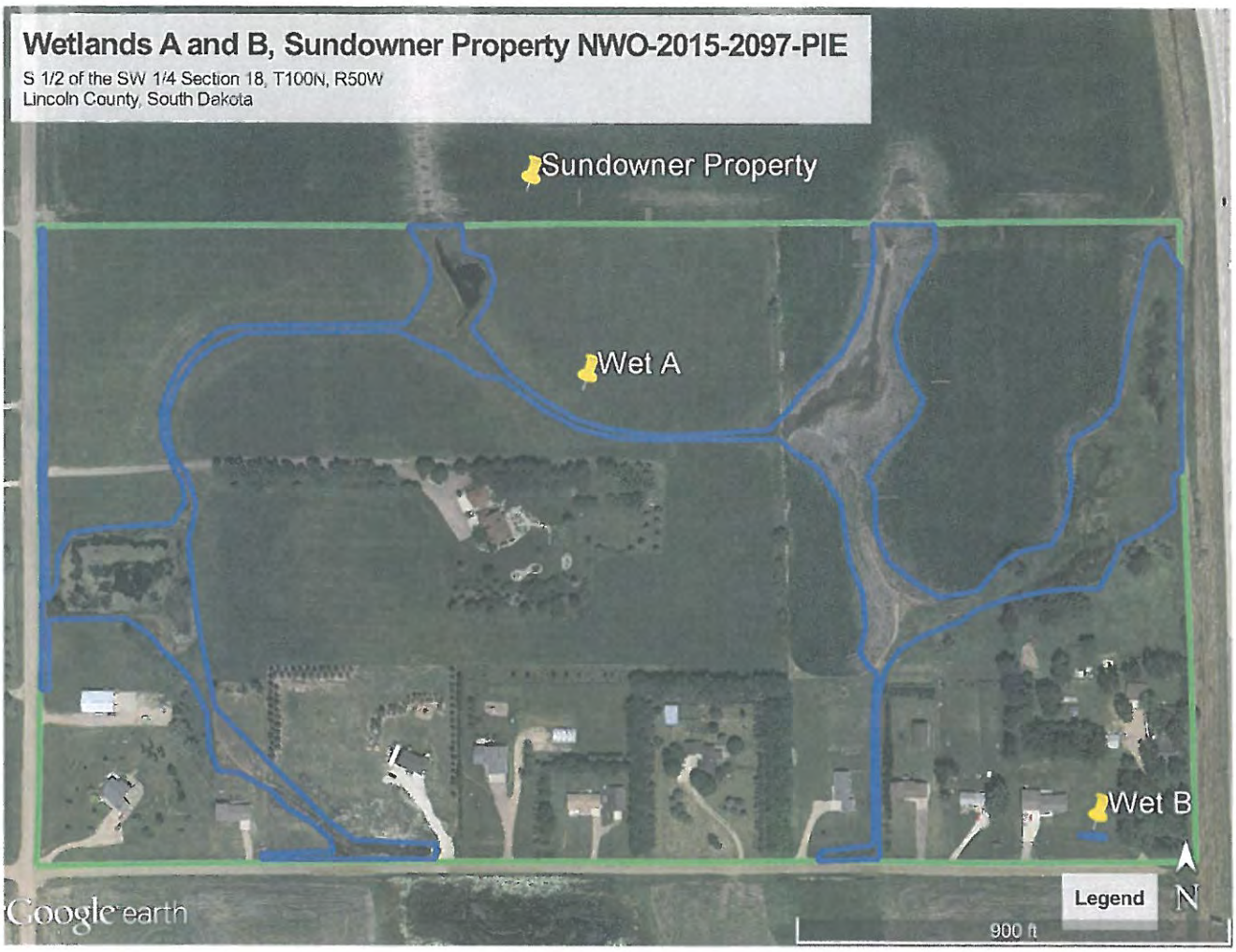
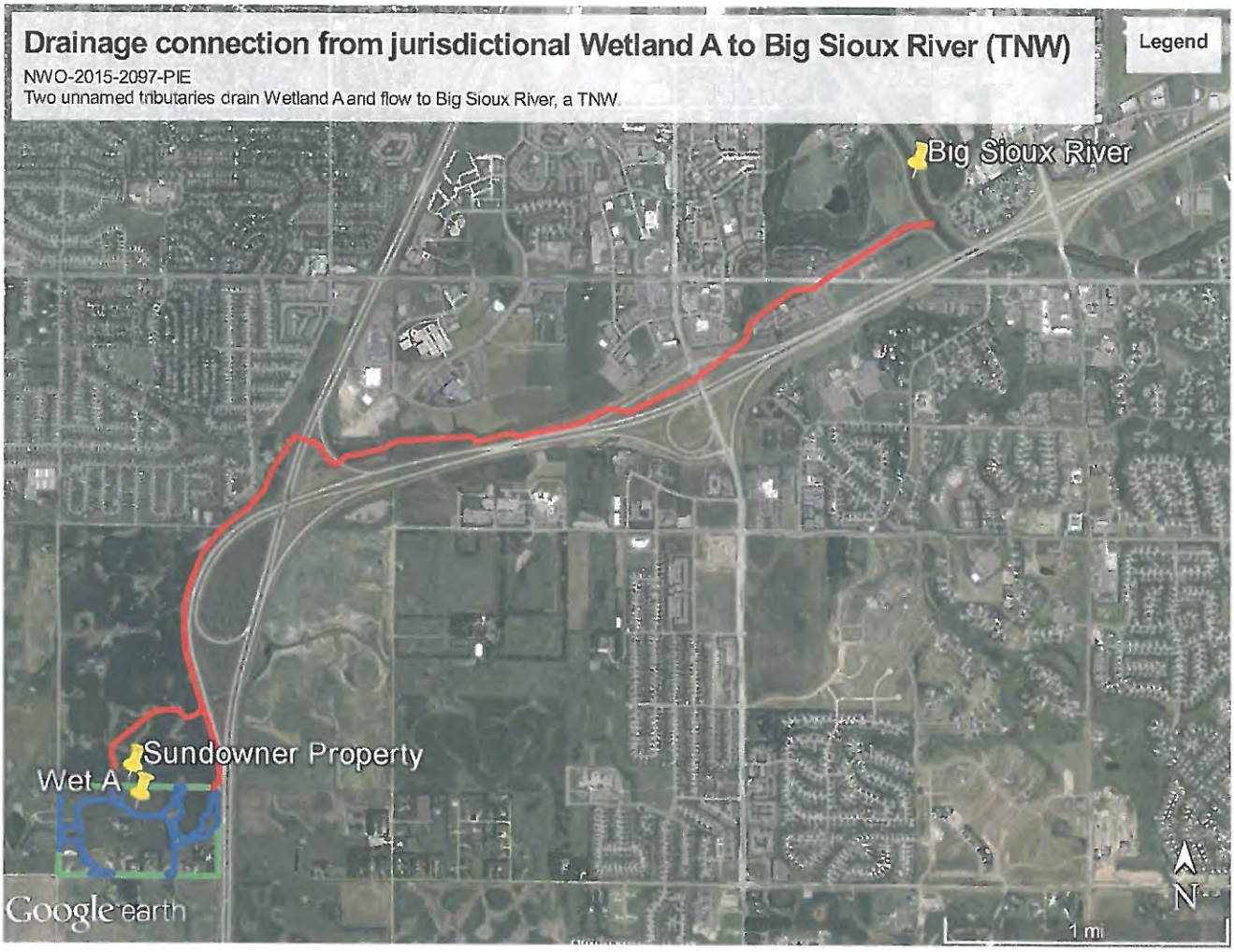


Figure 4. Aerial view of drainage connection from jurisdictional Wetland A to Big Sioux River TNW.



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.

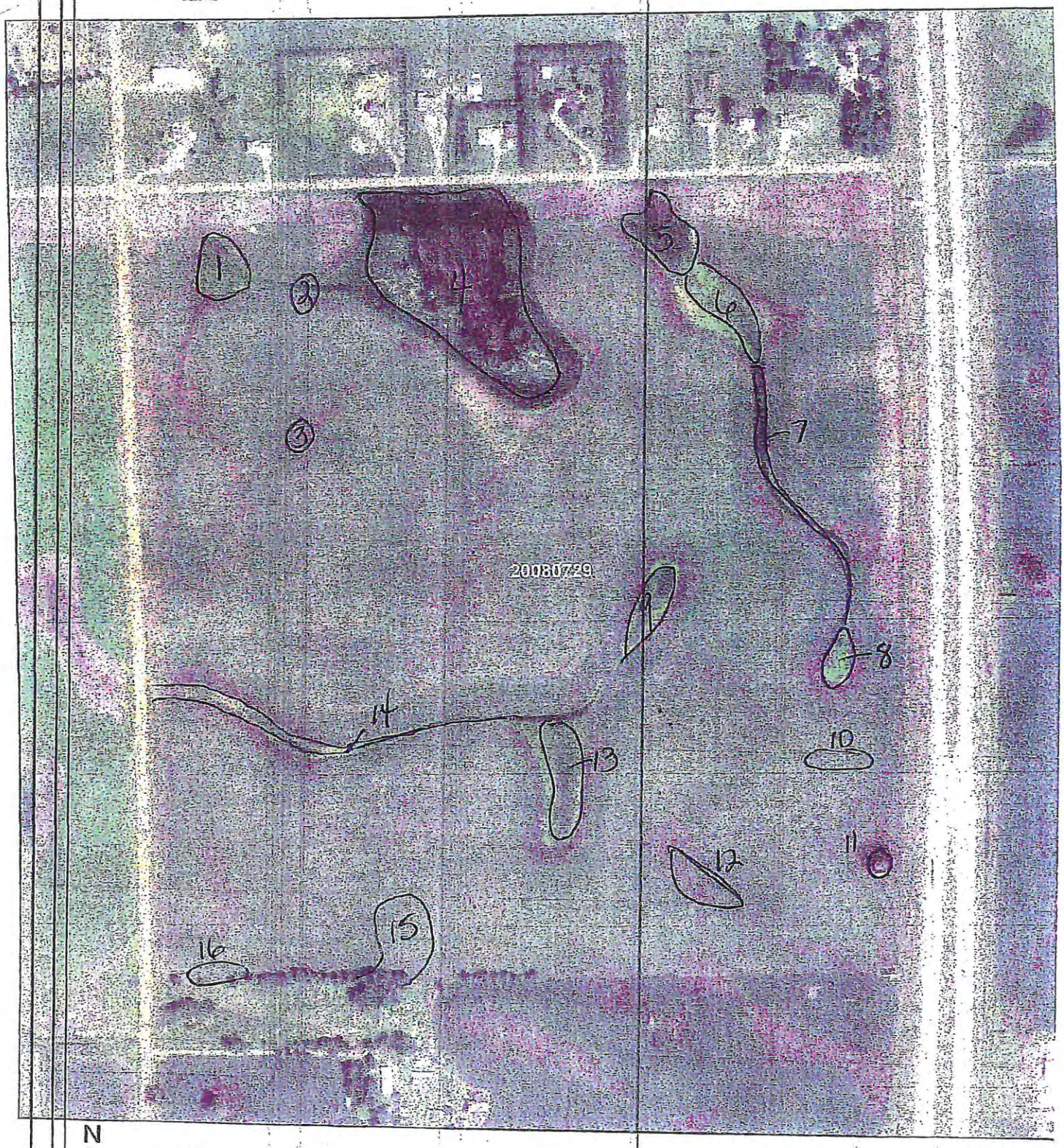
[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

☐ 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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Attachment D – Approved Jurisdictional Determination

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): March 2, 2020

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Omaha District, 85th Street Interchange, NWO-2020-0086-PIE

C. PROJECT LOCATION AND BACKGROUND INFORMATION: The review area is a large and complex shape that contains non-jurisdictional and jurisdictional waters. Non-jurisdictional waters in the review area include isolated wetlands, as well as ditches constructed in uplands that drain only uplands. These waters are not subject to Section 404 of the Clean Water Act. Jurisdictional waters in the review area include wetlands and ditches that make up tributary systems that flow to downstream Traditional Navigable Waters. These waters are subject to Section 404 of the Clean Water Act.

State: SD County/parish/borough: Lincoln City: Sioux Falls
Center coordinates of site (lat/long in degree decimal format): Lat. **43.475522° N**, Long. **-96.796620° W**
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 and Lake Alvin
Name of watershed or Hydrologic Unit Code (HUC): Lower Big Sioux - 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: February 19, 2020
☐ 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
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      ☐ 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: **1987 Delineation Manual**
      Elevation of established OHWM (if known):

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:

[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.

Seventeen isolated wetlands were delineated within the review area. These wetlands are depressional, prairie potholes that have been highly disturbed and manipulated by row-crop agriculture, road construction and rural development over the years. A review of aerial imagery reveals attempts to drain some of these potholes by ditching. But, the ditches are not adequate to permanently drain them, nor sustain a continuous surface water or wetland connection within the ditches to downstream waters.

Many years of aerial imagery accessed through Google Earth, USGS topography maps and NWI data clearly show that these wetlands do not make surface water connections to any waters of the United States. The wetlands are not located within a reasonably close proximity to jurisdictional other waters; whereby, nonspeculative ecological connection(s) could be made. Further, these wetlands: 1) are not used by interstate or foreign travelers for recreational or other purposes; 2) do not support fish or shellfish that could be taken and sold in interstate or foreign commerce; and 3) are not used for industrial purposes by industries in interstate commerce.

The review area also contains roadside ditches that were delineated as wetlands. These ditches were constructed in uplands, drain only uplands, and are non-jurisdictional under the Clean Water Act.

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

The review area is a complex shape and size with a variety of aquatic resources which makes it difficult to apply the information fields of this section. The review area contains a series of depressional and slope wetlands that drain to the northeast through continuous aquatic resource connections to the Big Sioux River (TNW). The Review Area also contains slope wetlands that flow south to Ninemile Creek, which flows to Lake Alvin (TNW). The information below attempts to provide a general description of the majority of waters within the review area.

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

(i) General Area Conditions:

Watershed size: 3,309**square miles**
Drainage area: Various drainage areas at the top of the watersheds.
Average annual rainfall: 25.9 inches
Average annual snowfall: 30 inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

☒ Tributary flows directly into TNW.
☒ Tributary flows through **2** tributaries before entering TNW.

Project waters are **10-15** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **1-2** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: No

Identify flow route to TNW[5]: A portion of the review area flows northeast through the city of Sioux Falls to the Big Sioux River (TNW). Another portion of the review area flows south to Ninemile Creek which flows to Lake Alvin (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 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: **Seasonal flow**
Estimate average number of flow events in review area/year: **11-20**
Describe flow regime: The tributaries flow following precipitation events as well as during spring snowmelt.
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

[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.

☐ leaf litter disturbed or washed away
☐ sediment deposition
☐ water staining
☐ other (list):
☐ scour
☐ multiple observed or predicted flow events
☐ abrupt change in plant community

☐ 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:
- ☐ oil or scum line along shore objects
- ☐ fine shell or debris deposits (foreshore)
- ☐ physical markings/characteristics
- ☐ tidal gauges
- ☐ other (list):

☐ Mean High Water Mark indicated by:
- ☐ 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: The tributaries exhibit chemical characteristics similar of those found in an agricultural setting where rowcrop production dominates the landscape

Identify specific pollutants, if known: Common agricultural pollutants.

(iv) Biological Characteristics. Channel supports (check all that apply):

☒ Riparian corridor. Characteristics (type, average width):
☒ Wetland fringe. Characteristics: The tributaries exhibit wetland vegetation throughout their lengths.
☒ Habitat for:
- ☐ Federally Listed species. Explain findings:
- ☐ Fish/spawn areas. Explain findings:
- ☐ Other environmentally-sensitive species. Explain findings:
- ☒ Aquatic/wildlife diversity. Explain findings: The tributary system contains thick wetland vegetation, open water, and dryland. This combination of environments provides for excellent aquatic/wildlife diversity

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:

[7]Ibid.

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: Multiple non-RPW tributary systems exist within the review area. These are made up of depressional wetlands, slope wetlands and highly manipulated aquatic resources. These tributary systems have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW. They 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. They have the capacity to transfer nutrients and organic carbon that support downstream foodwebs.

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: **7,000** linear feet **variable**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: **30** 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.

[8]See Footnote # 3.

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): The review area contains roadside ditches that were constructed in uplands and drain only uplands.

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: ~15 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.

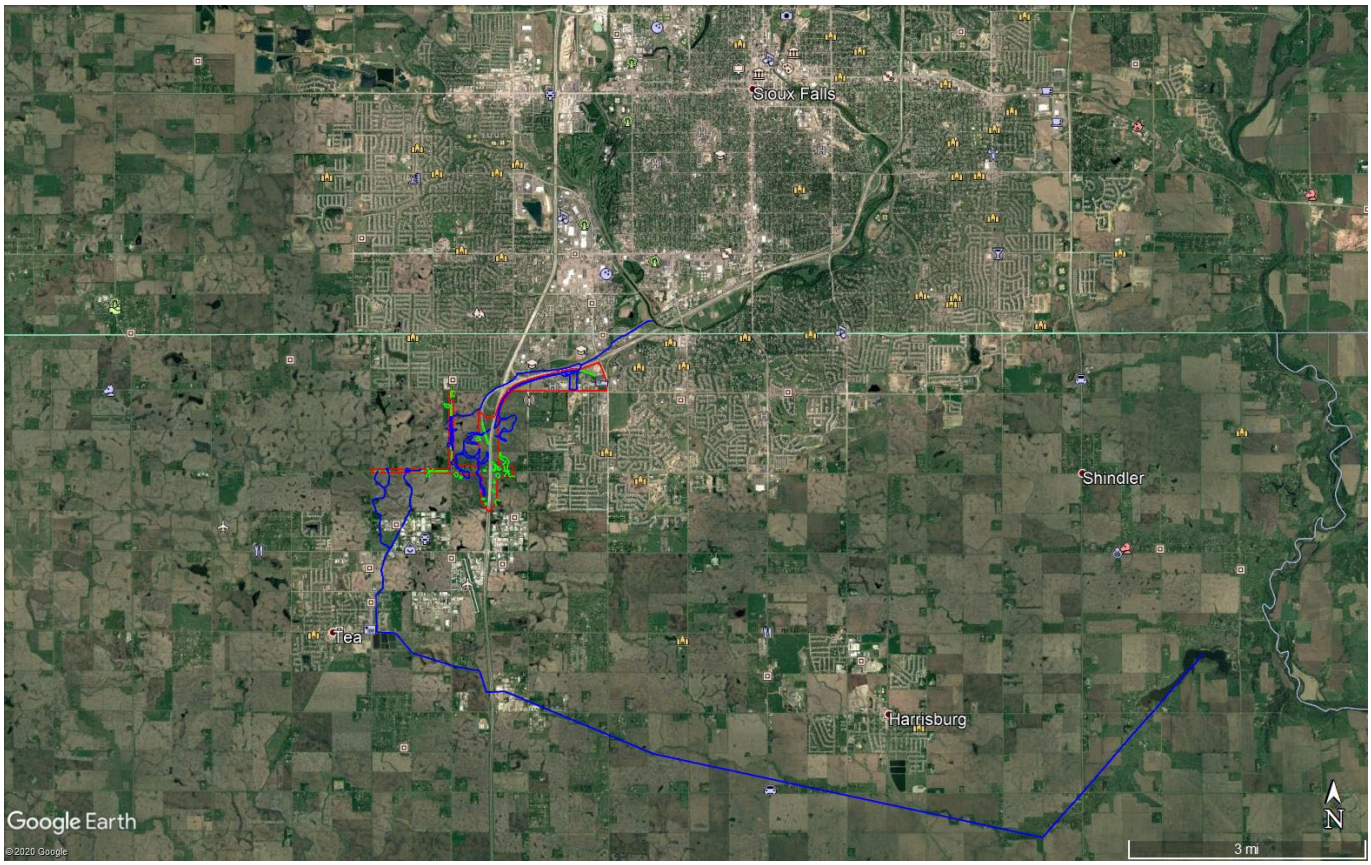
SECTION IV: DATA SOURCES.

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:
☒ 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. Details regarding jurisdictional boundaries and HGM classification still need to be sorted out between the Corps and the applicant/consultant.

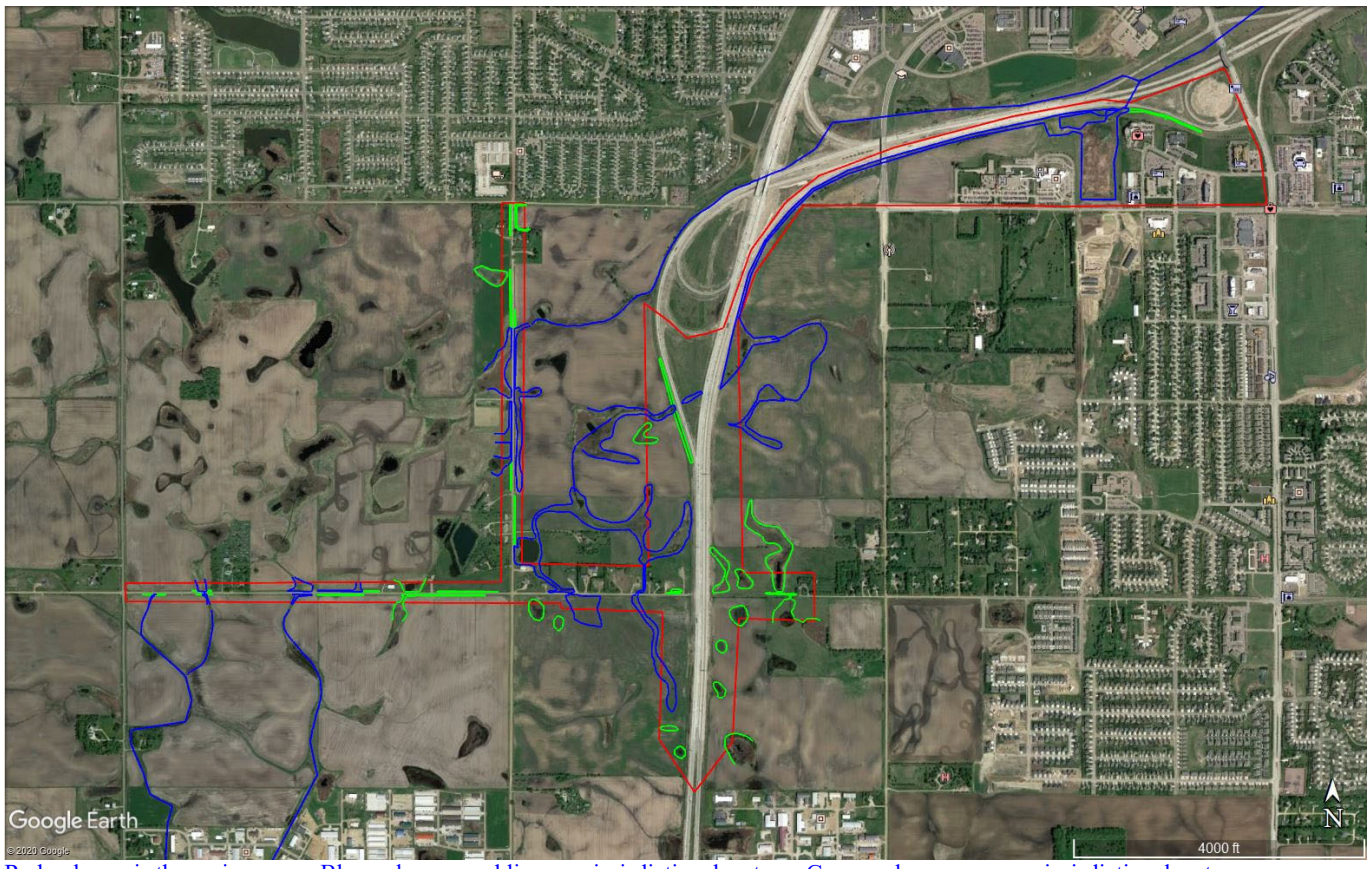
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

- ☐ 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:
- ☐ 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: (Datum :)
- ☒ Photographs: ☒ Aerial (Name & Date): 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:



Location map showing the review area in southwest Sioux Falls and flow routes to the Big Sioux River and Lake Alvin (TNWs).



Red polygon is the review area. Blue polygons and lines are jurisdictional waters. Green polygons are non-jurisdictional waters.

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Joel Dykstra	File Number: NWO-2022-01321-PIE	Date: 01 SEP 2022

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: US Army Corps of Engineers, South Dakota Regulatory Office Attn: Cathy Juhas, Regulatory Project Manager Pierre, SD 57501 Telephone (605) 224-8531 Catherine.d.juhas@usace.army.mil	If you only have questions regarding the appeal process you may also contact: US Army Corps of Engineers, Northwestern Division Attn: Melinda Larsen, Regulatory Appeals Review Officer Portland, OR 97232 Telephone (503) 808-3888 Melinda.M.Larsen@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.

_____ Signature of appellant or agent.	Date:	Telephone number:

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): September 1, 2022

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Omaha District, South Dakota Regulatory Office, 85th and Tallgrass Avenue Jurisdictional Determination, NWO-2022-01321-PIE

C. PROJECT LOCATION AND BACKGROUND INFORMATION: The 12.84-acre review area has been intensively farmed for over 80 years. In the past 20 years, the crop rotation has been row crop corn and beans with conventional tillage. The site consists entirely of uplands.

State: South Dakota County/parish/borough: Lincoln County City: Tea
Center coordinates of site (lat/long in degree decimal format): Lat. 43.474294N; Long. -96.788641W
Universal Transverse Mercator: 14
Name of nearest waterbody: Ninemile Creek
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 1, 2022
- ☐ 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:No wetlands were found during an on-site wetland delineation conducted within the review area. None of the sample points taken met the criteria in the 1987 Corps of Engineers Wetland Delineation manual or the Midwest Region Supplement .

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: **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.
   ☐ 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.

[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 **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;
☐ 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: .

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: 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.

[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:Submitted by Wetland Specialists, Inc.
- ☒ 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:SD-Tea.
- ☐ 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):ORM 2/Google Earth.
  or ☒ Other (Name & Date):Site photos provided in the delineation report dated August 11, 2022.
- ☐ 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: .

Wetland Specialists Inc.

Producers Name: 85th & Tallgrass
County: Lincoln
Legal Desc: **NENE 19-100-50**
Completion Date: - -
Tract: _____

Aquatic Resource Map

N

0 70 140 280 420 560 700 840
Feet

Attachment E – HGM Table

				Function								
Wetland Name	Wetland Size (acres)[3]	HGM Method	Prairie Pothole Function	Water Storage	Groundwater Recharge	Retain Particulates	Dissolved Substances	Carbon Cycling	Provide Faunal Habitat	Alternate Formula	Total FCI[1]	Total FCU[2]
			Slope Function	Mod. Groundwater Flow	Vel. Reduc. Surf. Water	Elemental & Nutrient Cycling	Retention of particulates	Organic Carbon Export	Maint of Plant Comm.	Habitat Dispersion		
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.

Attachment F – Letter of Credit Availability

EcoAsset MIDWEST, LLC

401 East 8th Street / Suite 211
Sioux Falls, SD 57103
605.809.7251

4-29-22

Re: I-29 & 85th Street Interchange development

Bailey Nelson, CMWP-IT
Chief Drone Pilot and Coordinator
Wetland Biologist
Short Elliott Hendrickson Inc.
St. Paul, MN

Good Day, Ms. Nelson,

This letter is in response to your request for statement of availability of wetland mitigation credits in the Lower Big Sioux Service Area of South Dakota.

As of today's date, we have available the following wetland mitigation Functional Credit Units, per our bank sites in the Lower Big Sioux:

Jandl	48.8669 depressional 0.0 slope credits
Tetonka-1	57.63 depressional / riverine 12.87 slope credits
Tetonka-2	20.0096 depressional / riverine 0.0 slope credits

We are honored for the opportunity to serve you on these projects. Don't hesitate to contact us as the work progresses and if other questions arise.

Jeff Oyen and Paul Heiberger
For the Jandl Bank Site and Tetonka 1 & 2 Bank Sites

CITY OF
SIOUX FALLS

PUBLIC WORKS

P.O. Box 7402, Sioux Falls, SD 57117-7402

September 13, 2022

Tetonka, L.L.P.
46578 254th Street
Hartford, SD 57033

Dear Tetonka L.L.P.:

Subject: Wetlands Functional Capacity Unit Credits Purchase Contract for 85th Street along southern edge of Sections 17 and 18 and the northern edge of Section 19 and 20 in Township 100N, Range 50W, Lincoln County, South Dakota.

This letter is notice of an amendment to the language from the wetland contract dated March 19, 2018 between City of Sioux Falls and Tetonka L.L.P. The amended section is revised as shown below and shall be effective upon acceptance by Tetonka L.L.P. representative as signed below.

Recitals: Section B. (changes tracked)

B. ~~Permittee is not an applicant for a Department of the Army Section 404 permit as the Corps has determined that there are no jurisdictional wetlands impacted; however, m~~Mitigation is being pursued in order to achieve compliance with the Executive Order 11990 as described in the Wetland Finding for the 85th Street Improvements, Sundowner to Louise Avenue (Project Numbers P 1360(01), PCN 03YF; Sioux Falls CIP Number 515099). The wetland credit will mitigate for impacts occurring as a result of both the overpass and arterial widening1 as shown in the wetland impact figure taken from the Environmental Assessment provided in Exhibit D. Credits may also be applied to Section 404 wetland impacts.

Recitals: Section B. (clean version)

B. Mitigation is being pursued in order to achieve compliance with the Executive Order 11990 as described in the Wetland Finding for the 85th Street Improvements, Sundowner to Louise Avenue (Project Numbers P 1360(01), PCN 03YF; Sioux Falls CIP Number 515099). The wetland credit will mitigate for impacts occurring as a result of both the overpass and arterial widening1 as shown in the wetland impact figure taken from the Environmental Assessment provided in Exhibit D. Credits may also be applied to Section 404 wetland impacts.

Sincerely,

Andrew Berg
City Engineer
City Center
231 North Dakota Avenue
605-367-8601

Acceptance:

Tetonka L.L.P. Representative

9-15-22
Date

From: Morey, Nathan M CIV USARMY CENWO (USA) <Nathan.M.Morey@usace.army.mil>
Sent: Tuesday, September 20, 2022 10:29 AM
To: Berg, Andrew <ABerg@siouxfalls.org>; Juhas, Catherine D CIV USARMY CENWO (USA) <Catherine.D.Juhas@usace.army.mil>
Cc: Al Murra <amurra@sehinc.com>; Ross Harris <rharris@sehinc.com>; Ausen, Shannon <sausen@SIOUXFALLS.org>; Fagerness, Aaron <AFagerness@siouxfalls.org>
Subject: RE: I29 & 85th St - wetland credit discussion

Andy,

We have received the enclosed letter amending the agreement between the City of Sioux Falls and Tetonka LLP.

We will still need to reconcile the number of credits that were debited but not used to determine what would be available for use for future Section 404 actions. It is my understanding that this information will be submitted in the future. At that point, I will compare the submitted information with the Tetonka ledger and verify the number of credits that would be available for use.

Nathan Morey
Senior Project Manager
Corps of Engineers
CENWO-OD-RSD
605-945-3386

From: Berg, Andrew <ABerg@siouxfalls.org>
Sent: Thursday, September 15, 2022 4:47 PM
To: Morey, Nathan M CIV USARMY CENWO (USA) <Nathan.M.Morey@usace.army.mil>; Juhas, Catherine D CIV USARMY CENWO (USA) <Catherine.D.Juhas@usace.army.mil>
Cc: Al Murra <amurra@sehinc.com>; Ross Harris <rharris@sehinc.com>; Ausen, Shannon <sausen@SIOUXFALLS.org>; Fagerness, Aaron <AFagerness@siouxfalls.org>
Subject: [URL Verdict: Neutral][Non-DoD Source] RE: I29 & 85th St - wetland credit discussion

Nathan & Cathy,

Attached is the letter amending our contract with Tetonka. They have signed off accepting the amended language. Would you please include this letter as an amendment to your file for the project? Also, would you please respond to this email letting us know you've received the amendment and if you are accepting it, as discussed on our conference call? Thank you.

Andy Berg
City of Sioux Falls

Attachment G – Agency/Tribal Coordination Documentation

Department of Transportation
Environmental Office
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-4336

February 18, 2019

Patrick Snyder
SD Dept. of Environment & Natural Resources
Joe Foss Building
Pierre, SD 57501-3181

RE: Project P 1360(02), PCN 06JQ, Lincoln County
I-29 -85th Street Interchange, City of Sioux Falls and City of Tea
Interchange Preliminary Engineering and Environmental Assessment

Dear Mr. Snyder:

Attached is information on the above project. Please comment on any of the following topics that pertain to your agency:

1. Wetland Locations	8. Section 404 Permits
2. Threatened or Endangered Species	9. Section 10 Permits
3. Refuges	10. Air Quality
4. SDGF&P Game Production Areas	11. Hazardous Waste
5. SDGF&P Recreation Areas	12. Land & Water Conservation Funds
6. Parks	13. Underground Storage Tanks
7. Water Quality Standards	14. Contaminated Soils

Please submit your comments as soon as possible, so that the project's environmental coordination and documentation can be completed, and the project can be let and constructed in a timely manner.

Sincerely,

Joanne Hight
Engineering Supervisor
605.773.3721

Attachments

Cc: Shannon Minerich, DENR
Nicole Stasch, DENR
Doug Miller, DENR

Project Description, Background, and Next Steps

Project Description

The South Dakota Department of Transportation (SDDOT), in partnership with the City of Sioux Falls, the 85th Street Joint Venture Group (85th Street JV), the Sioux Falls Metropolitan Planning Organization (MPO) and Federal Highway Administration (FHWA) – the Study Partners – are proposing the construction of an interchange at the intersection of I-29 and the planned 85th street corridor in the Cities of Sioux Falls and Tea, South Dakota. An Environmental Assessment (EA) is currently being completed for the project. The project will also include minor modifications to surrounding local roads and intersections as part of overall system improvements. Improvements for the project include:

- Construction of a Diverging Diamond Interchange (DDI) along I-29 at 85th Street
- The configuration also includes a connector ramp from southbound I-229 to the 85th Street exit ramp and a braided exit ramp from southbound I-29.
- Turning and travel lane improvements to provide acceptable levels of service at the following intersections:
    - 57th Street at Sundowner – EB/WB left turn lanes, Traffic Signal Control
    - 57th Street at Marion – WB Right turn lane, SB Right turn lane (AM Peak still contains queue storage issues)
    - 57th Street at Solberg – WB and NB dual left turns
    - 57th Street at Louise – WB right turn lane, SB additional through lane; this intersection still operates under failing conditions. Major capacity is required however it is not directly tied to this interchange project.
    - Louise Avenue at I-229 North Ramp – extend NB left turn lane to 600 feet
    - Solberg Avenue at 69th Street – SB left turn to 450 feet; assumes single lane approach on west leg for development
    - 85th Street at Tallgrass – 85th and Tallgrass will be four-lane (TIP), convert to All Way Stop
    - CR 106 at Sundowner – NB right turn lane; Traffic Signal Control
    - CR 106 at Tallgrass – Add left turn lanes at all four approaches
    - CR 106 at Louise – Add left turn lanes at all four approaches
- SDDOT will also schedule a project for the construction of Veterans Parkway (SD Highway 100) from I-29 to Louise Avenue utilizing highway funds.

Project Background

Previously, a NEPA study was completed in March of 2018 for the construction of a grade-separated structure (overpass) for 85th street at I-29. FHWA determined that the proposed improvements would have no significant impact on the human environment and issued a Finding of No Significant Impact (FONSI) on March 1, 2018. The EA did not include analysis or consideration for an interchange at 85th Street and I-29 because at the time of publication, an interchange was not identified in any regional planning documents. During the preparation of the EA, representatives of the 85th Street JV came forward with a request to evaluate an interchange at 85th Street and I-29. An operational and safety analysis and an Interchange Justification Report (IJR) have since been completed and the recommended interchange concept from the IJR was given Engineering and Operations Acceptance by FHWA.

Since the issuance of the FONSI for the 85th Street Overpass project, the City of Sioux Falls and SDDOT have determined that: 1) there is adequate funding for the interchange and the associated upgrades to the local street network, and 2.) that the work can be completed on a schedule that is compatible with the previously planned overpass. In May 2018, the Sioux Falls MPO removed the overpass project and added the proposed interchange project to the Financially Constrained Capital Roadway Projects List in the Long Range Transportation Plan. If a NEPA decision document (e.g., FONSI) is issued for the proposed project, the interchange would be constructed in place of the previously proposed overpass. If not, the LRTP will be amended accordingly to include the construction of the previously approved overpass project.

Next Steps

The next steps for advancing the interchange study include, the continuation of field studies, investigations, and surveys, and NEPA documentation. The study partners, along with public input from future public involvement activities, will work to finalize the range of alternatives and define the project's Purpose and Need. These will be the foundation of the EA and will be help kick off the NEPA process.

Department of Transportation
Environmental Office
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-4336

February 18, 2019

Hilary Meyer
SD Dept. of Game, Fish & Parks
523 E. Capitol Ave
Pierre, SD 57501

RE: Project P 1360(02), PCN 06JQ, Lincoln County
I-29 -85th Street Interchange, City of Sioux Falls and City of Tea
Interchange Preliminary Engineering and Environmental Assessment

Dear Ms. Meyer:

Attached is information on the above project. Please comment on any of the following topics that pertain to your agency:

1. Wetland Locations	9. Section 10 Permits
2. Threatened or Endangered Species	10. Air Quality
3. Refuges	11. Hazardous Waste
4. SDGF&P Game Production Areas	12. Land & Water Conservation Funds
5. SDGF&P Recreation Areas	13. Underground Storage Tanks
6. Parks	
7. Water Quality Standards	
8. Section 404 Permits	

Please submit your comments as soon as possible so that the project's environmental documentation can be completed, and the project can be let and constructed in a timely manner.

Sincerely,

Joanne Hight
Engineering Supervisor
605.773.3721

Attachments

Cc: Randy Kittle

Project Description, Background, and Next Steps

Project Description

The South Dakota Department of Transportation (SDDOT), in partnership with the City of Sioux Falls, the 85th Street Joint Venture Group (85th Street JV), the Sioux Falls Metropolitan Planning Organization (MPO) and Federal Highway Administration (FHWA) – the Study Partners – are proposing the construction of an interchange at the intersection of I-29 and the planned 85th street corridor in the Cities of Sioux Falls and Tea, South Dakota. An Environmental Assessment (EA) is currently being completed for the project. The project will also include minor modifications to surrounding local roads and intersections as part of overall system improvements. Improvements for the project include:

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    - CR 106 at Louise – Add left turn lanes at all four approaches
- SDDOT will also schedule a project for the construction of Veterans Parkway (SD Highway 100) from I-29 to Louise Avenue utilizing highway funds.

Project Background

Previously, a NEPA study was completed in March of 2018 for the construction of a grade-separated structure (overpass) for 85th street at I-29. FHWA determined that the proposed improvements would have no significant impact on the human environment and issued a Finding of No Significant Impact (FONSI) on March 1, 2018. The EA did not include analysis or consideration for an interchange at 85th Street and I-29 because at the time of publication, an interchange was not identified in any regional planning documents. During the preparation of the EA, representatives of the 85th Street JV came forward with a request to evaluate an interchange at 85th Street and I-29. An operational and safety analysis and an Interchange Justification Report (IJR) have since been completed and the recommended interchange concept from the IJR was given Engineering and Operations Acceptance by FHWA.

Since the issuance of the FONSI for the 85th Street Overpass project, the City of Sioux Falls and SDDOT have determined that: 1) there is adequate funding for the interchange and the associated upgrades to the local street network, and 2.) that the work can be completed on a schedule that is compatible with the previously planned overpass. In May 2018, the Sioux Falls MPO removed the overpass project and added the proposed interchange project to the Financially Constrained Capital Roadway Projects List in the Long Range Transportation Plan. If a NEPA decision document (e.g., FONSI) is issued for the proposed project, the interchange would be constructed in place of the previously proposed overpass. If not, the LRTP will be amended accordingly to include the construction of the previously approved overpass project.

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South Dakota DOT
Connecting South Dakota and the Nation

Department of Transportation
Environmental Office
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-4336

February 18, 2019

Natoma Hansen
Madison WMD
U.S. Fish & Wildlife Service
P.O. Box 48
Madison, SD 57042

RE: Project P 1360(02), PCN 06JQ, Lincoln County
I-29 -85th Street Interchange, City of Sioux Falls and City of Tea
Interchange Preliminary Engineering and Environmental Assessment

Dear Ms. Hansen:

Attached is information on the above project. Please comment on any of the following topics that pertain to your agency:

1. Wetland Locations	9. Section 10 Permits
2. Threatened or Endangered Species	10. Air Quality
3. Refuges	11. Hazardous Waste
4. SDGF&P Game Production Areas	12. Land & Water Conservation Funds
5. SDGF&P Recreation Areas	13. Underground Storage Tanks
6. Parks	
7. Water Quality Standards	
8. Section 404 Permits	

Please submit your comments as soon as possible so that the project's environmental documentation can be completed, and the project can be let and constructed in a timely manner.

Sincerely,

Joanne Hight
Engineering Supervisor
605.773.3721

Attachments

Project Description, Background, and Next Steps

Project Description

The South Dakota Department of Transportation (SDDOT), in partnership with the City of Sioux Falls, the 85th Street Joint Venture Group (85th Street JV), the Sioux Falls Metropolitan Planning Organization (MPO) and Federal Highway Administration (FHWA) – the Study Partners – are proposing the construction of an interchange at the intersection of I-29 and the planned 85th street corridor in the Cities of Sioux Falls and Tea, South Dakota. An Environmental Assessment (EA)

is currently being completed for the project. The project will also include minor modifications to surrounding local roads and intersections as part of overall system improvements. Improvements for the project include:

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Department of Transportation
Environmental Office
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-4336

February 18, 2019

Garrie Killsahundred
Flandreau Santee Sioux Tribe THPO
P.O. Box 283
Flandreau, SD 57028

RE: Project P 1360(02), PCN 06JQ, Lincoln County
I-29 -85th Street Interchange, City of Sioux Falls and City of Tea
Interchange Preliminary Engineering and Environmental Assessment

Dear Mr. Killsahundred:

Attached is information on the above project. The proposed project will include an interchange at I-29 and 85th Street, and minor improvements to surrounding local roadways. Please provide any comments on the proposed project that may affect the Flandreau Santee Sioux Tribe.

Please also submit your comments as soon as possible, so that the project's environmental coordination and documentation can be completed, and the project can be let and constructed in a timely manner.

Sincerely,

Joanne Hight
Engineering Supervisor
605.773.3721
Joanne.Hight@state.sd.us

Attachments

Cc: Bureau of Indian Affairs Archaeologist

Project Description, Background, and Next Steps

Project Description

The South Dakota Department of Transportation (SDDOT), in partnership with the City of Sioux Falls, the 85th Street Joint Venture Group (85th Street JV), the Sioux Falls Metropolitan Planning Organization (MPO) and Federal Highway Administration (FHWA) – the Study Partners – are proposing the construction of an interchange at the intersection of I-29 and the planned 85th street corridor in the Cities of Sioux Falls and Tea, South Dakota. An Environmental Assessment (EA) is currently being completed for the project. The project will also include minor modifications to surrounding local roads and intersections as part of overall system improvements. Improvements for the project include:

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Project Background

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Department of Transportation
Environmental Office
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-4336

February 18, 2019

Clair Green
Section 106 Coordinator
Lower Brule Sioux Tribe
P.O. Box 187
Lower Brule, SD 57548

RE: Project P 1360(02), PCN 06JQ, Lincoln County
I-29 -85th Street Interchange, City of Sioux Falls and City of Tea
Interchange Preliminary Engineering and Environmental Assessment

Dear Ms. Green:

Attached is information on the above project. The proposed project will correct deficiencies at the interchange of I-229 and Minnesota Avenue in Sioux Falls. Please provide any comments on the proposed project that may affect the Lower Brule Sioux Tribe.

Please also submit your comments as soon as possible, so that the project's environmental documentation can be completed, and the project can be let and constructed in a timely manner.

Sincerely,

Joanne Hight
Engineering Supervisor
605.773.3721
Joanne.Hight@state.sd.us

Attachments

Cc: Bureau of Indian Affairs Archaeologist

Project Description, Background, and Next Steps

Project Description

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Department of Transportation
Environmental Office
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-4336

February 18, 2019

Diane Desrosiers
Sisseton-Wahpeton Oyate THPO
P.O. Box 907
Sisseton, SD 57028

RE: Project P 1360(02), PCN 06JQ, Lincoln County
I-29 -85th Street Interchange, City of Sioux Falls and City of Tea
Interchange Preliminary Engineering and Environmental Assessment

Dear Ms. Desrosiers:

Attached is information on the above project. The proposed project will correct deficiencies at the interchange of I-229 and Minnesota Avenue in Sioux Falls. Please provide any comments on the proposed project that may affect the Sisseton-Wahpeton Oyate Tribe.

Please also submit your comments as soon as possible, so that the project's environmental documentation can be completed, and the project can be let and constructed in a timely manner.

Sincerely,

Joanne Hight
Engineering Supervisor
605.773.3721
Joanne.Hight@state.sd.us

Attachments

Cc: Bureau of Indian Affairs Archaeologist

Project Description, Background, and Next Steps

Project Description

The South Dakota Department of Transportation (SDDOT), in partnership with the City of Sioux Falls, the 85th Street Joint Venture Group (85th Street JV), the Sioux Falls Metropolitan Planning Organization (MPO) and Federal Highway Administration (FHWA) – the Study Partners – are proposing the construction of an interchange at the intersection of I-29 and the planned 85th street corridor in the Cities of Sioux Falls and Tea, South Dakota. An Environmental Assessment (EA) is currently being completed for the project. The project will also include minor modifications to surrounding local roads and intersections as part of overall system improvements. Improvements for the project include:

- Construction of a Diverging Diamond Interchange (DDI) along I-29 at 85th Street
- The configuration also includes a connector ramp from southbound I-229 to the 85th Street exit ramp and a braided exit ramp from southbound I-29.
- Turning and travel lane improvements to provide acceptable levels of service at the following intersections:
    - 57th Street at Sundowner – EB/WB left turn lanes, Traffic Signal Control
    - 57th Street at Marion – WB Right turn lane, SB Right turn lane (AM Peak still contains queue storage issues)
    - 57th Street at Solberg – WB and NB dual left turns
    - 57th Street at Louise – WB right turn lane, SB additional through lane; this intersection still operates under failing conditions. Major capacity is required however it is not directly tied to this interchange project.
    - Louise Avenue at I-229 North Ramp – extend NB left turn lane to 600 feet
    - Solberg Avenue at 69th Street – SB left turn to 450 feet; assumes single lane approach on west leg for development
    - 85th Street at Tallgrass – 85th and Tallgrass will be four-lane (TIP), convert to All Way Stop
    - CR 106 at Sundowner – NB right turn lane; Traffic Signal Control
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- SDDOT will also schedule a project for the construction of Veterans Parkway (SD Highway 100) from I-29 to Louise Avenue utilizing highway funds.

Project Background

Previously, a NEPA study was completed in March of 2018 for the construction of a grade-separated structure (overpass) for 85th street at I-29. FHWA determined that the proposed improvements would have no significant impact on the human environment and issued a Finding of No Significant Impact (FONSI) on March 1, 2018. The EA did not include analysis or consideration for an interchange at 85th Street and I-29 because at the time of publication, an interchange was not identified in any regional planning documents. During the preparation of the EA, representatives of the 85th Street JV came forward with a request to evaluate an interchange at 85th Street and I-29. An operational and safety analysis and an Interchange Justification Report (IJR) have since been completed and the recommended interchange concept from the IJR was given Engineering and Operations Acceptance by FHWA.

Since the issuance of the FONSI for the 85th Street Overpass project, the City of Sioux Falls and SDDOT have determined that: 1) there is adequate funding for the interchange and the associated upgrades to the local street network, and 2.) that the work can be completed on a schedule that is compatible with the previously planned overpass. In May 2018, the Sioux Falls MPO removed the overpass project and added the proposed interchange project to the Financially Constrained Capital Roadway Projects List in the Long Range Transportation Plan. If a NEPA decision document (e.g., FONSI) is issued for the proposed project, the interchange would be constructed in place of the previously proposed overpass. If not, the LRTP will be amended accordingly to include the construction of the previously approved overpass project.

Next Steps

The next steps for advancing the interchange study include, the continuation of field studies, investigations, and surveys, and NEPA documentation. The study partners, along with public input from future public involvement activities, will work to finalize the range of alternatives and define the project's Purpose and Need. These will be the foundation of the EA and will be help kick off the NEPA process.

Department of Transportation

Environmental Office

700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-4336

February 18, 2019

Jon Eagle
Standing Rock Sioux Tribe THPO
P.O. Box D
Fort Yates, ND 58538-0522

RE: Project P 1360(02), PCN 06JQ, Lincoln County
I-29 -85th Street Interchange, City of Sioux Falls and City of Tea
Interchange Preliminary Engineering and Environmental Assessment

Dear Mr. Eagle:

Attached is information on the above project. The proposed project will correct deficiencies at the interchange of I-229 and Minnesota Avenue in Sioux Falls. Please provide any comments on the proposed project that may affect the Standing Rock Sioux Tribe.

Please also submit your comments as soon as possible, so that the project's environmental documentation can be completed, and the project can be let and constructed in a timely manner.

Sincerely,

Joanne Hight
Engineering Supervisor
605.773.3721
Joanne.Hight@state.sd.us

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Department of Transportation
Environmental Office
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-4336

February 18, 2019

Kip Spotted Eagle
Yankton Sioux Tribe THPO
P.O. Box 1153
Wagner, SD 57380-1153

RE: Project P 1360(02), PCN 06JQ, Lincoln County
I-29 -85th Street Interchange, City of Sioux Falls and City of Tea
Interchange Preliminary Engineering and Environmental Assessment

Dear Mr. Spotted Eagle:

Attached is information on the above project. The proposed project will correct deficiencies at the interchange of I-229 and Minnesota Avenue in Sioux Falls. Please provide any comments on the proposed project that may affect the Yankton Sioux Tribe.

Please also submit your comments as soon as possible, so that the project's environmental documentation can be completed, and the project can be let and constructed in a timely manner.

Sincerely,

Joanne Hight
Engineering Supervisor
605.773.3721
Joanne.Hight@state.sd.us

Attachments

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Department of Transportation

Environmental Office

700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-4336

February 18, 2019

Elgin Crows Breast
Three Affiliated Tribes (Mandan Hidatsa Arikara Nation) THPO
404 Frontage Road
New Town, ND 58763-9404

RE: Project P 1360(02), PCN 06JQ, Lincoln County
I-29 -85th Street Interchange, City of Sioux Falls and City of Tea
Interchange Preliminary Engineering and Environmental Assessment

Dear Mr. Crows Breast:

Attached is information on the above project. The proposed project will correct deficiencies at the interchange of I-229 and Minnesota Avenue in Sioux Falls. Please provide any comments on the proposed project that may affect the Three Affiliated Tribes (Mandan Hidatsa Arikara Nation).

Please also submit your comments as soon as possible, so that the project's environmental documentation can be completed, and the project can be let and constructed in a timely manner.

Sincerely,

Joanne Hight
Engineering Supervisor
605.773.3721
Joanne.Hight@state.sd.us

Attachments

Cc: Bureau of Indian Affairs Archaeologist

Project Description, Background, and Next Steps

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Department of Transportation
Environmental Office
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-4336

February 18, 2019

Mr. Shannon Wright
Ponca Tribe of Nebraska THPO
P.O. Box 288
Niobrara, NE 68760

RE: Project P 1360(02), PCN 06JQ, Lincoln County
I-29 -85th Street Interchange, City of Sioux Falls and City of Tea
Interchange Preliminary Engineering and Environmental Assessment

Dear Mr. Wright:

Attached is information on the above project. The proposed project will correct deficiencies at the interchange of I-229 and Minnesota Avenue in Sioux Falls. Please provide any comments on the proposed project that may affect the Ponca Tribe of Nebraska.

Please also submit your comments as soon as possible, so that the project's environmental documentation can be completed, and the project can be let and constructed in a timely manner.

Sincerely,

Joanne Hight
Engineering Supervisor
605.773.3721
Joanne.Hight@state.sd.us

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Department of Transportation
Environmental Office
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-4336

February 18, 2019

Tribal Historic Preservation Office
Iowa Tribe of Oklahoma
RR1, BOX 721
Perkins, OK 74059

RE: Project P 1360(02), PCN 06JQ, Lincoln County
I-29 -85th Street Interchange, City of Sioux Falls and City of Tea
Interchange Preliminary Engineering and Environmental Assessment

Dear Mr. Windy Boy:

Attached is information on the above project. The proposed project will correct deficiencies at the interchange of I-229 and Minnesota Avenue in Sioux Falls. Please provide any comments on the proposed project that may affect the Chippewa Cree Tribe.

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Sincerely,

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DEPARTMENT of ENVIRONMENT and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

March 20, 2019

Joanne Hight
Department of Transportation
700 East Broadway Avenue
Pierre, South Dakota 57501

RE: SD DOT Project
P 1360(02)
PCN 06JQ
Lincoln County

Dear Ms. Hight:

The South Dakota Department of Environment and Natural Resources (DENR), Division of Environmental Regulation, has reviewed the above referenced project.

This office has no objections to this project, which should not result in any violations of applicable statutes or regulations provided the Department of Transportation and/or its contractor(s) comply with the following requirements.

SURFACE WATER QUALITY

1. All fill material shall be free of substances in quantities, concentrations, or combinations which are toxic to aquatic life.

2. Removal of vegetation shall be confined to those areas absolutely necessary to construction.

3. At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site. Any construction activity that disturbs an area of one or more acres of land must have authorization under the General Permit for Storm Water Discharges Associated with Construction Activities. Contact the Department of Environment and Natural Resources for additional information or guidance at 1-800-SDSTORM (800-737-8676) or http://denr.sd.gov/des/sw/stormwater.aspx.

4. All material identified in the application as removed waste material, material stockpiles, dredged or excavated material shall be placed for either temporary or permanent disposal in an upland site that is not a wetland, and measures taken to ensure that the material cannot enter the watercourse through erosion or any other means.

5. Methods shall be implemented to minimize the spillage of petroleum, oils and lubricants used in vehicles during construction activities. If a discharge does occur, suitable containment procedures such as banking or diking shall be used to prevent entry of these materials into a waterway.

6. All newly created and disturbed area above the ordinary high water mark which are not riprapped shall be seeded or otherwise revegetated to protect against erosion.

7. This project may be in the vicinity of multiple streams and wetlands. These waters are considered waters of the state and are protected under Administrative Rules of South Dakota (ARSD) Chapter 74:51. Special construction measures may have to be taken to ensure that water quality standards are not violated.

HAZARDOUS and SOLID WASTES

1. Should any hazardous waste be generated during the implementation of this project, the generator must abide by all applicable hazardous waste regulations found in ARSD 74:28 and 40 CFR Part 262.

2. If any contamination is encountered during construction activities, the contractor, owner, or party responsible for the release must report the contamination to the department at 605-773-3296. Any contaminated soil encountered must be temporarily stockpiled and sampled to determine disposal requirements.

3. It is not expected that any hazardous wastes sites will be encountered during road construction in any rural area. However, if road construction is planned for areas within a city or town, the DOT or contractor should contact this Department prior to construction.

4. Some solid waste may be generated during this project. Any solid waste generated that will not be reused in some beneficial manner must be disposed or managed at a permitted solid waste facility.

5. Regional landfills able to accept all solid waste generated are listed on our website available here: https://apps.sd.gov/NR60SolidWaste/main.html#. Only Regional landfills are permitted to accept all wastes generated. If you have any questions please contact Waste Management at 605-773-3153.

6. Demolition or renovation of a building structure may be subject to asbestos abatement requirements. If demolition is part of the construction projects please contact our Asbestos Coordinator at 605-773-3153.

AIR QUALITY

1. It appears that Department of Transportation projects may have only a minor impact on the air quality in South Dakota. This impact would be through point source and fugitive emissions.

2. Equipment with point source emissions in many cases are required to have an air quality permit to operate. Permit applications can be obtained from the Air Quality or Minerals and Mining Programs.

3. Fugitive emissions, although not covered under State air quality regulations, are a common source of public concern and may be subject to local or county ordinances. Fugitive emissions add to the deterioration of the ambient air quality and should be controlled to protect the health of communities within the construction areas.

4. For further air quality information, please contact Rick Boddicker, Air Quality Program, telephone number 605-773-3151.

This office requests the opportunity to review and comment on any significant changes that may be proposed before the project is completed. Thank you for the opportunity to comment on the proposed project. If you have any questions, please contact me at 605-773-3351 or Shannon.Minerich@state.sd.us.

Sincerely,

Shannon Minerich

Shannon Minerich
Environmental Scientist
Surface Water Quality Program

Cc: Jim Wendte, DENR Waste Management Program
Rick Boddicker, DENR Air Quality Program

SOUTH DAKOTA DEPARTMENT OF
GAME, FISH AND PARKS
523 EAST CAPITOL AVENUE | PIERRE, SD 57501

March 6, 2019

Joanne Hight
SD Department of Transportation
700 E. Broadway Avenue
Pierre, SD 57501

RE: Project P 1360(02) PCN 06JQ Lincoln County
I20 – 85th St Interchange; 85th St (270th street) – Fm Sundowner Avenue E 1 mile to Tallgrass Avenue in Sioux Falls
Preliminary Engineering

Dear Joanne,

The Department of Game, Fish and Parks has reviewed the above project involving preliminary engineering on I29 in Sioux Falls, South Dakota.

Based on the information provided, there is no anticipated significant impact to fish and wildlife resources and would anticipate that to remain if the following suggestions are considered during the planning and construction of the project.

1. Disturbance to riparian and wetland areas should be kept to an absolute minimum.
2. If riparian vegetation is lost it should be quantified and replaced on site. Seeding of indigenous species should be accomplished immediately after construction to reduce sediment and erosion.
3. A site specific sediment and erosion control plan should be part of the project.
4. A post construction erosion control plan should be implemented in order to provide interim control prior to re-establishing permanent vegetative cover on the disturbed site.
5. If wetland areas are encountered by the project we first recommend avoidance, followed by minimization of impacts followed by mitigation (replacement of lost acres).

If you have any questions, please feel free to contact me at 605-773-6208.

Sincerely,

Hilary Meyer
Environmental Review Senior Biologist
523 East Capitol Avenue
Pierre, SD 57501
hilary.meyer@state.sd.us

YANKTON SIOUX TRIBE
TRIBAL HISTORIC PRESERVATION OFFICE
800 S. Main ■ PO BOX 1153 ■ Wagner, South Dakota 57380 ■ 605.384.3641

March 20, 2019

South Dakota Department of Transportation
Environmental Office
700 E. Broadway Ave.
Pierre, SD 57501-2586

RE: Project P 1360(02), PCN 06JQ, Lincoln County

Dear Madam,

We have reviewed the documentation for the referenced project(s). Based on the information provided, we would like to notify you the Yankton Sioux Tribe Tribal Historic Preservation Office does not have interest in the proposed project at this time but would like to be notified if any cultural artifacts are found.

Please retain this letter in your files as compliance with Section 106 of the National Historic Preservation Act of 1966, as amended. Finally, be advised that this correspondence is not consultation with the Yankton Sioux Tribe. The Ihanktonwan Consultation Wo'ope (Protocols for Consultation with the Yankton Sioux Tribe) are attached for your reference. Thank you for your cooperation. If there are any questions or concerns, please do not hesitate to contact us at our office by phone at 605-384-3641 ext. 1032/1033 or by e-mail at yst.thpo@gmail.com.

Sincerely,

Kip Spotted Eagle

Kip Spotted Eagle, THPO Director
Tribal Historic Preservation Office
Yankton Sioux Tribe of South Dakota

Ihanktonwan Consultation Wo'ope

Protocols for Consultation with the Yankton Sioux Tribe

I. Purpose

The purpose of these protocols is to provide federal agencies with standards with which they must comply when engaging in consultation with the Yankton Sioux Tribe ("Tribe") in order to ensure that consultation is meaningful and will fulfill the purpose and intent of Executive Order 13175 as well as applicable federal statutes, regulations, and agency policies, manuals, and Secretarial Orders. Consultation shall create understanding, commitment, and trust between the parties, and should be used to identify opportunities and solve problems.

II. Scope

The scope of these consultation protocols includes any and all consultation for both federal undertakings, as defined by 36 C.F.R. § 800.16(Y), and other "policies that have tribal implications," as that phrase is defined in Executive Order 13175.

These consultation protocols apply to any effort by a federal agency to consult with the Yankton Sioux Tribe pursuant to federal law(s), including but not limited to the National Environmental Policy Act implementing regulations (40 C.F.R. Part 1500), the National Historic Preservation Act (16 U.S.C. § 470 et seq.) and implementing regulations (36 C.F.R. Part 800), the Native American Graves Protection and Repatriation Act (25 U.S.C. § 3001 et seq.) and implementing regulations (43 C.F.R. Part 10), the American Indian Religious Freedom Act (42 U.S.C. §§ 1996 & 1996a), the Archeological Resources Protection Act of 1979 (16 U.S.C. §§ 470aa-mm), Executive Order 13175, and Executive Order 12989. For purposes of these protocols, "agency" means any authority of the United States that is an "agency" under 44 U.S.C. § 3502(1).

III. Protocols

A. Cultural Protocols

1. Relationship-building should be at the center of any consultation, as this is a primary cultural protocol for the Ihanktonwan ("Yankton"). Relationship building cannot occur through just one meeting, or by telephone or email. It requires time, trust, and respect for the relationship.

2. Agencies must recognize that water is viewed as the first medicine, and it must be honored and protected. Water is vital to the spiritual practices, culture, and health of the Ihanktonwan.

3. Agencies shall respect the fact that Yankton Sioux Tribal members have experience and knowledge that makes them uniquely qualified to identify Ihanktonwan cultural resources, and shall weigh their views accordingly.

4. Agencies must recognize that certain members of the Tribe possess inherent abilities and historical knowledge passed down through generations that make those tribal members uniquely equipped and able to identify sites of spiritual, cultural, and historical interest. These skills and knowledge should be utilized through tribal surveys of areas that may be impacted by a proposed action.

5. Agencies must recognize and respect the cultural practice of speaking in a "circular" manner, which may mean that it takes time for a speaker to arrive at the ultimate point but which conveys relevant information necessary to a proper understanding of that point.

6. Elders must be respected.

7. Agencies must recognize that the Ihanktonwan practice reciprocity, which means that if remains are unearthed, something must be given back in return to restore balance. There are consequences dictated by the universe for disturbing graves and remains, and this must be avoided.

8. Agencies must respect the practice of making offerings.

9. Sharing a meal at the conclusion of a meeting is customary and expected.

B. Behavioral Protocols

1. Parties shall respect each participant and respect each other's diversity.

2. Parties shall speak with respect, courtesy, dignity, care, and moderation to maintain an amicable atmosphere.

3. Parties shall avoid the use of language of dominance and/or oppression.

4. Parties shall refrain from disruptive gestures or actions.

5. Parties shall avoid tactics to induce intimidation. This includes manner of dress. Parties should dress in civilian clothing or dress uniform. Fatigues must not be worn.

6. Parties shall treat everyone involved in a consultation meeting, particularly elders, with respect.

7. When an individual is speaking, all parties must refrain from interrupting that individual.

8. Parties shall not be dismissive of any statement made, but rather, shall acknowledge and value all contributions and bring them into consideration in any decision.

9. Parties shall refrain from reaching any decision until consultation has concluded and sufficient information has been exchanged.

10. Parties shall contribute and express opinions with complete freedom.

11. Parties shall carefully examine the views of others and accept valid points when made by others.

12. Parties shall focus on the subject of the consultation and avoid extraneous conversation.

C. Procedural Protocols

1. Consultation shall only include government-to-government, in-person meetings with the Tribe's General Council. Consultation shall not be conducted via telephone or written correspondence unless expressly agreed to by the Chairman of the Tribe in writing.

2. A meeting shall not be considered consultation unless the relevant federal agency is represented at the meeting by an individual with decision-making authority over the proposed federal action at issue.

3. If more than one agency is involved in the federal activity at issue, each agency shall be responsible for fulfilling consultation requirements for any activity under its respective authority. Agencies may appoint a lead agency to coordinate and lead tribal consultation; however, all involved agencies shall participate directly in consultation.

4. Multi-tribal or public meetings shall not be considered consultation unless expressly agreed to by the Chairman of the Tribe in writing unless the meeting is comprised exclusively of the federal agency and the Oceti Sakowin.

5. The consultation process shall commence as early as possible. Initial notification by a federal agency to the Tribe of a proposed action shall occur within two weeks of the federal agency becoming aware of the proposed action.

6. A federal agency shall contact the Chairman of the Tribe and the Ihanktonwan Treaty Steering Committee for the Tribe to notify the Tribe of a proposed federal action and initiate the consultation process. If the proposed federal action is expected to impact tribal cultural, spiritual, or historical resources, the federal agency shall also contact the Tribal Historic Preservation Officer. Notification pursuant to this protocol does not constitute consultation, but merely initiates the consultation process.

7. The consultation process shall include a pre-consultation meeting with the Tribe's Business and Claims Committee at which preliminary information shall be exchanged and an overview of the proposed federal action shall be provided.

8. During or prior to the pre-consultation meeting, the relevant federal agency shall inform the Tribe of the potential impacts on the Tribe of the proposed federal action.

9. During or prior to the pre-consultation meeting, the relevant federal agency shall inform the Tribe of which federal officials will make the final decision with respect to the proposed federal action.

10. Pre-consultation meetings shall be held at the Tribe's Fort Randall Casino on the first Wednesday of each month. Consultation meetings shall be held at the Tribe's Fort Randall Casino on the third Wednesday of each month. Meeting times shall be scheduled on a first-come, first-served basis. An agency shall contact the Tribe's THPO and Secretary's office to determine the next available meeting time and to schedule pre-consultation and consultation meetings.

11. Consultation meetings shall be scheduled at least thirty-five (35) days in advance to allow for adequate notice to the General Council, which is comprised of tribal members age 18 years and older and which is the governing body of the Tribe.

12. All meetings shall be opened with a prayer.

13. All meetings shall be closed with a prayer.

14. All meetings shall be followed by a meal or include a meal as part of the necessary relationship-building.

15. Consultation meetings shall not designate an end time, but shall continue until all have had an opportunity to speak.

16. The federal agency shall provide the services of a court reporter to record each consultation meeting. A transcription of each meeting shall be provided to the Tribe within ten (10) days following said consultation meeting.

17. No party shall unreasonably withhold consent to terminate consultation, but consultation shall continue until meaningful consultation has been achieved.

18. While there is no set number of meetings required for consultation to be deemed sufficient, consultation shall not be considered complete until the parties are satisfied that all necessary information has been adequately exchanged.

19. Consultation shall be completed before any federal funds are expended for the proposed federal action, before the issuance of any license or permit for the proposed federal action, and prior to the agency making any decision or taking any action regarding policies that have tribal implications.

Summary of Consultation Steps:

1. Federal agency learns of proposed federal action that may affect the Yankton Sioux Tribe.
2. Federal agency promptly (within two weeks) notifies the Chairman of the Tribe and the Ihanktonwan Treaty Steering Committee (and the Tribal Historic Preservation Officer for the Tribe if the proposed action is expected to impact tribal cultural, spiritual, or historic resources) of the proposed action. The consultation process is thus initiated.
3. The Chairman and/or his staff schedules a pre-consultation meeting.
4. A pre-consultation meeting is held.
    a. Opening Prayer
    b. Meeting
    c. Closing Prayer
    d. Meal (may also occur during the midpoint of the meeting)
5. The Chairman or his staff schedules a consultation meeting.
6. A consultation meeting is held.
    a. Opening Prayer
    b. Meeting
    c. Closing Prayer
    d. Meal (may also occur during the midpoint of the meeting)
7. Federal agency provides the Chairman of the Tribe with a transcript of the consultation meeting within 10 days.
8. Repeat steps 5-7 until meaningful consultation has been fully achieved.

D. Governmental Protocols

1. Federal agencies shall respect the unique legal and political relationship between the United States and the Tribe.

2. Consultation shall be meaningful and shall include collaboration with tribal officials.

3. The Tribe's views shall be incorporated into a federal agency's decision-making process.

4. Consultation shall be conducted and resulting agency decisions shall be made in such a way that the government-to-government relationship between the Tribe and the United States is strengthened. The Tribe shall be considered as a collaborative partner with the federal agency.

5. Federal agencies shall recognize the Tribe's right to self-government and its inherent sovereign powers. Federal agencies shall be respectful of the Tribe's sovereignty.

6. Federal agencies shall acknowledge and abide by the treaties between the United States and the Tribe.

7. Federal agency actions during and after consultation shall reflect the trust responsibility of the United States to the Tribe.

IV. Compliance

All parties shall comply with the protocols contained herein when engaging in the consultation process. Should a party fail to comply with one or more protocols, the other party shall notify the non-compliant party of the violation and the parties shall mutually agree upon a time and location for a meeting between the parties to resolve the matter. The goal of this meeting shall be to restore balance and reduce or eliminate discord by talking through the violation and reaching a mutual understanding to move forward in compliance with the protocols.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Dakota Ecological Services
420 South Garfield Avenue, Suite 400
Pierre, South Dakota 57501-5408

IN REPLY REFER TO:
P 1360(02), PCN
06JQ

May 19, 2020

Ms. Joanne Hight
South Dakota Department of Transportation
700 East Broadway Avenue
Pierre, South Dakota, 57501-2586

Dear Ms. Joanne Hight:

This letter is in response to your request received April 24, 2020 for environmental comments regarding I-29 -85th Street Interchange Preliminary Engineering and Environmental Assessment located in Lincoln and Minnehaha Counties, South Dakota.

According to the National Wetlands Inventory, (available online at www.fws.gov/wetlands/) wetlands exist within the project boundary. If a project may impact wetlands or other important fish and wildlife habitats, the U.S. Fish and Wildlife Service (Service), in accordance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347) and other environmental laws and rules, recommends complete avoidance of these areas, if possible, then minimization of any adverse impacts, and finally replacement of any lost acres, in that order. Alternatives should be examined and the least damaging practical alternative selected. If wetland impacts are unavoidable, a mitigation plan addressing the number and types of wetland acres to be impacted, and the methods of replacement should be prepared and submitted to the resource agencies for review.

The following recommendations should be implemented in the construction plans for grading/construction where wetlands exist in order to minimize potential environmental impacts:

1. Crossing of wetland basins should be done, if possible, when dry conditions exist.

2. In cases where wetland basins to be crossed are formed because of impermeable soils, the soil area should be packed to reestablish the impermeability of the basin's floor.

3. Removal of vegetation and soil should be accomplished in a manner to reduce soil erosion and to disturb as little vegetation as possible.

4. Grading operations and reseeding of native species should begin immediately following trench backfilling.

Generally, once all measures to avoid and minimize impacts to the maximum extent possible have been taken, the Service recommends mitigation in the form of restoration of drained wetlands at a ratio of 1:1. If creation of new wetlands are needed to mitigate for wetland losses, a 2:1 ratio (restored: impacted) is recommended. Created wetlands may have a lower rate of establishment success, result in a temporal delay in achieving value to wildlife, or may not contain the degree of biological diversity typically found in a natural wetland basin, thus are not preferred when considering mitigation options. Preservation of existing wetlands is also not recommended as a means of mitigation as this is not consistent with the "no net loss" of wetlands as outlined in Executive Order #11990.

Work requiring the alteration or disturbance of wetlands or streams may require a permit from the U.S. Army Corps of Engineers (Corps) according to the regulations set forth in section 10 of The Rivers and Harbors Act, or section 404 of The Clean Water Act. You may contact the Corps Regulatory Office at 28563 Powerhouse Rd, Rm 118, Pierre, SD 57501, Telephone (605) 224-8531.

The Service concurs with your conclusion that the described project will not adversely affect listed species. Contact this office if changes are made or new information becomes available.

The Service appreciates the opportunity to provide comments. If you have any questions on these comments, please contact Dylan Turner of this office at (605) 224-8693, Extension 233.

Sincerely,

Scott Larson
Field Supervisor
North and South Dakota Field Office

Department of Transportation
Environmental Office
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-4336

April 26, 2019

Scott Larson, Field Supervisor
U.S. Fish & Wildlife Service
420 Garfield - Suite 400
Pierre, SD 57501-5408

RE: Project P 1360(02), PCN 06JQ, Lincoln and Minnehaha Counties
I-29 -85th Street Interchange, City of Sioux Falls and City of Tea
Interchange Preliminary Engineering and Environmental Assessment

Dear Mr. Larson:

This letter includes information on the above project for your review and comment. Previous coordination with USFWS regarding this project occurred on February 18, 2019.

The project includes the following major components:

- Construction of a Diverging Diamond Interchange (DDI) along I-29 at 85th Street. The configuration also includes a connector ramp from southbound I-229 to the 85th Street exit ramp and a braided exit ramp from southbound I-29.
- Two-lane pavement of 270th Street from its future interchange at I-29 west to Tea/Ellis Road.
- Two-lane pavement of Sundowner Avenue from 69th Street to 270th Street

This project may impact aquatic resources. The project area contains National Wetland Inventory Wetlands. The project will be reviewed for wetland impacts, and the project will comply with all federal and state environmental regulations.

According to the U.S. Fish & Wildlife Service (FWS) IPaC Information for Planning and Conservation system, the following species are known to occur in Lincoln and Minnehaha County: (Consultation code: 06E14000-2019-SLI-0247).

Consultation Code	Species	Status	SDDOT Determination	Comments
06E14000-2019-SLI-0247	Northern Long-eared Bat	Threatened	May Affect, Not Likely to Adversely Affect	The USFWS IPaC determination key was completed for this species on April 4, 2019 and a preliminary determination of "may effect – not likely to adversely affect" was made for the project.

Department of Transportation
Environmental Office
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-4336

06E14000-2019-SLI-0247	Red Knot	Threatened	No Effect	No project impacts are expected for the Red Knot. This species is migratory and is known to avoid inhabited, urbanized areas. Although no critical habitat has been defined for this species, no shallow water is available that would support feeding during migration, making the study area an unideal stopover site.
06E14000-2019-SLI-0247	Western Prairie Fringed Orchid	Threatened	No Effect	No project impacts are expected for this species. Impacts from the project would occur primarily on cropland, which is not a suitable habitat for this species.

I am requesting FWS concurrence with the above determinations. Please provide your acknowledgment of this request at your earliest convenience. If no response is received, the project will proceed to the next step in the process based on the above determination(s).

Please submit your response so that the project's environmental documentation can be completed, and the project can be let and constructed in a timely manner.

Sincerely,

Joanne Hight
Engineering Supervisor
605.773.3721

Building a Better World for All of Us®

MEMORANDUM

TO: Joanne Hight, SDDOT Environmental Engineer Manager

FROM: Rebecca Beduhn, SEH Senior Scientist

DATE: December 27, 2019

RE: Northern Long-Eared Bat Habitat Assessment: I-29 and 85th Street Interchange
SEH No. OWNJV 149418

INTRODUCTION

The purpose of this memo is to summarize the results of a northern long-eared bat (*Myotis septentrionalis*) habitat survey for the proposed I-29 and 85th Street Interchange in Tea, South Dakota. I conducted the survey on July 28th, 2019 for structures and tree communities in the vicinity of the proposed project that may serve as habitat for northern long-eared bat. The habitat survey included several properties that may be demolished as part of the proposed project, and any trees or groups of trees within 100 feet of the proposed corridor.

The subject site is located in Sections 13, 14 of Range 51 West, Township 100 North; and Sections 18 and 19 of Range 50 West, Township 100 North in the City of Tea, Lincoln County, South Dakota as shown on **Figure 1**. The proposed interstate access location is between the service interchange of County Road 106 (271st Street) and I-29 (Exit 73) in the City of Tea, and the system interchange of I-29 and I-229 (Exit 75) in the City of Sioux Falls. The proposed 85th Street interchange would be Exit 74 on I-29.

Land use immediately surrounding the I-29/I-229 System interchange is primarily agricultural, with several single family residential homes included along portions of 85th Street. Approximately 10% of the project area is comprised of existing roadway and 10% is the adjacent roadside ditches; the remaining areas consist of approximately 20% residential developed property, and 60% agricultural land.

PURPOSE

As part of the Environmental Assessment (EA) required for this project, the Sponsor must assess the extent of potential impact to state and federally listed species. Due to declines caused by white-nose syndrome and continued spread of the disease, the northern long-eared bat was listed as threatened under the Endangered Species Act on April 2, 2015. For projects that the South Dakota Department of Transportation (SDDOT) Environmental Office has determined have potential to affect northern long-eared bats due to removal of trees and/or work on structures (bridges, culverts, or buildings), a detailed habitat assessment is required to determine whether the Northern Long-Eared Bat may or may not be present in the project limits.

This report serves to assess the habitat suitability within the study area to determine the potential for the presence of the northern long-eared bat. The presence or absence of suitable habitat determines the potential for impacts to the bat or its habitat resulting from the completion of the proposed project.

METHODOLOGY

SEH contacted the SDDOT (Joanne Hight) prior to the site visit to establish protocols and survey areas for the project needs. Based on the DOT's recommendations, the following assessment methodology was utilized to

complete the habitat assessments within the project study area.

SEH examined any structures that may be removed as part of the project for the following characteristics:

- Presence of guano or urine staining along structure walls or siding;
- Presence of bat droppings along window sills, ledges, or other areas where bat guano may collect from roosting bats,
- Presence of dead bats
- Presence of “grease” stains or makings along potential points of entry on the outside of house or outbuildings.

RESULTS

Seven (7) land parcels containing four (4) structures were surveyed within the project limits as part of the proposed project. These structures were examined closely for evidence of bat use as described above. Photographs are included as part of **Appendix A**.

47042 85th St

- There are no structures present in this lot. One home was identified in historic aerial photographs, but was removed from the site between the 2016 and 2017 aerial photography flight dates.

47036 85th St

- Two (2) structures exist on the property, one home and one small shed. The house is currently occupied. No access was granted to the house or the shed. The outside of both structures were examined closely for evidence of bat habitat and use. No evidence of bat use was found. Human disturbance inside the structure is likely.
- There were a few scattered trees around the property. These included quaking aspen (*Populus tremuloides)* and black walnut (*Juglans nigra*). They appeared healthy with no visible exfoliating bark or scars.
- This property was surveyed in 2017 by HDR. No bat habitat was recorded at that time.

47032 85th St

- Two (2) structures exist on the property, one home and one large shed. The house is currently occupied. No access was granted to the house or the shed. The outside of both structures were examined closely for evidence of bat habitat and use. No evidence of bat use was found. Human disturbance inside the structure is likely.
- There are several trees around the perimeter the property limits. It is not likely these trees are suitable as bat habitat. These included green ash (*Fraxinus pennsylvanica*), quaking aspen, and boxelder (*Acer negundo).* They appeared healthy with no visible exfoliating bark or scars.
- This property was surveyed in 2017 by HDR. No bat habitat was recorded at that time.

47030 85th St

- There are no structures present in this lot. One home was identified in historic aerial photographs, but was removed from the site between the 2016 and 2017 aerial photography flight dates.

47028 85th St

- There are no structures present in this lot. One home was identified in historic aerial photographs, but was removed from the site between the 2016 and 2017 aerial photography flight dates.

47024 85th St

- There are no structures present in this lot. One home was identified in historic aerial photographs, but was removed from the site between the 2016 and 2017 aerial photography flight dates.

47012 85th St

- Three (3) structures exist on the property, one home, and two large sheds. The house is currently occupied. No access was granted to the house or the sheds. The outside of the structures were examined closely for evidence of bat habitat and use. No evidence of bat use was found. Human disturbance inside the structure is likely.
- There are several trees around the perimeter the property limits. These included quaking aspen, green ash, other unidentifiable deciduous, and an identifiable spruce. It is not likely these trees are suitable as bat habitat.

Tree Habitat

There is no suitable tree habitat present in the proposed project area of investigation.

CONCLUSION

No evidence of bat use was found at the surveyed structures within the project area. The trees present in the area were all younger or smooth barked species and had no large cracks, cavities, or peeling bark. No evidence of bat use was found at these tree stands. It is our understanding that since the project is not anticipated to have impacts on state or federally listed species, that this Habitat Assessment Survey will fulfill the obligations of the Environmental Assessment to investigate for the northern long-eared bat and its associated habitat prior to commencing construction.

FIGURES

Figure 1 – Project Location
Figure 2 – Habitat Assessment Areas of Investigation

Appendix A – Assessment Forms

RB

c: Ross Harris, SEH
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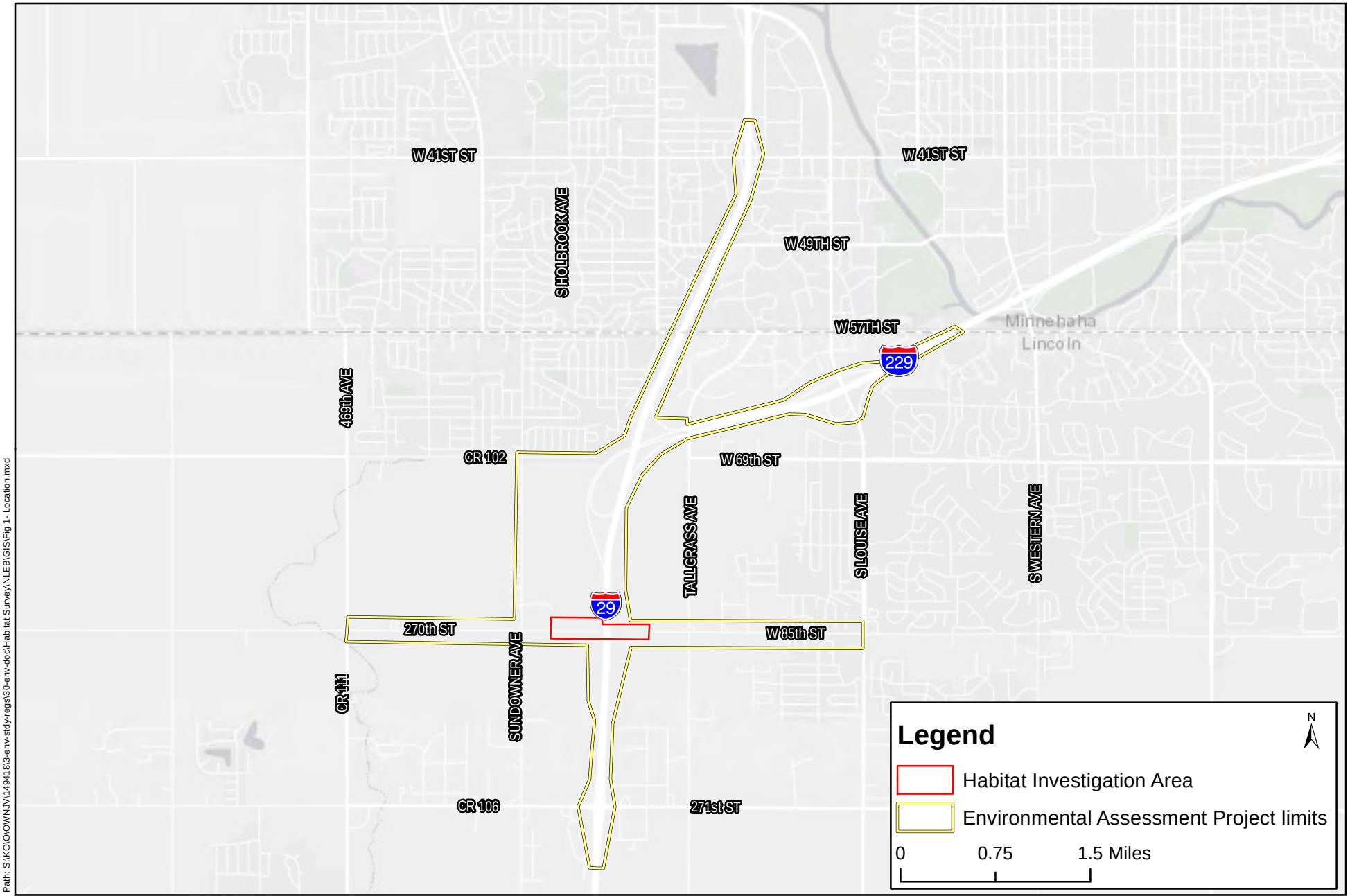

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SEH

3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110
PHONE: (651) 490-2000
FAX: (651) 490-2150
WATTS: 800-325-2055
www.sehinc.com

Project: OWNJV 149418
Print Date: 9/11/2019

Map by: rbeduhn
Projection: UTM NAD 83 Zone 14N
Source: SEH, ESRI, Google

Project Location

Northern Long-Eared Bat Habitat Assessment: I-29 and 85th Street Interchange
Tea, Lincoln County, South Dakota

Figure 1

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SEH
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110
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Project: OWNJV 149418
Print Date: 9/11/2019

Map by: rbeduhn
Projection: UTM NAD 83 Zone 14N
Source: SEH, ESRI, Google

Habitat Assessment Areas of Investigation

Northern Long-Eared Bat Habitat Assessment: I-29 and 85th Street Interchange
Tea, Lincoln County, South Dakota

Figure 2

Phase I Summer Habitat Assessments
Northern Long-Eared Bat Habitat Assessment Data Sheet

South Dakota Department of Transportation
Office of Project Development-Environmental
Becker-Hansen Building
700 E. Broadway Ave.
Pierre, SD 57501-2586

Date: 07 / 25 / 19

Surveyor: Rebecca Beduhn, SEH
Phone (605) 773-3721
http://www.sddot.com/business/environmental/Default.aspx

General Project Information

Project/PCN I-29 and 85th Street Interchange
Station #
MRM #
Structure # 47012 85th St

County Lincoln

Multiple Sample Sites? ○ Yes, See Comments ◉ No

Brief Project Description

The proposed project consists of the construction of a new diverging diamond interchange at the planned 85th Street crossing of I-29, including new ramp access to the I-29 and I-229 Systems interchange, an auxiliary lane to I-229, and the repaving of the northbound I-229 and Louise Avenue exit ramp.

Buildings on this site may be removed as part of the construction of the new interchange.

Project Area

	Total acres	Forest acres	Open acres
Project (Acres of site being surveyed)	4.93	0.28	3.12

	Completely Cleared	Partially Cleared (Leave Some trees)	Preserve acres (no clearing)
Proposed tree removal (acres) ☐ No Removal			

Vegetation cover types

Pre-project	Mixed Grass	-	-	-	-
	-	-	-	-	-

Post-project

Vegetation will be similar post project. Disturbed areas will be re-vegetated post-construction.

Landscape within 5-Mile Radius

Flight corridors to other forested areas? (If yes, Describe. e.g. shelterbelt, forested, forested creek bottom, forested river bottom)

○ Yes ◉ No

Describe adjacent properties (e.g., forested, grassland, commercial or residential development, water sources).

Residential Residential Residential

Proximity to public land (15 Mile Radius)

What is the distance in miles from the project area to forested public lands (e.g., national or state forests, national or state parks, conservation areas or wildlife management areas)?

No Section 4(f) resources exist within the study area. However, several parks, including Sertoma Park, Oxbow Park, Yankton Trail Park, lie adjacent to or are in close proximity to the study area. These parks qualify as protected section 4(f) resources.

The closest park is located approximately 3.75 miles northeast of the project.

Northern Long-Eared Bat Habitat Assessment Data Sheet (continued)

Additional information about discreet habitat types at multiple sites

Use additional sheets to assess discrete habitat types at multiple sites in a project area. Include a map depicting sample sites in project area. A single sheet can be used for multiple sample sites if the habitat is the same.

Sample Site Description (Station # / MRM#)

Sample site no.

Sample site no.

Water Resources at Sample Site

Stream type (# and length in FT)	Ephemeral	Intermittent	Perennial
	--	--	--

Describe existing condition of water sources

Pools/ponds (# and size in acres)	Open and accessible to bats?
	N/A

○ _____ provides potential summer water source.

Wetlands (Approx. acres)	Permanent	Seasonal

◉ No Water Source

Forest Resources at Sample Site

Closure/density (Use 1-6 from far right table)	Canopy (>50')	Midstory (20-50')	Understory (<20')
	1	1	
Dominant species of mature trees	Other Deciduous	Green Ash	
% of trees with exfoliating bark	0	0	

1=1-10%, 2=11-20%, 3=21-40%, 4=41-60%, 5=61-80%, 6=81-100%

Size composition of live trees (%)	Small (3-8 in.)	Med. (9-15 in.)	Large (>15 in.)
	95	5	

Total # of suitable snags: 0

☑ No Forest Resources

(Suitable snags are standing dead trees with exfoliating bark, cracks, crevices or hollows.)

Conclusion

IS THE HABITAT SUITABLE FOR NORTHERN LONG-EARED BATS? No

Additional comments:

There are trees lining the property. Species present include: Quaking Aspen (*Populus tremuloides*), Green Ash (*Fraxinus pennsylvanica*), other deciduous, and an identifiable spruce. No evidence of large cracks or peeling bark was observed, which makes it non-suitable for future bat use.

The structure on the property was closely examined for signs of NLEB. No evidence of bat habitat was located on the property.

Attach aerial map of project site with all forested areas labeled and a general description of the habitat.

Photographic documentation should include: habitat shots at edge and interior from multiple locations; canopy, midstory, understory; examples of potential suitable snags and live trees; and water resources.

47012 85th St


47012

Phase I Summer Habitat Assessments
Northern Long-Eared Bat Habitat Assessment Data Sheet

South Dakota Department of Transportation
Office of Project Development-Environmental
Becker-Hansen Building
700 E. Broadway Ave.
Pierre, SD 57501-2586

Date: 07 / 25 / 19

Surveyor: Rebecca Beduhn, SEH
Phone (605) 773-3721
http://www.sddot.com/business/environmental/Default.aspx

General Project Information

Project/PCN I-29 and 85th Street Interchange
Station #
MRM #
Structure # 47032 85th St

County Lincoln

Multiple Sample Sites? ○ Yes, See Comments ◉ No

Brief Project Description

The proposed project consists of the construction of a new diverging diamond interchange at the planned 85th Street crossing of I-29, including new ramp access to the I-29 and I-229 Systems interchange, an auxiliary lane to I-229, and the repaving of the northbound I-229 and Louise Avenue exit ramp.

Buildings on this site may be removed as part of the construction of the new interchange.

Project Area

	Total acres	Forest acres	Open acres
Project (Acres of site being surveyed)	2.47	0.33	1.78

	Completely Cleared	Partially Cleared (Leave Some trees)	Preserve acres (no clearing)
Proposed tree removal (acres) ☐ No Removal			

Vegetation cover types

Pre-project	Mixed Grass	-	-	-	-
	-	-	-	-	-

Post-project

Vegetation will be similar post project. Disturbed areas will be re-vegetated post-construction.

Landscape within 5-Mile Radius

Flight corridors to other forested areas? (If yes, Describe. e.g. shelterbelt, forested, forested creek bottom, forested river bottom)

○ Yes ◉ No

Describe adjacent properties (e.g., forested, grassland, commercial or residential development, water sources).

Residential Residential Residential

Proximity to public land (15 Mile Radius)

What is the distance in miles from the project area to forested public lands (e.g., national or state forests, national or state parks, conservation areas or wildlife management areas)?

No Section 4(f) resources exist within the study area. However, several parks, including Sertoma Park, Oxbow Park, Yankton Trail Park, lie adjacent to or are in close proximity to the study area. These parks qualify as protected section 4(f) resources.

The closest park is located approximately 3.75 miles northeast of the project.

Northern Long-Eared Bat Habitat Assessment Data Sheet (continued)

Additional information about discreet habitat types at multiple sites

Use additional sheets to assess discrete habitat types at multiple sites in a project area. Include a map depicting sample sites in project area. A single sheet can be used for multiple sample sites if the habitat is the same.

Sample Site Description (Station # / MRM#)

Sample site no.

Sample site no.

Water Resources at Sample Site

Stream type (# and length in FT)	Ephemeral	Intermittent	Perennial
	--	--	--

Pools/ponds (# and size in acres)	Open and accessible to bats?
	N/A

Wetlands (Approx. acres)	Permanent	Seasonal

Describe existing condition of water sources

○ _____ provides potential summer water source.

◉ No Water Source

Forest Resources at Sample Site

Closure/density (Use 1-6 from far right table)	Canopy (>50')	Midstory (20-50')	Understory (<20')
	2		
Dominant species of mature trees	Green Ash		-
% of trees with exfoliating bark	0		

1=1-10%, 2=11-20%, 3=21-40%, 4=41-60%, 5=61-80%, 6=81-100%

Size composition of live trees (%)	Small (3-8 in.)	Med. (9-15 in.)	Large (>15 in.)
	95	5	

Total # of suitable snags: 0

☑ No Forest Resources

(Suitable snags are standing dead trees with exfoliating bark, cracks, crevices or hollows.)

Conclusion

IS THE HABITAT SUITABLE FOR NORTHERN LONG-EARED BATS? No

Additional comments:

There are trees lining the property. Tree species include: Green Ash, Quaking Aspen, and Boxelder (*Acer negundo*). The trees in the stand were closely examined for signs of NLEB. There was no evidence of current bat use. No evidence of large cracks or peeling bark was observed, which makes it non-suitable for future bat use.

The structure on the property was closely examined for signs of NLEB. No evidence of bat habitat was located on the property.

Attach aerial map of project site with all forested areas labeled and a general description of the habitat.

Photographic documentation should include: habitat shots at edge and interior from multiple locations; canopy, midstory, understory; examples of potential suitable snags and live trees; and water resources.

47032 85th St

Phase I Summer Habitat Assessments
Northern Long-Eared Bat Habitat Assessment Data Sheet

South Dakota Department of Transportation
Office of Project Development-Environmental
Becker-Hansen Building
700 E. Broadway Ave.
Pierre, SD 57501-2586

Date: 07 / 25 / 19

Surveyor: Rebecca Beduhn, SEH
Phone (605) 773-3721
http://www.sddot.com/business/environmental/Default.aspx

General Project Information

Project/PCN I-29 and 85th Street Interchange
Station #
MRM #
Structure # 47036 85th St

County Lincoln

Multiple Sample Sites? ○ Yes, See Comments ◉ No

Brief Project Description

The proposed project consists of the construction of a new diverging diamond interchange at the planned 85th Street crossing of I-29, including new ramp access to the I-29 and I-229 Systems interchange, an auxiliary lane to I-229, and the repaving of the northbound I-229 and Louise Avenue exit ramp.

Buildings on this site may be removed as part of the construction of the new interchange.

Project Area

	Total acres	Forest acres	Open acres
Project (Acres of site being surveyed)	3.34	0.01	3.06

	Completely Cleared	Partially Cleared (Leave Some trees)	Preserve acres (no clearing)
Proposed tree removal (acres) ☐ No Removal			

Vegetation cover types

Pre-project	Mixed Grass	-	-	-	-
	-	-	-	-	-

Post-project

Vegetation will be similar post project. Disturbed areas will be re-vegetated post-construction.

Landscape within 5-Mile Radius

Flight corridors to other forested areas? (If yes, Describe. e.g. shelterbelt, forested, forested creek bottom, forested river bottom)

○ Yes ◉ No

Describe adjacent properties (e.g., forested, grassland, commercial or residential development, water sources).

Residential Residential Residential

Proximity to public land (15 Mile Radius)

What is the distance in miles from the project area to forested public lands (e.g., national or state forests, national or state parks, conservation areas or wildlife management areas)?

No Section 4(f) resources exist within the study area. However, several parks, including Sertoma Park, Oxbow Park, Yankton Trail Park, lie adjacent to or are in close proximity to the study area. These parks qualify as protected section 4(f) resources.

The closest park is located approximately 3.75 miles northeast of the project.

Northern Long-Eared Bat Habitat Assessment Data Sheet (continued)

Additional information about discreet habitat types at multiple sites

Use additional sheets to assess discrete habitat types at multiple sites in a project area. Include a map depicting sample sites in project area. A single sheet can be used for multiple sample sites if the habitat is the same.

Sample Site Description (Station # / MRM#)

Sample site no.

Sample site no.

Water Resources at Sample Site

Stream type (# and length in FT)	Ephemeral	Intermittent	Perennial
	--	--	--

Pools/ponds (# and size in acres)	Open and accessible to bats?
	N/A

Wetlands (Approx. acres)	Permanent	Seasonal

Describe existing condition of water sources

○ _____

provides potential summer water source.

◉ No Water Source

Forest Resources at Sample Site

Closure/density (Use 1-6 from far right table)	Canopy (>50')	Midstory (20-50')	Understory (<20')
	1		

1=1-10%, 2=11-20%, 3=21-40%, 4=41-60%, 5=61-80%, 6=81-100%

Dominant species of mature trees	Other Deciduous

% of trees with exfoliating bark	0

Size composition of live trees (%)	Small (3-8 in.)	Med. (9-15 in.)	Large (>15 in.)
		50	50

Total # of suitable snags	0

☑ No Forest Resources

(Suitable snags are standing dead trees with exfoliating bark, cracks, crevices or hollows.)

Conclusion

IS THE HABITAT SUITABLE FOR NORTHERN LONG-EARED BATS? No

Additional comments:

There are some trees on the property. Species include Quaking Aspen and Black Walnut (*Juglans nigra*). The trees in the stand were closely examined for signs of NLEB. There was no evidence of current bat use. No evidence of large cracks or peeling bark was observed, which makes it non-suitable for future bat use.

The structure on the property was closely examined for signs of NLEB. No evidence of bat habitat was located on the property.

Attach aerial map of project site with all forested areas labeled and a general description of the habitat.

Photographic documentation should include: habitat shots at edge and interior from multiple locations; canopy, midstory, understory; examples of potential suitable snags and live trees; and water resources.

47036 85th St

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Dakota Ecological Services Field Office
420 South Garfield Avenue, Suite 400
Pierre, SD 57501-5408
Phone: (605) 224-8693 Fax: (605) 224-1416
http://www.fws.gov/southdakotafieldoffice/

In Reply Refer To: February 07, 2022
Project Code: 2022-0004099
Project Name: I-29 and 85th Street Interchange Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Migratory Bird Treaty Act (16 U.S.C. §§ 703-712, as amended), as well as the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). Projects affecting these species may benefit from the development of an Eagle Conservation Plan (ECP), see guidance at this website (http://www.fws.gov/windenergy/eagle_guidance.html). An ECP can assist developers in achieving compliance with regulatory requirements, help avoid “take” of eagles at project sites, and provide biological support for eagle permit applications. Additionally, we recommend wind energy developments adhere to our

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

South Dakota Ecological Services Field Office
420 South Garfield Avenue, Suite 400
Pierre, SD 57501-5408
(605) 224-8693

Project Summary

Project Code: 2022-0004099
Event Code: None
Project Name: I-29 and 85th Street Interchange Project
Project Type: New Construction
Project Description: Construction of a Diverging Diamond Interchange along I-29 at 85th Street. Also includes a connector ramp from southbound I-229 to the 85th Street exit ramp and a braided exit ramp from southbound I-29.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@43.4871663832899,-96.80016491603735,14z

Counties: Lincoln and Minnehaha counties, South Dakota

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Western Prairie Fringed Orchid *Platanthera praeclara*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/1669

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31
Black Tern *Chlidonias niger* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3093	Breeds May 15 to Aug 20

NAME	BREEDING SEASON
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Eastern Whip-poor-will *Antrostomus vociferus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Aug 20
Franklin's Gull *Leucophaeus pipixcan* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Golden-winged Warbler *Vermivora chrysoptera* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Hudsonian Godwit *Limosa haemastica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Le Conte's Sparrow *Ammodramus leconteii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 1 to Aug 15
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Ruddy Turnstone *Arenaria interpres morinella* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

■ probability of presence ■ breeding season | survey effort – no data

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php

- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab

of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be

aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER POND

- Palustrine

RIVERINE

- Riverine

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Dakota Ecological Services Field Office
420 South Garfield Avenue, Suite 400
Pierre, SD 57501-5408
Phone: (605) 224-8693 Fax: (605) 224-1416
http://www.fws.gov/southdakotafieldoffice/

In Reply Refer To: April 14, 2020
Consultation Code: 06E14000-2019-TA-0247
Event Code: 06E14000-2020-E-01664
Project Name: I-29 and 85th Street Interchange Project

Subject: Verification letter for the 'I-29 and 85th Street Interchange Project' project under the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-eared Bat and Activities Excepted from Take Prohibitions.

Dear Martin Falk:

The U.S. Fish and Wildlife Service (Service) received on April 14, 2020 your effects determination for the 'I-29 and 85th Street Interchange Project' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. This IPaC key assists users in determining whether a Federal action is consistent with the activities analyzed in the Service's January 5, 2016, Programmatic Biological Opinion (PBO). The PBO addresses activities excepted from "take"[1] prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, the Action is consistent with activities analyzed in the PBO. The Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the PBO satisfies and concludes your responsibilities for this Action under ESA Section 7(a)(2) with respect to the northern long-eared bat.

Please report to our office any changes to the information about the Action that you submitted in IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation. If the Action is not completed within one year of the date of this letter, you must update and resubmit the information required in the IPaC key.

This IPaC-assisted determination allows you to rely on the PBO for compliance with ESA Section 7(a)(2) only for the northern long-eared bat. It **does not** apply to the following ESA-protected species that also may occur in the Action area:

- Red Knot, *Calidris canutus rufa* (Threatened)
- Western Prairie Fringed Orchid, *Platanthera praeclara* (Threatened)

If the Action may affect other federally listed species besides the northern long-eared bat, a proposed species, and/or designated critical habitat, additional consultation between you and this Service office is required. If the Action may disturb bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act is recommended.

---

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

I-29 and 85th Street Interchange Project

2. Description

The following description was provided for the project 'I-29 and 85th Street Interchange Project':

> Construction of a Diverging Diamond Interchange along I-29 at 85th Street. Also includes a connector ramp from southbound I-229 to the 85th Street exit ramp and a braided exit ramp from southbound I-29.

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/43.48690206655453N96.80025431804017W

Determination Key Result

This Federal Action may affect the northern long-eared bat in a manner consistent with the description of activities addressed by the Service's PBO dated January 5, 2016. Any taking that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o). Therefore, the PBO satisfies your responsibilities for this Action under ESA Section 7(a)(2) relative to the northern long-eared bat.

Determination Key Description: Northern Long-eared Bat 4(d) Rule

This key was last updated in IPaC on May 15, 2017. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for Federal actions is to assist determinations as to whether proposed actions are consistent with those analyzed in the Service's PBO dated January 5, 2016.

Federal actions that may cause prohibited take of northern long-eared bats, affect ESA-listed species other than the northern long-eared bat, or affect any designated critical habitat, require ESA Section 7(a)(2) consultation in addition to the use of this key. Federal actions that may affect species proposed for listing or critical habitat proposed for designation may require a conference under ESA Section 7(a)(4).

Determination Key Result

This project may affect the threatened Northern long-eared bat; therefore, consultation with the Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.) is required. However, based on the information you provided, this project may rely on the Service's January 5, 2016, *Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions* to fulfill its Section 7(a)(2) consultation obligation.

Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?

   Yes

2. Have you determined that the proposed action will have "no effect" on the northern long-eared bat? (If you are unsure select "No")

   No

3. Will your activity purposefully **Take** northern long-eared bats?

   No

4. Is the project action area located wholly outside the White-nose Syndrome Zone?

   Automatically answered
   No

5. Have you contacted the appropriate agency to determine if your project is near a known hibernaculum or maternity roost tree?

   Location information for northern long-eared bat hibernacula is generally kept in state Natural Heritage Inventory databases – the availability of this data varies state-by-state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited. A web page with links to state Natural Heritage Inventory databases is available at www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html.

   Yes

6. Will the action affect a cave or mine where northern long-eared bats are known to hibernate (i.e., hibernaculum) or could it alter the entrance or the environment (physical or other alteration) of a hibernaculum?

   No

7. Will the action involve Tree Removal?

   Yes

8. Is the action the removal of hazardous trees for protection of human life or property?

   No

9. Will the action remove trees within 0.25 miles of a known northern long-eared bat hibernaculum at any time of year?

   No

10. Will the action remove a known occupied northern long-eared bat maternity roost tree or any trees within 150 feet of a known occupied maternity roost tree from June 1 through July 31?

    No

Project Questionnaire

If the project includes forest conversion, report the appropriate acreages below. Otherwise, type ‘0’ in questions 1-3.

1. Estimated total acres of forest conversion:

0

2. If known, estimated acres of forest conversion from April 1 to October 31

0

3. If known, estimated acres of forest conversion from June 1 to July 31

0

If the project includes timber harvest, report the appropriate acreages below. Otherwise, type ‘0’ in questions 4-6.

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type ‘0’ in questions 7-9.

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type ‘0’ in question 10.

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?
0

USDA

United States Department of Agriculture

February 10, 2022

Mr. Kit Bramblee
South Dakota Department of Transportation
Environmental Office
700 E Broadway Avenue
Pierre, South Dakota 57501

RE: Environmental Review for:
Sioux Falls_Tea Project P1360_02_PCN 06JQ

Dear Mr. Bramblee:

Thank you for the opportunity to provide Farmland Protection Policy Act (FPPA) review of this project.

The project **does** impact prime farmland and land of statewide importance. Enclosed is a Web Soil Survey map delineating the FPPA farmland classifications of the proposed site. Also enclosed is a Farmland Conversion Impact Rating Form (AD-1006) for this project. We have completed Parts II, IV, and V. Please complete Parts I, III, VI, and VII as per instructions on the back of the form and the attached document titled **Site Assessment Scoring for the Twelve Factors Used in FPPA**. If the TOTAL POINTS in Part VII is less than 160 points, the proposed activity will have no significant impact on the prime farmland or farmland of statewide importance in Lincoln County, and no further alternatives need be considered.

The Natural Resources Conservation Service (NRCS) would advise the applicant to consult with the local NRCS and Farm Service Agency offices regarding any United States Department of Agriculture easements or contracts in the project areas that may be affected. For any other easements outside of the NRCS, you should check with the local courthouse.

If you have any questions, please contact me at (605) 352-1234.

Sincerely,

Jessica Michalski

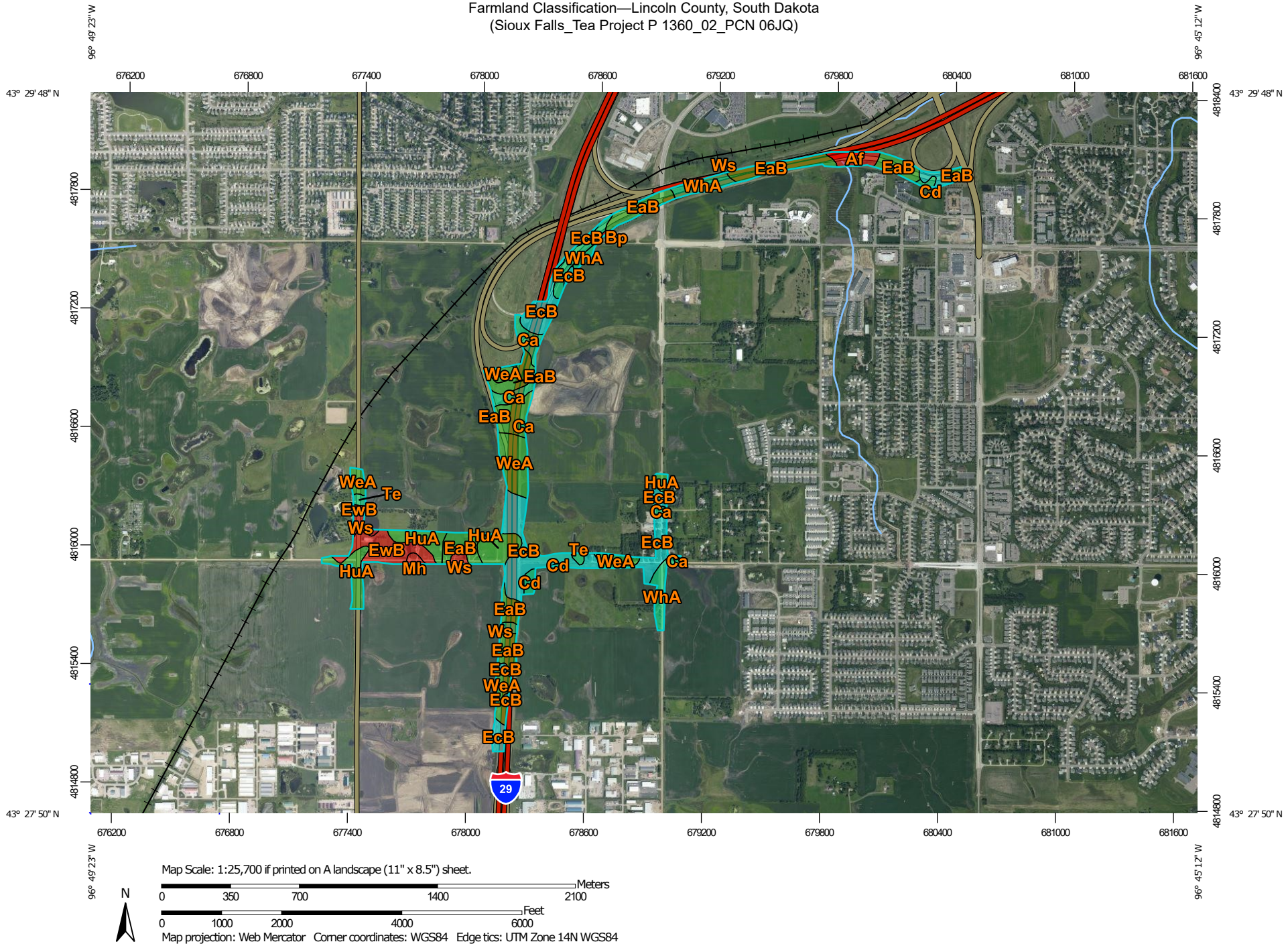
JESSICA MICHALSKI
State Resource Conservationist

Attachments

cc:
Nathan Jones, State Soil Scientist, NRCS, Huron SO

Natural Resources Conservation Service
414 E Stumer Road, Suite 700
Voice: (605)858-6670 Fax: 855.256.2553

Farmland Classification—Lincoln County, South Dakota
(Sioux Falls_Tea Project P 1360_02_PCN 06JQ)



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

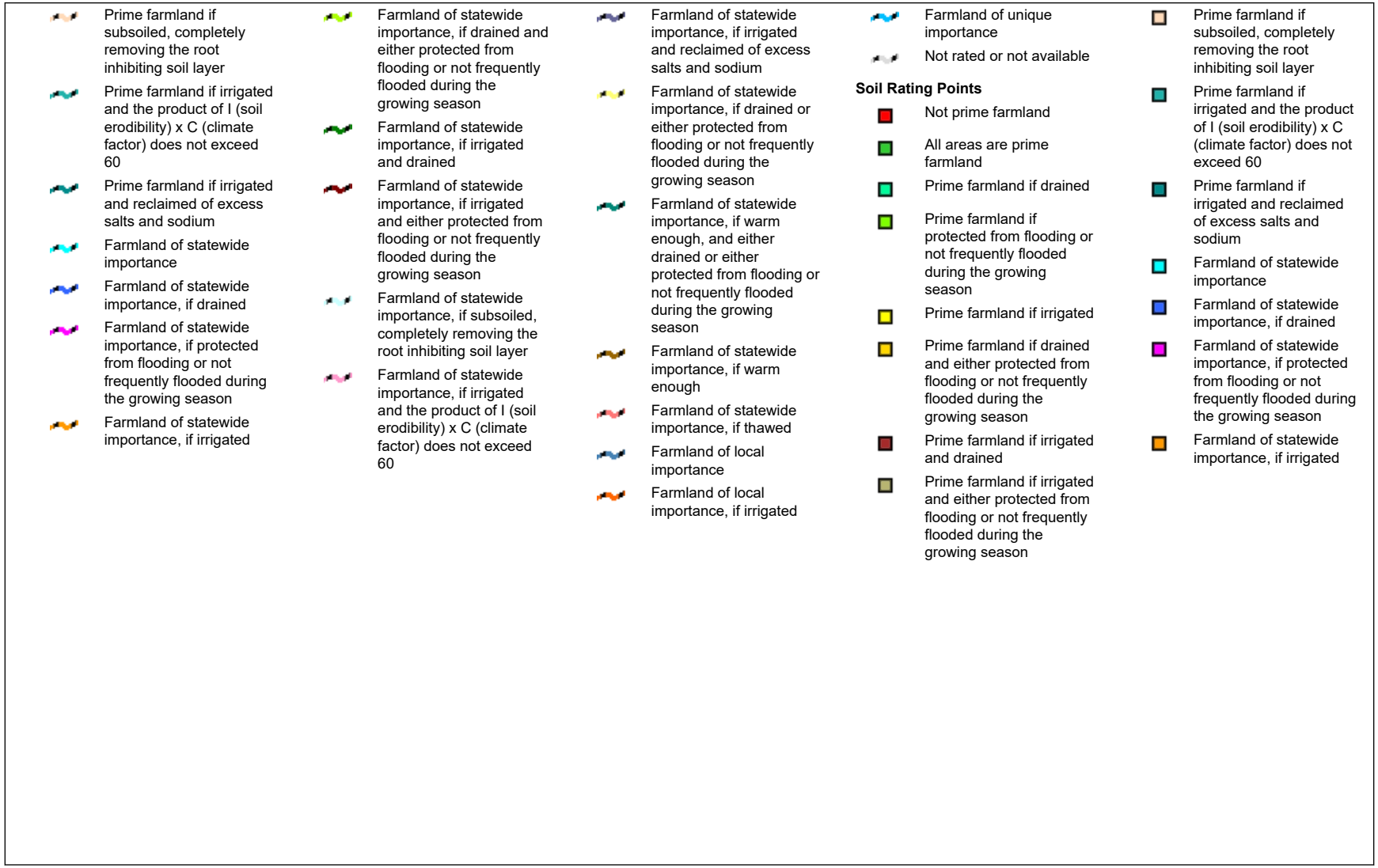
Soils

Soil Rating Polygons

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated
- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Soil Rating Lines

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season


Prime farmland if subsoiled, completely removing the root inhibiting soil layer
Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Prime farmland if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance
Farmland of statewide importance, if drained
Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated
Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated and drained
Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if warm enough
Farmland of statewide importance, if thawed
Farmland of local importance
Farmland of local importance, if irrigated
Farmland of unique importance
Not rated or not available
Soil Rating Points
Not prime farmland
All areas are prime farmland
Prime farmland if drained
Prime farmland if protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated
Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated and drained
Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
Prime farmland if subsoiled, completely removing the root inhibiting soil layer
Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Prime farmland if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance
Farmland of statewide importance, if drained
Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated

- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lincoln County, South Dakota
Survey Area Data: Version 23, Sep 13, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 24, 2018—Aug 9, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Af	Alcester silty clay loam, channeled	Not prime farmland	4.2	2.4%
Bp	Orthents, loamy	Not prime farmland	0.3	0.2%
Ca	Chancellor-Tetonka complex, 0 to 2 percent slopes	Prime farmland if drained	14.6	8.5%
Cd	Chancellor-Viborg silty clay loams	Prime farmland if drained	2.5	1.5%
EaB	Egan silty clay loam, 3 to 6 percent slopes	All areas are prime farmland	43.1	25.1%
EcB	Egan-Chancellor silty clay loams, 0 to 4 percent slopes	Farmland of statewide importance	36.1	21.0%
EsC	Egan-Shindler complex, 6 to 9 percent slopes	Farmland of statewide importance	2.2	1.3%
EwB	Egan-Worthing complex, 0 to 6 percent slopes	Not prime farmland	11.9	6.9%
HuA	Huntimer silty clay loam, 0 to 2 percent slopes	All areas are prime farmland	19.5	11.4%
Mh	Baltic silty clay loam, ponded	Not prime farmland	1.0	0.6%
Te	Tetonka silt loam, 0 to 2 percent slopes, frequently ponded	Prime farmland if drained	1.5	0.9%
WeA	Wentworth silty clay loam, 0 to 2 percent slopes	All areas are prime farmland	20.9	12.2%
WhA	Wentworth-Chancellor silty clay loams, 0 to 2 percent slopes	Prime farmland if drained	10.6	6.2%
Ws	Worthing silty clay loam, 0 to 1 percent slopes	Not prime farmland	3.1	1.8%
Totals for Area of Interest			**171.6**	**100.0%**

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

DEPARTMENT OF TRANSPORTATION

Planning and Engineering

Environmental Office
700 E Broadway Avenue
Pierre, SD 57501-2586
O: 605.773.4336
dot.sd.gov

December 29, 2021

Deron Ruesch
District Conservationist
USDA – Natural Resource Conservation Service
801 E 5th Street
Canton, SD 53703-1920

RE: Project P 1360(02), PCN 06JQ, Lincoln County
I-29 -85th Street Interchange, City of Sioux Falls and City of Tea
Interchange Preliminary Engineering and Environmental Assessment

Dear Mr. Ruesch:

The South Dakota Department of Transportation is currently preparing an Environmental Assessment for potential impacts associated with the construction of an interchange at 85th Street and Interstate 29 in Lincoln County, SD.

Proposed improvements for the project include construction of a Diverging Diamond Interchange (DDI) along I-29 at 85th Street. The configuration also includes a connector ramp from southbound I-229 to the 85th Street exit ramp and a braided exit ramp from southbound I-29. Access and facility modifications along 85th street that would be required with the construction of the interchange are also being evaluated for this Environmental Assessment.

Previous coordination was sent for this project on November 21, 2019. Since that time, drainage improvements have been designed for the project which would require the conversion of additional agricultural land. Approximately 21.12 acres of land actively used for agriculture would be required for the proposed project.

Enclosed are the form AD 1006 along with additional figures and justification for the Land Evaluation Site Assessment criteria. Your timely review of this project would be much appreciated. If you need additional information, please contact me using the contact information provided below.

Sincerely,

Kit Bramblee
Environmental Scientist Manager
605.773.3721

Enclosures
Cc: Joanne Hight, SDDOT
Tom Lehmkuhl, FHWA

SEH
401 East 8th Street
Suite 309
Sioux Falls, SD 57103
(605) 330-7000

Print Date: 12/8/2021
Source: Bing Maps,

Map by: mfalk
Projection: State Plane South Dakota S

Agricultural Impact Overview Map

I-29 and 85th Street Interchange
Lincoln County, SD

0 1,250 2,500 Feet

SEH
401 East 8th Street
Suite 309
Sioux Falls, SD 57103
(605) 330-7000

Print Date: 12/8/2021
Source: Bing Maps,

Map by: mfalk
Projection: State Plane South Dakota S

Agricultural Impact Location Map

I-29 and 85th Street Interchange
Lincoln County, SD

0 700 1,400 Feet

SEH
401 East 8th Street
Suite 309
Sioux Falls, SD 57103
(605) 330-7000

Print Date: 12/8/2021
Source: Bing Maps,

Map by: mfalk
Projection: State Plane South Dakota S

Impacted Farm Operations Map

I-29 and 85th Street Interchange
Lincoln County, SD

0 1,250 2,500 Feet

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 12/29/2021
Name of Project I-29 and 85th Street Interchange	Federal Agency Involved FHWA
Proposed Land Use Roadway/Interchange and R/W	County and State Lincoln County, South Dakota
PART II *(To be completed by NRCS)*	Date Request Received By NRCS / Person Completing Form:

Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☑	NO ☐	Acres Irrigated 2123 / Average Farm Size 389
Major Crop(s): Field Crops	Farmable Land In Govt. Jurisdiction Acres: 332,335 % 89		Amount of Farmland As Defined in FPPA Acres: 330,659 % 85
Name of Land Evaluation System Used: Relative Productivity	Name of State or Local Site Assessment System		Date Land Evaluation Returned by NRCS

PART III *(To be completed by Federal Agency)*	Alternative Site Rating Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	21.21			
B. Total Acres To Be Converted Indirectly	0			
C. Total Acres In Site	21.21			
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide Important or Local Important Farmland				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value				
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)				

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	Maximum Points	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)	15			
2. Perimeter In Non-urban Use	(10)	10			
3. Percent Of Site Being Farmed	(20)	20			
4. Protection Provided By State and Local Government	(20)	0			
5. Distance From Urban Built-up Area	(15)	5			
6. Distance To Urban Support Services	(15)	0			
7. Size Of Present Farm Unit Compared To Average	(10)	0			
8. Creation Of Non-farmable Farmland	(10)	0			
9. Availability Of Farm Support Services	(5)	0			
10. On-Farm Investments	(20)	0			
11. Effects Of Conversion On Farm Support Services	(10)	0			
12. Compatibility With Existing Agricultural Use	(10)	10			
TOTAL SITE ASSESSMENT POINTS	160	60	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	0	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	60	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	60	0	0	0

Site Selected: Site A	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ☑

Reason For Selection:

This site was selected because it addresses the project purpose and need of the project (achieving planned growth and development, improving access and mobility, and meeting transportation system demands) while also minimizing impacts to surrounding resources.

Name of Federal agency representative completing this form:	Date:

(See Instructions on reverse side) Form AD-1006 (03-02)

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, http://fppa.nrcs.usda.gov/lesa/.

Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s)of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map, or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)

Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.

Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.

Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.

Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.

Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.

2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.
Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \times 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

I-29 and 85th Street Interchange Project

Land Evaluation Site Assessment – Justification of Responses

USDA NRCS Form AD-1006 (03-02)

Part VI Evaluation Criteria:

1) 15 points, although the area is in close proximity to a major urban area and planned for urban use in the future, the area is currently rural
2) 10 points, the area immediately surrounding the site perimeter is currently non-urban, despite much of it being planned for urban use in the future
3) 20 points, 90% or more of the agricultural land in the area is actively farmed
4) 0 points, no known protection programs are in place for affected farming operations
5) 5 points, the site is within ½ mile of urban development in the Cities of Sioux Falls and Tea, but not immediately adjacent to urban development
6) 0 points, urban support services exist and are planned within 1/2 mile of the site.
7) 0 Points, The average farm size in Lincoln County is 390 acres. The proposed site would impact farmland from 8 farming operations, with an average size of 98.97 Acres. This is less than 50% of the average farm size in Lincoln County
8) 0 points, The proposed action will not create non farmable farmland off-site
9) 0 points, the site does not include farm support services
10) 0 points, the site is use for row crops and does not contain additional on-farm investments
11) 0 points, No significant reduction in demand for support services are anticipated as a result of land conversion on the site.
12) 10 points, the project is fully compatible with surrounding urban use, however, the project would also support the conversion of farmland to urban uses that is already planned for the area.

Department of Transportation
Environmental Office
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-4336

November 21, 2019

Deron Ruesch
District Conservationist
USDA – Natural Resource Conservation Service
801 E 5th Street
Canton, SD 53703-1920

RE: Project P 1360(02), PCN 06JQ, Lincoln County
I-29 -85th Street Interchange, City of Sioux Falls and City of Tea
Interchange Preliminary Engineering and Environmental Assessment

Dear Mr. Ruesch:

The South Dakota Department of Transportation is currently preparing an Environemental Assessment for potential impacts associated with the construction of an interchange at 85th Street and Interstate 29 in Lincoln County, SD.

Proposed Improvements for the project include construction of a Diverging Diamond Interchange (DDI) along I-29 at 85th Street. The configuration also includes a connector ramp from southbound I-229 to the 85th Street exit ramp and a braided exit ramp from southbound I-29. Access and facilty modifications along 85th street that would be required with the construction of the interchange are also being evaluated for this Environmental Assessment.

The project will involve the acquisition of agricultural property and conversion of acquired land to non-agricultural uses (i.e. road right-of-way). Approximately 16.24 acres of land actively used for agriculture would be required for the proposed project.

Enclosed are the form AD 1006 along with additional figures and justification for the Land Evaluation Site Assessment criteria. Your timely review of this project would be much appreciated. If you need additional information, please contact me using the contact information provided below.

Sincerely,

Joanne Hight
Engineering Supervisor
605.773.3721

Enclosures
Cc: Tom Lemkuhl
Al Mura

Department of Transportation
Environmental Office
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
605/773-4336

January 15, 2020

Deron Ruesch
District Conservationist
USDA – Natural Resource Conservation Service
801 E 5th Street
Canton, SD 53703-1920

RE: Project P 1360(02), PCN 06JQ, Lincoln County
I-29 -85th Street Interchange, City of Sioux Falls and City of Tea
Interchange Preliminary Engineering and Environmental Assessment

Dear Mr. Ruesch:

The South Dakota Department of Transportation is currently preparing an Environmental Assessment (EA) for potential impacts associated with improvements to 85th Street at the intersection of Interstate Highway 29 in Lincoln County, SD. The alternatives being considered for the project include:

- The Build Alternative (Site A on Form AD-1006) includes construction of a Diverging Diamond Interchange along I-29 at 85th Street. The configuration also includes a connector ramp from southbound I-229 to the 85th Street exit ramp and a braided exit ramp from southbound I-29. Access and facility modifications along 85th street that would be required with the construction of the interchange are also being evaluated for this Environmental Assessment. This alternative will involve the acquisition and conversion of approximately 16.24 acres of agricultural property to non-agricultural uses (i.e. road right-of-way).

- The No Build Alternative (Site B on Form AD-1006) includes the extension of 85th Street over I-29 by including a grade separation at I-29 and elevating 85th Street over the I-29 on the section line. This alternative will involve the acquisition and conversion of approximately 12.0 acres of agricultural property to non-agricultural uses. This alternative was considered in a previous EA with a signed Finding of No Significant Impact from FHWA, and is currently budged and planned for construction should no other alternative be selected.

- Existing Conditions Alternative Does not propose any changes to the roadway system. Therefore, no impacts to farmland would result from this alternative and it is not included on form AD-1006.

The project area included in the current roadway corridors are mowed rights of way. The project area along 85th Street is primarily used for agriculture and residential housing. Single family residential housing is located on the north side of 85th Street west and east of I-29. The land south of 85th Street and west of I-29 is actively used as farmland. On the east side of I-29, a pasture area separates the end of 85th street from I-29. The pasture stretches north and south from the 85th Street section line. The area between Tallgrass Avenue and Louise Avenue includes a developed residential area and tilled farmland.

Enclosed are the form AD-1006 along with maps of the alternatives and justification for the Land Evaluation Site Assessment criteria. Your timely review of this project would be much appreciated. If you need additional information, please contact me using the contact information provided below.

Sincerely,

Joanne Hight
Engineering Supervisor
605.773.3721

Enclosures

south dakota
STATE HISTORICAL SOCIETY
DEPARTMENT OF EDUCATION

September 27, 2019

Received
SDDOT Environmental
OCT 02 2019

Ms. Joanne Hight
Department of Transportation
Environmental Office
700 E. Broadway Avenue
Pierre, SD 57501-2586

SECTION 106 PROJECT CONSULTATION
Project: 190926005F – P 1360(02) PCN 06JQ – I-29 – 85th Street Interchange Construction
Location: Lincoln County
(FHWA/DOT)

Dear Ms. Hight,

Thank you for the opportunity to comment on the above-referenced project pursuant to 54 U.S.C. 306108 (Section 106) of the National Historic Preservation Act of 1966 (as amended). The Office of the South Dakota State Historic Preservation Officer (SHPO)) concurs with your determination regarding the effect of the proposed undertaking on the non-renewable cultural resources of South Dakota.

On September 26, 2019, we received your letter and the report entitled "An Intensive Cultural Resources Survey for SEH, Inc. of Interstate 29 New Overpass / Interchange, Lincoln County, South Dakota" by Lisa Nesselbeck (CIS No. 3397). Based upon the information provided, newly-recorded site 39LN0119 and newly-recorded structures LN07100003, LN07100002, LN07100001, and LN00000740 should be considered **Not Eligible** for Listing in the National Register of Historic Places. Therefore, we concur with your determination of "No Historic Properties Affected" for the proposed undertaking.

Activities occurring in areas not identified in your request, such as any needed borrow or staging areas, will require the submission of additional documentation pertaining to the identification of historic properties, as described in 36 C.F.R. § 800.4.

Concurrence of the SHPO does not relieve the federal agency official from consulting with other appropriate parties, as described in 36 C.F.R. § 800.2(c).

If historic properties are discovered or unanticipated effects on historic properties are found after the agency official has completed the process outlined by 54 U.S.C. 306108 (Section 106) of the National Historic Preservation Act, the agency official shall avoid, minimize, or mitigate the

adverse effects to such properties and notify the SHPO and Indian tribes that might attach religious and cultural significance to the affected property within 48 hours of the discovery, pursuant to 36 C.F.R. § 800.13.

Should you require any additional information, please do not hesitate to contact Jenna Carlson Dietmeier at Jenna.CarlsonDietmeier@state.sd.us or (605)773-8370. Your concern for the non-renewable cultural heritage of our state is appreciated.

Sincerely,

Jay D. Vogt
State Historic Preservation Officer

Jenna Carlson Dietmeier
Review & Compliance Archaeologist

CC: Jane Watts - Archaeological Research Center, Rapid City
Brian Huot - Archaeological Research Center, Rapid City
David Williams – Archaeological Research Center, Rapid City

From:	Ross Harris
To:	Marty Falk
Subject:	FW: Lewis & Clark Water Costs
Date:	Thursday, April 21, 2022 11:18:35 AM
Attachments:	image001.png image002.png image003.png image010.png image012.png

---

From: Ross D. Harris
Sent: Tuesday, December 15, 2020 3:33 PM
To: Mike E. Lyons <mlyons@sehinc.com>
Subject: FW: Lewis & Clark Water Costs

Mike, thank you for the reminder. I don't think (?) I sent this to you but if so, apologies for getting it twice. Good info for the team. We had to reach out to Scott V the first time to confirm that noise walls could not be placed along 85th anywhere near the L & C waterline.

Ross

From: Scott Vander Meulen <scottvm@bannerassociates.com>
Sent: Wednesday, January 15, 2020 8:36 AM
To: Ross D. Harris <rharris@sehinc.com>
Cc: Tim Conner <timc@bannerassociates.com>; Clinton Koehn <ckoehn@lcrws.org>; Jim Auen <jauen@lcrws.org>
Subject: RE: Lewis & Clark Water Costs

Hi Ross,
Sending this email in follow up to our phone conversation earlier this afternoon as it pertains to the Lewis & Clark Regional Water System (L&C) pipeline.
You had asked about relocation cost to relocate a portion of the Lewis & Clark pipeline that lays along 85th Street in Sioux Falls.
We can provide a cost but am hesitant to provide one as it would only be an opinion and I believe that the amount of work that would truly be involved in the relocation of that portion of the Lewis & Clark pipeline would not be fully understood by those who are not familiar with it and too easily dismissed. Any cost evaluation may consider cost for easements, engineering, surveying, potential lost water sales and pipe construction costs and construction observation.

To start, the pipeline that you have asked about is a 36" diameter spirally wound steel pipe (0.157-inch wall) with both o-ring joints and welded joints, lined with Cement Mortar Lining and coated on the exterior with a 30-mil polyurethane coating for corrosion protection. In addition, the pipe is cathodically protected with an impressed current cathodic protection system. The pipe is considered a flexible wall pipe and therefore is subject to collapse. The pipeline operating pressure at this location is approximately the 109 psi range with a static pressure of approx. 85 psi. The

pipeline is designed to ultimately convey 24.16 MGD of treated drinking water through this stretch. There are no individual service taps along this pipe however the pipe delivers water to the various members of Lewis & Clark. The pipeline was constructed around 2008.
The pipeline also lays within a specific permanent easement that was acquired by Lewis & Clark along with a temporary construction easement. The easements were obtained at a significant cost, based on land values.

L&C members who are currently served by this stretch of pipe include the following;

1. The City of Sioux Falls, SD
2. The City of Harrisburg, SD
3. Minnehaha Community Water Corporation
4. Rock County Rural Water, MN
5. The City of Rock Rapids, IA
6. The City of Luverne, MN
7. Lincoln-Pipestone Rural Water, MN
8. The City of Worthington, MN
9. The City of Sibley, IA. (yet to be connected).

In addition to the cost of relocation of the pipeline would be the concern of any disruption of water service. These customers have been waiting 25 years for quality water and now that it is finally in service would mean that any disruption of water service would not be well received.

Back in 2017 we had provided some responses/concerns back to the City of Sioux Falls with regard to several options proposed for noise walls. A couple of the options cut the L&C easement in half. Unknown construction techniques for a wall near the pipeline are also a great concern.

I do not have the authority to obligate Lewis & Clark Regional Water System into anything but my recommendation to L&C based on what I currently know would be to not allow any relocation of the pipeline or recommend the construction of a noise wall within its easement. If new information comes to light let us know.

If you have any other questions you may contact me directly,
Thank you,
Scott

Scott Vander Meulen | Senior Project Manager

BANNER
engineering a better community

Banner Associates, Inc.
2307 West 57th Street, Suite 102
Sioux Falls, South Dakota 57108
Toll Free | 1.855.323.6342

www.bannerassociates.com

From: Scott Vander Meulen
Sent: Tuesday, January 14, 2020 10:30 AM
To: Ross Harris <rharris@sehinc.com>
Cc: Tim Conner <timc@bannerassociates.com>
Subject: RE: Lewis & Clark Water Costs

Hi Ross,
I think I better call to discuss this one a little further.
Relocation is not an option.

Scott

Scott Vander Meulen | Senior Project Manager

BANNER
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Banner Associates, Inc.
2307 West 57th Street, Suite 102
Sioux Falls, South Dakota 57108
Toll Free | 1.855.323.6342
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From: Ross Harris <rharris@sehinc.com>
Sent: Tuesday, January 14, 2020 10:12 AM
To: Scott Vander Meulen <scottvm@bannerassociates.com>
Subject: Fw: Lewis & Clark Water Costs

Hi Scott,

I'm working as the PM for SEH and the landowner group for the updated EA on the I-29 / 85th Street EA. Al Murra from SEH passed along your contact info. Wondering if you could help me out with a question below....

We were required by FHWA to re-do the noise analysis that was completed by URS in 2017 for 85th Street due to the interchange being added to the project. We are proceeding under many of the assumptions of the prior noise study - but now that final design is being completed and some of the "unknowns" are available to provide better information, we wanted to be sure we understand (for documentation purposes) why potential noise wall locations on the south side of 85th Street would be cost-prohibitive to do - using the assumptions below from our noise specialist.

Could you please reply with valuation info (water line average relocation cost per foot) we can document in the noise study report at your earliest convenience - or give me a call to discuss?

Thank you,

Ross Harris, AICP | Senior Project Manager
SEH | 5414 NW 88th Street, Suite 140 | Johnston, IA 50131
515.608.6006 direct | 515.867.8228 mobile
515.608.6000 office | 888.908.8166 fax
www.sehinc.com
SEH - Building a Better World for All of Us®

----- Forwarded by Ross Harris/seh on 01/14/2020 10:03 AM -----

From: Savannah Stehn/seh
To: Ross Harris/seh@SEH
Date: 01/14/2020 09:48 AM
Subject: Lewis & Clark Water Costs

Hi Ross -

For the barrier on the south wall, I think we need to assume the water would need to be relocated for the construction of the wall (if it were to be built). There would be approximately 650 feet of water to be relocated and approximately 4400 sq feet of right-of-way that would need to be purchased for the wall location. There will likely be some power poles and electric lines that would need to be relocated with the proposed barrier location, just making the barrier that much more costly and unlikely.

If L & C has a cost in mind per foot of relocation, we can apply that, otherwise I can see if I can come up with a number in talking to others.

Thanks,

Savannah Stehn, PE (WI) | Project Engineer
608.620.6174 direct
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Attachment H – Public Involvement Documentation

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MEMORANDUM

TO: Steve Gramm
Shannon Ausen

FROM: Ross Harris, Al Murra

DATE: April 19, 2019

RE: Summary of Open House 1: April 17, 2019

This memo documents summary information regarding the public open house held on April 17, 2019, for the Environmental Study for the I-29 & 85th Street proposed interchange.

Basic Meeting Information

- Public open house for the greater Sioux Falls community surrounding the project area
- Date: April 17, 2019
- Time: 5:30 – 7:00 pm
- Location: City of Tea, SD – City Hall (600 E 1st Street, Tea, SD)

Meeting Notifications

- Postcard invitations were mailed directly to 158 properties surrounding the project area.
- Meeting information was posted on the City of Sioux Falls project website
- Press release by SDDOT and City of Sioux Falls
- Advertisement in the Argus Leader (local newspaper), Tea Weekly (local newspaper), Sioux Valley News (local newspaper), Lennox Independent (local newspaper) and the Shopping News (weekly paper)
- Facebook event on the City's page

Attendance

- Approximately 120 individuals signed in (see ***Attachments*** for digital scans of the sign-in sheets)
  - A few attendees did not sign in
- 20 staff/PMT present
  - 5 SDDOT (Steve Gramm, Craig Smith, Brad Remmich, Brooke White, Travis Dressen)
  - 1 City of Sioux Falls (Shannon Ausen)
  - 1 FHWA (SD) (Tom Lehmkuhl)
  - 1 SECOG (Jim Feeney)
  - 3 City of Tea (Kevin Nissan, Jason Kjenstad-HDR, Ben Scholtz-HDR)
  - 4 SEH (Al Murra, Ross Harris, Mark Dierling, Scott LaVoy)

Meeting Description
The public meeting was held in an open house style format with a presentation by Al and Ross at the beginning of the meeting. The presentation included background on the project, the alternatives identified in the IJR, the project timeline, environmental considerations and project propose and need. Following the presentation,

attendees were encouraged to view the presentation boards and speak one-on-one with the project staff about the project. Presentation boards contained information that was included in the presentation, including background and environmental information and the alternatives for the proposed interchange.
Staff members were present at the boards to answer questions and help describe the project. A comment table was available for attendees to write and submit official comments.

Comments
Eight comment cards were collected or were received by email. Comments received are summarized on a spreadsheet following the presentation documents, meeting advertisements and publication proofs

Photos of April 19, 2020 Public Meeting

List of Attachments:

Public Meeting Presentation

Public Meeting Display Exhibits

Public Meeting Advertisements and Proofs of Publication

Public Meeting Sign-In Sheets

Public Meeting Comments Received (written cards / emails)

Public Meeting Comment Responses

Public Meeting Presentation

I-29 & 85th St Interchange - Preliminary Design/Environmental Study

5:30 – 5:45 p.m. April 17, 2019

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Agenda

1. Introductions
2. Study Area
3. Project Timeline and Update
4. Major Work Tasks and Status
5. Draft Purpose and Need Statement
6. Alternatives Being Evaluated in the Environmental Study
7. Schedule and Next Steps
8. Open House Continues to 7:00 p.m.

Welcome

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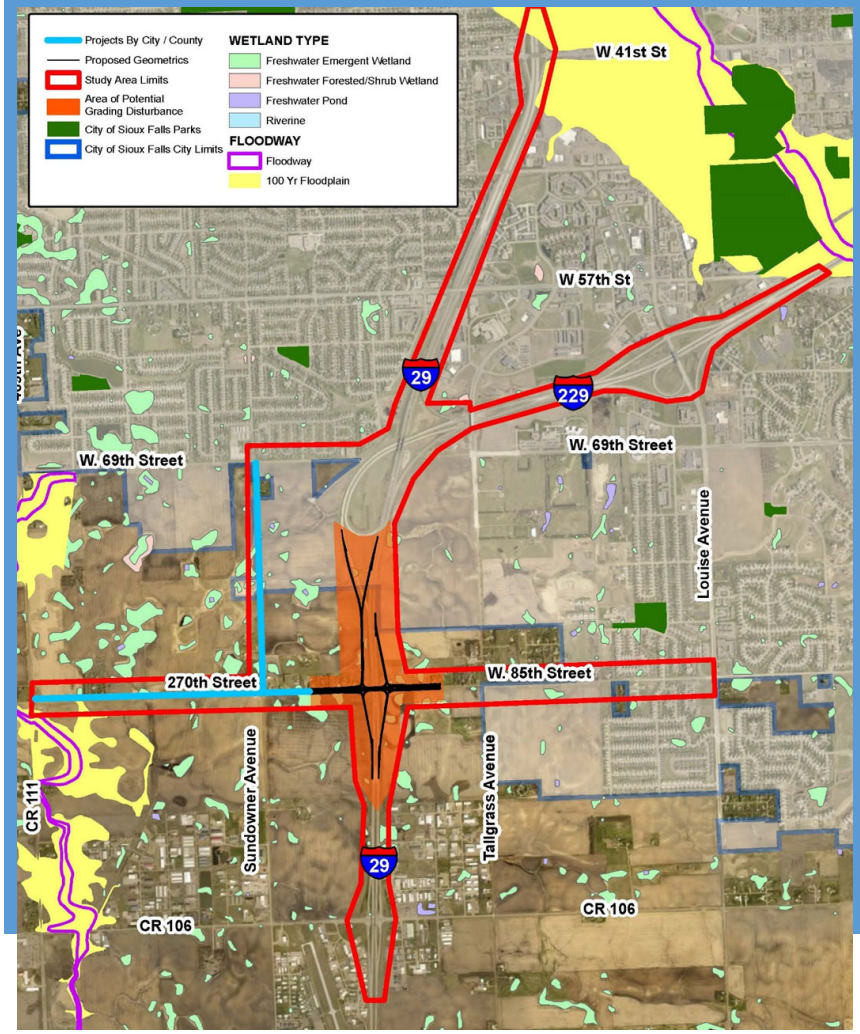

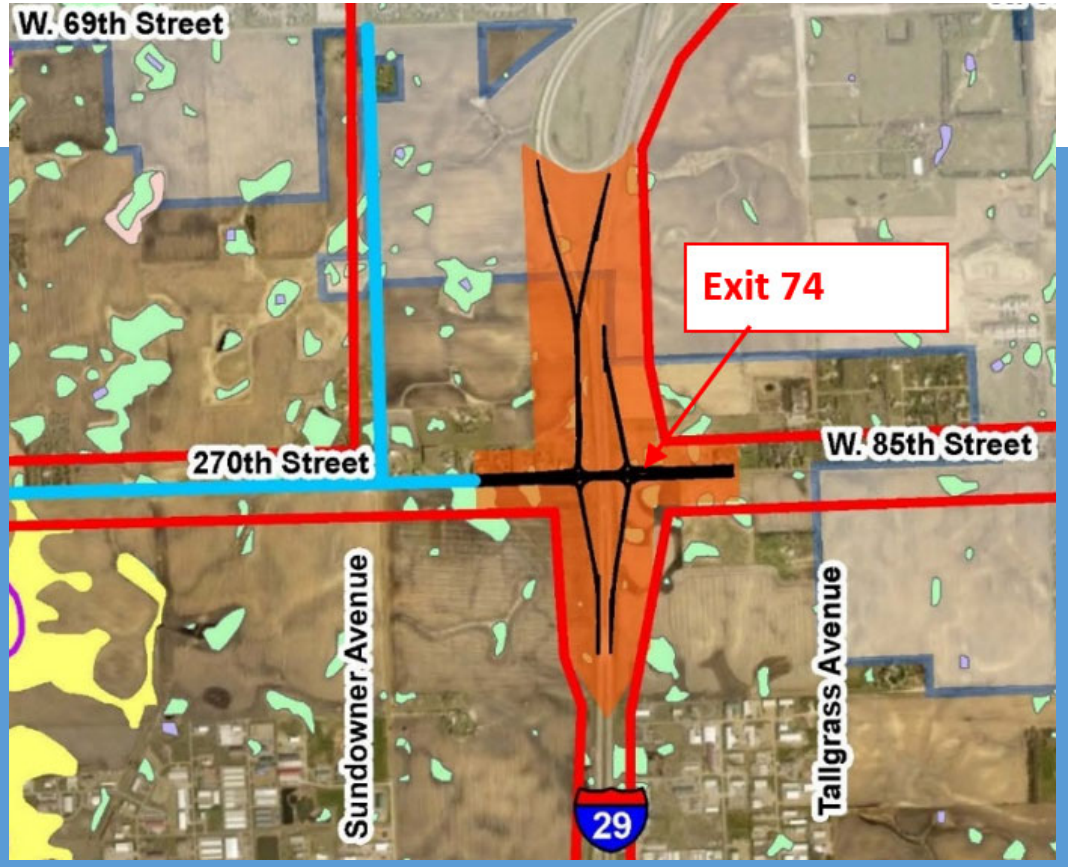

I-29 / 85th Street Interchange

I-29 Future Exit 74

Study Area

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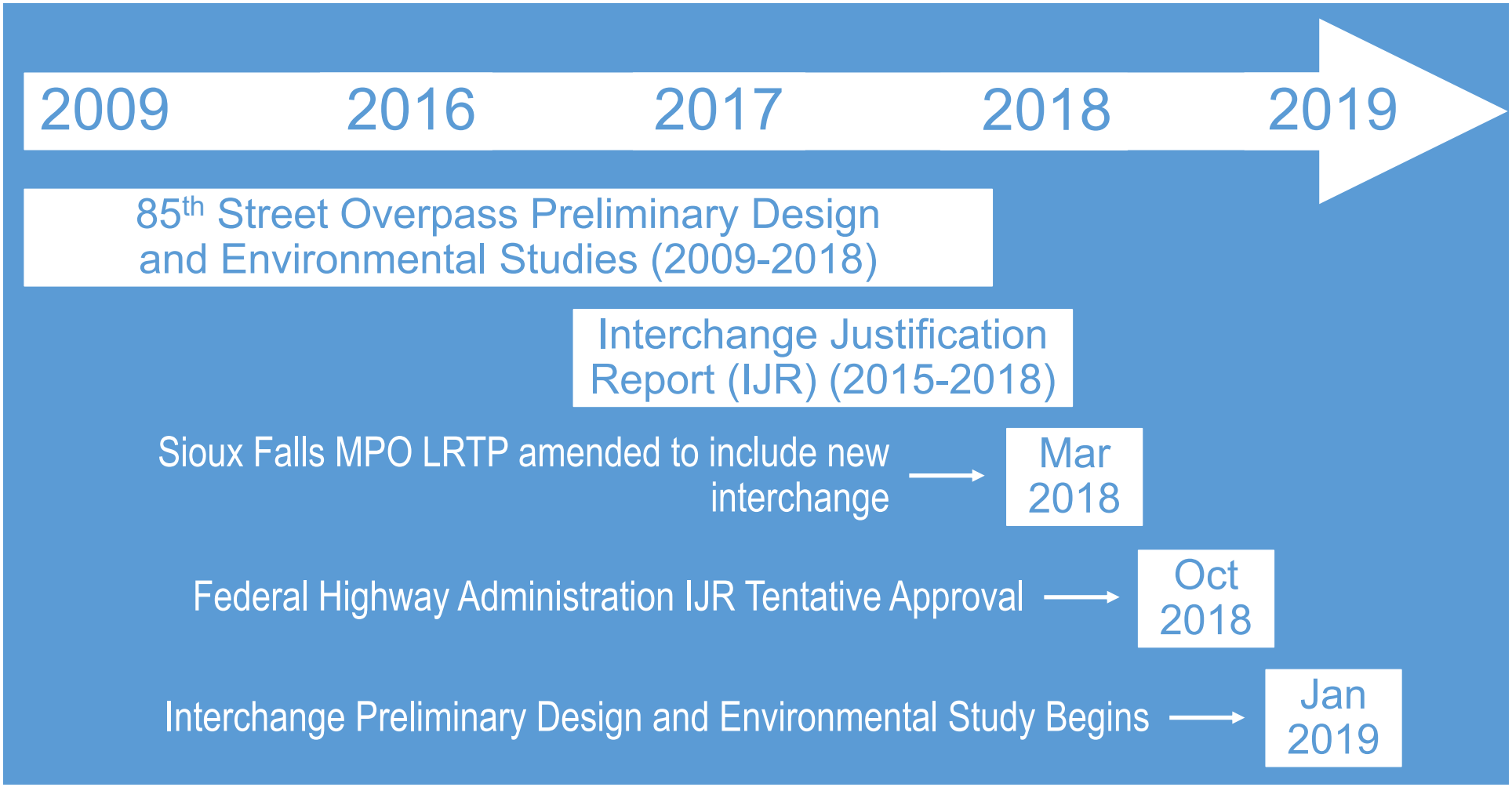

Project Timeline and Update

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Survey and Environmental Studies

Work Tasks and Status

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Preliminary Topo Survey - Completed

- Set Control Points and Monuments
- Locate Existing Right-Of-Way Lines
- Utility Locates
- Limited topo survey area as necessary to complete preliminary design (night work on I-29 mainline)
- Existing Conditions Base Map – Completed in April

Survey

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Work in Progress

- Agency and Tribal Coordination
- Special Studies and field work
  - ✓ Wetlands
  - ✓ Regulated Materials
  - ✓ Noise Analysis
  - ✓ Cultural Resources
- Develop and Start to Populate the Environmental Document (Environmental Assessment)
- Receive Public Input on Purpose and Need

Environmental Studies

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Preliminary Engineering and Design

Work Tasks and Status

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- Refine conceptual layouts for the IJR build alternative (interchange and braid ramps)
- Develop preliminary gradeline for each alternative
  - Horizontal alignment
  - Vertical alignment
  - Typical sections
- Determine preliminary limits of construction for the build alternative
- Support identification of impacts and evaluation of alternatives

Preliminary Engineering and Design

SEH

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DRAFT
Purpose and Need Statement

SEH

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Purpose and Need – What is it and why is it important?

- Validates the balance between the need for a project and the social and natural environment impacts that may result
- Establishes that the priority of the project is warranted considering other highway improvement project needs in South Dakota

Purpose and Need – What is it and why is it important?

- Drives the process for alternatives consideration, in-depth analysis, and ultimate selection of a preferred alternative.
- Vital to meeting the requirements of other Federal laws and Executive Orders protecting the natural and human environments.

"Without a well-defined, well-established and well-justified purpose and need, it may be difficult to determine which alternatives are reasonable, prudent and practicable, and it may be impossible to dismiss the no-build alternative."

- Federal Highway Administration Environmental Review Toolkit

1. Support Planned Growth and Development

- Most of the Sioux Falls Area's planned regional growth is expected to occur in Northern Lincoln County near the proposed project.
- Long-range local and regional planning documents and development agreements have been approved that include the proposed project. These documents recognize the project's role as a needed regional improvement to support the local roadway system that provides direct access to planned development in the future growth areas.

2. Improve Access and Mobility

The proposed project is needed to improve roadway access and mobility in the project study area by

- Providing new access to the Interstate highway system that meets access spacing standards for urbanized areas as the study area becomes developed
- Guiding local and regional travelers to use the appropriate local and regional transportation facilities (existing and planned) with efficient routes for the purpose of their trips.

3. Meet Transportation System Demands

The proposed project is needed to provide a transportation solution that will be consistent with the Sioux Falls Metropolitan Planning Organization's (MPO's) long-range transportation plan by:

- Providing needed infrastructure to serve projected increases in traffic volumes in the study area and relieve expected future traffic congestion at other interchanges located within and near the study area.
- Ensure adequate levels of service are maintained throughout the regional highway network (i.e. I-29 at County Road 106, I-29 at 41st Street or I-229 at Louise Avenue) under projected future traffic conditions.

Three Project Alternatives Being Evaluated in the Environmental Assessment

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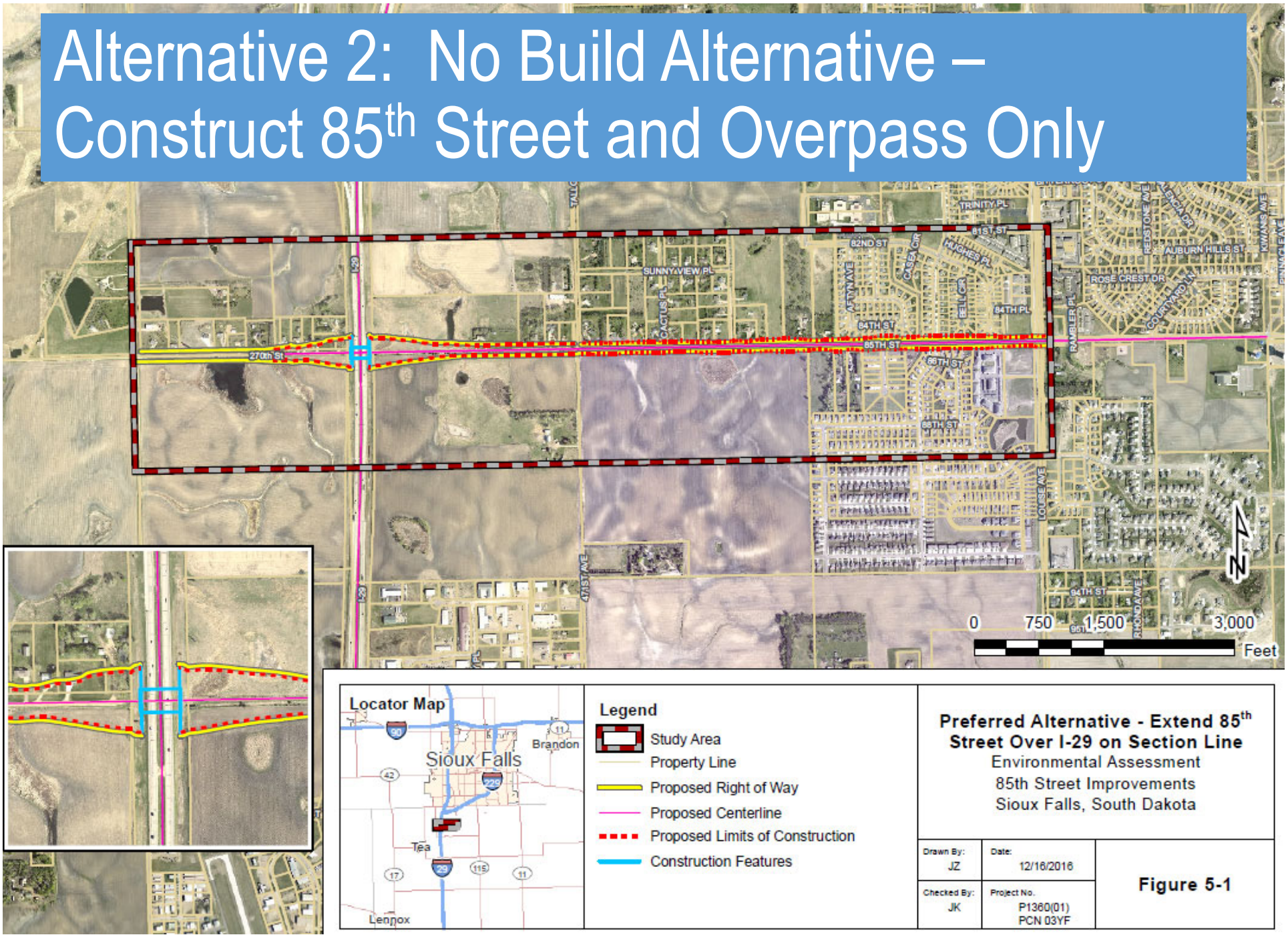
Alternative 1: Existing Conditions Alternative

- **No interchange and no overpass** would be constructed at I-29 and 85th Street
- Serves as the baseline when analyzing the social, economic and environmental impacts of a Build Alternative
- Other planned and programmed arterial street projects to improve capacity, safety, and mobility would be constructed

Alternative 2: No Build Alternative

- The previously-approved 85th Street bridge overpass **would** be constructed
- No interchange would be constructed at I-29 and 85th Street
- Other planned and programmed arterial street projects to improve capacity, safety, and mobility would be constructed

Alternative 2: No Build Alternative – Construct 85th Street and Overpass Only



Legend

- Study Area
- Property Line
- Proposed Right of Way
- Proposed Centerline
- Proposed Limits of Construction
- Construction Features

Preferred Alternative - Extend 85th Street Over I-29 on Section Line

Environmental Assessment
85th Street Improvements
Sioux Falls, South Dakota

Drawn By:	Date:	
JZ	12/16/2016	**Figure 5-1**
Checked By: JK	Project No. P1360(01) PCN 03YF	

Alternative 3: Build Alternative – Diverging Diamond

Interchange Justification Report (IJR)

Recommended Alternative

Alternatives

SEH

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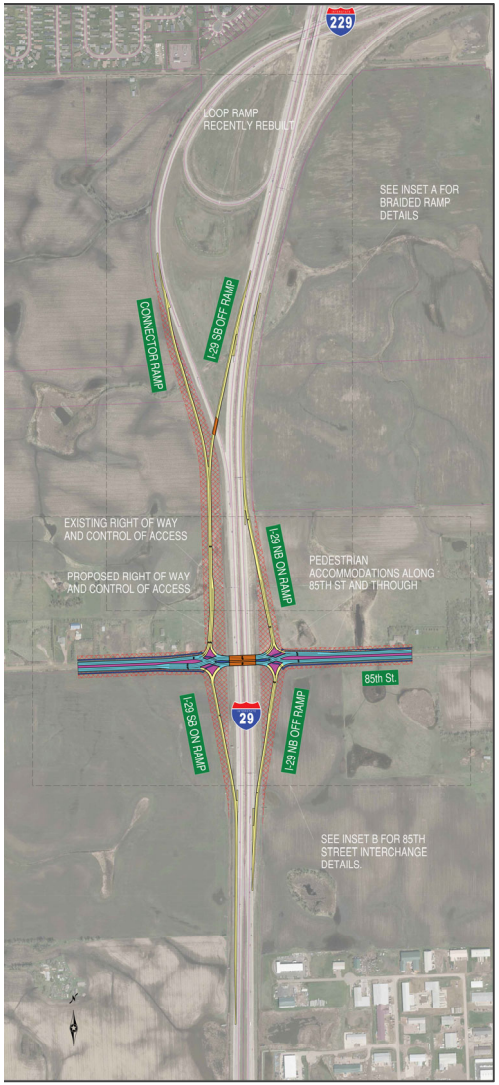

Build Diverging Diamond with I-29/I-229 Braid Ramp

SEH

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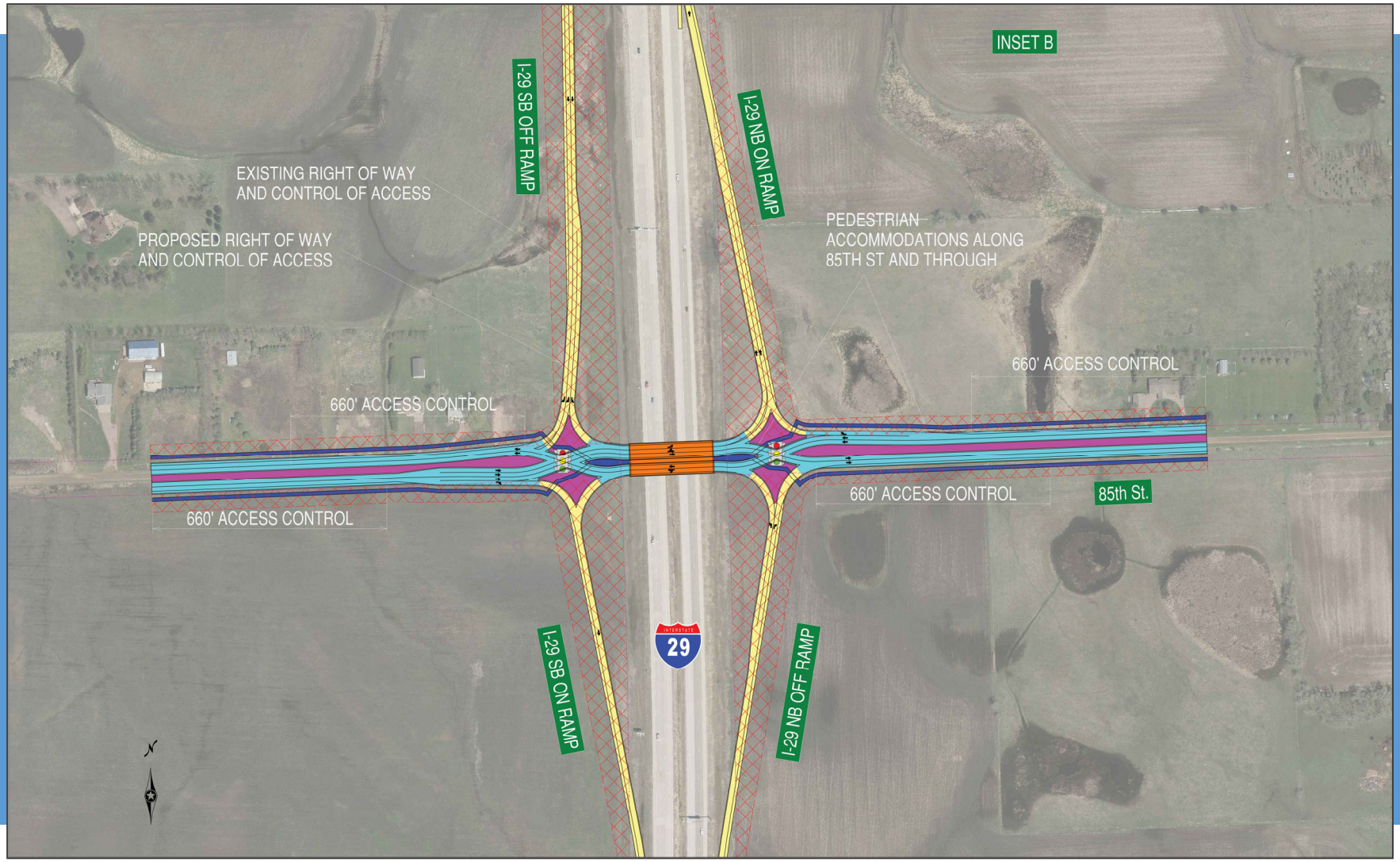

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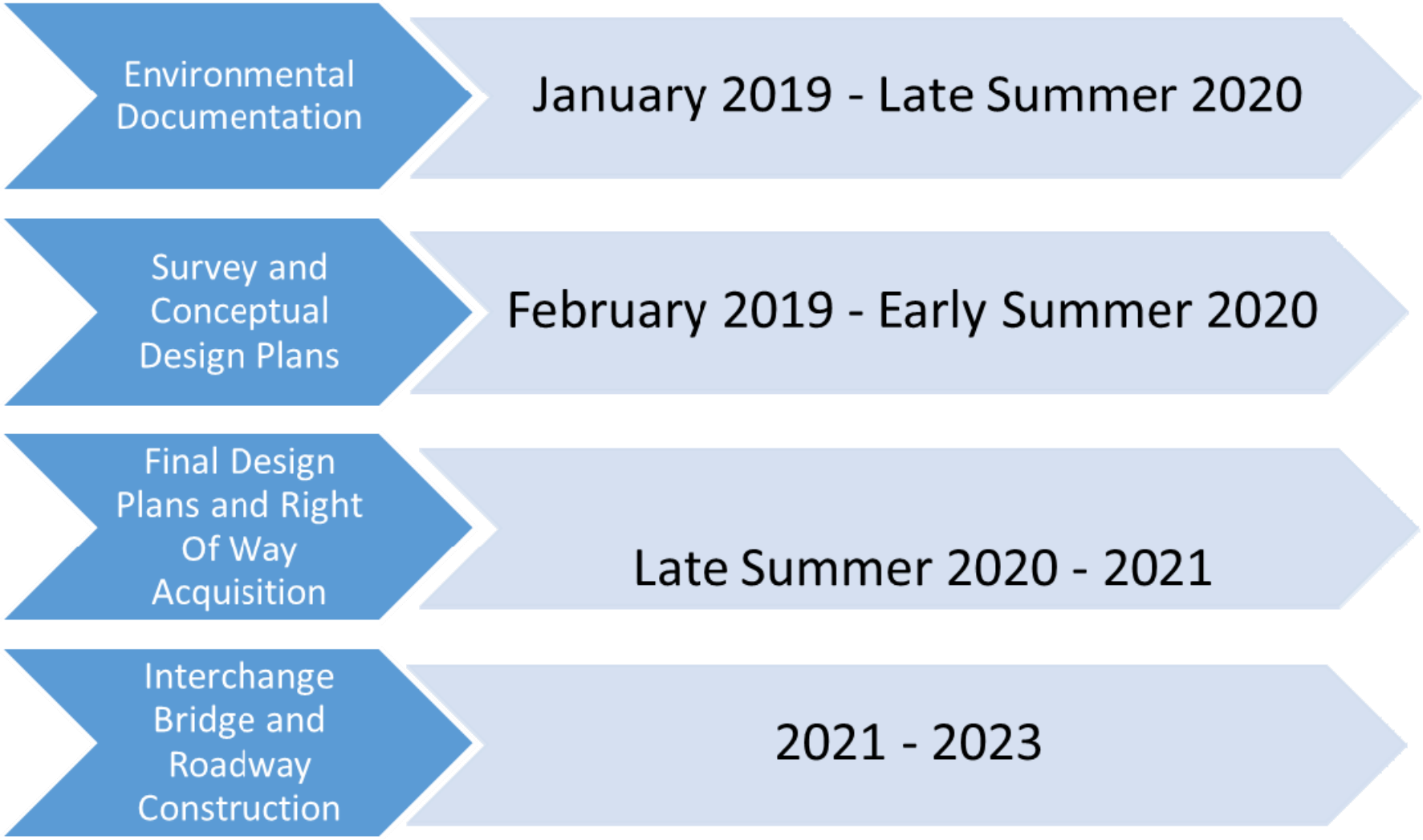

Schedule

SEH

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Project Contacts and More Information

Shannon Ausen, City of Sioux Falls
sausen@siouxfalls.org
(605) 367-8607

Steve Graham, SDDOT
steve.gramm@state.sd.us
(605) 773-6641

Al Murra, SEH
amurra@sehinc.com
(605) 330-7000

Project Website

http://siouxfalls.org/public-works/special-projects/projects-list/85th-st-improvements

SEH

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Open House
Continues to 7:00 p.m.

Thank You For Attending

SEH

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Environmental Study for I-29 / 85th Street Interchange

Welcome!

Public Open House

For the Environmental Study for I-29 & 85th Street

We want to hear from you!

There are several ways you can stay involved and provide your feedback on the project including:

- Submit a written comment card and leave in the comment box tonight
- Submit a written comment by mail or email by May 1st, 2019
- Speak with project staff and share your feedback tonight
- View project information and announcements on the project website at: https://siouxfalls.org/public-works/special-projects/projects-list/85th-st-improvements

Connecting South Dakota and the Nation

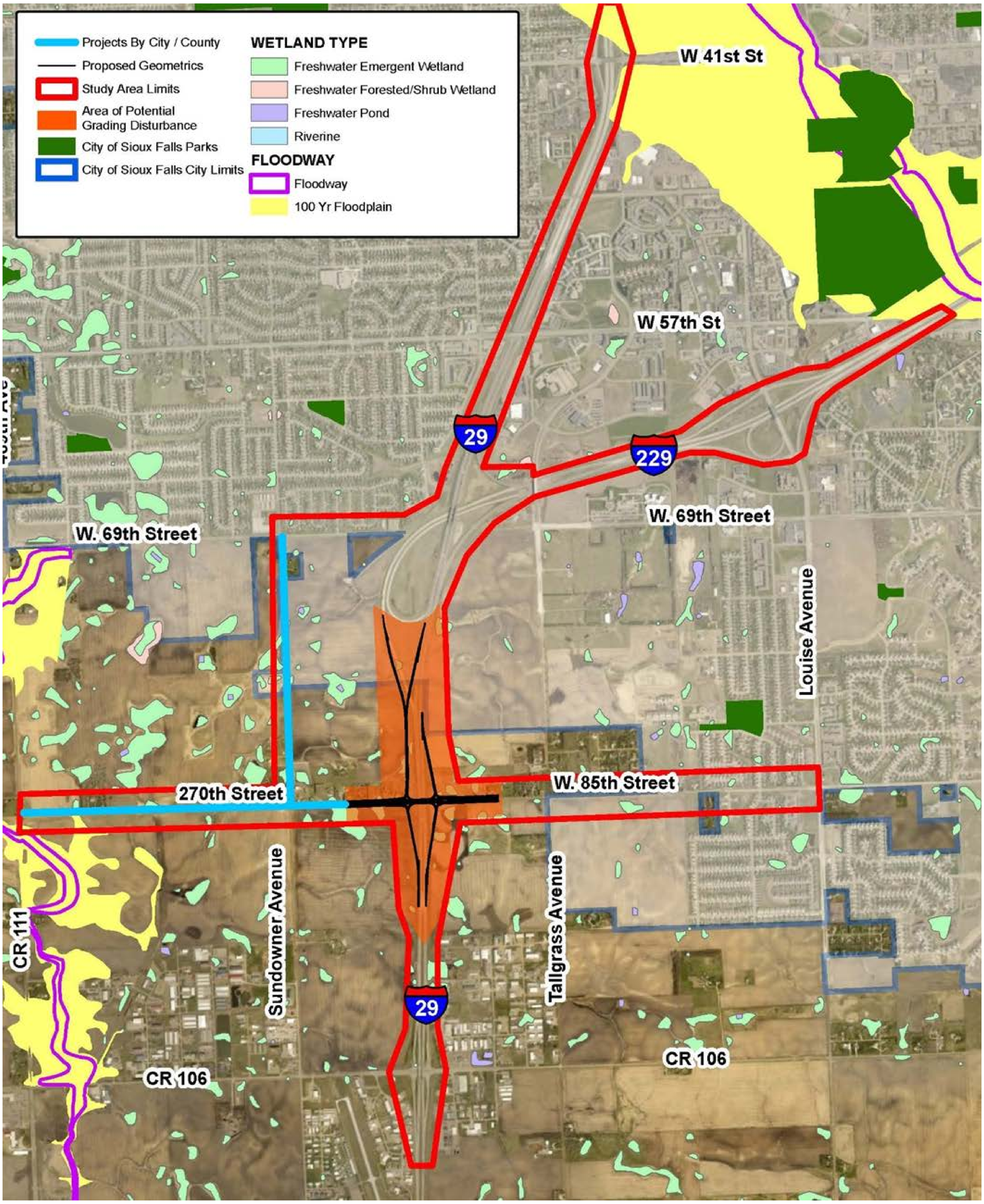
City of Sioux Falls

U.S. Department of Transportation
Federal Highway Administration

Sioux Falls MPO
Metropolitan Planning Organization
South Dakota

Environmental Study for I-29 / 85th Street Interchange

Study Area



Connecting South Dakota and the Nation

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Federal Highway Administration

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Metropolitan Planning Organization
South Dakota

Environmental Study for I-29 / 85th Street Interchange

Study Historical Timeline

85th St Overpass Prelim Design and Environmental Study (2009-2018)

FHWA Approval for 85th St Overpass EA → **March 2018**

2009-2015 | 2016 | 2017 | 2018 | 2019

85th St Interchange Justification Report (IJR) (2015-2018)

Sioux Falls MPO amends LRTP to include the 85th St Interchange → **March 2018**

FHWY Tentative Approval for the 85th St Interchange IJR → **Oct 2018**

85th St Interchange Preliminary Design & Environmental Study Begins → **Jan 2019**

Connecting South Dakota and the Nation

City of Sioux Falls

U.S. Department of Transportation
Federal Highway Administration

Sioux Falls MPO
Metropolitan Planning Organization
South Dakota

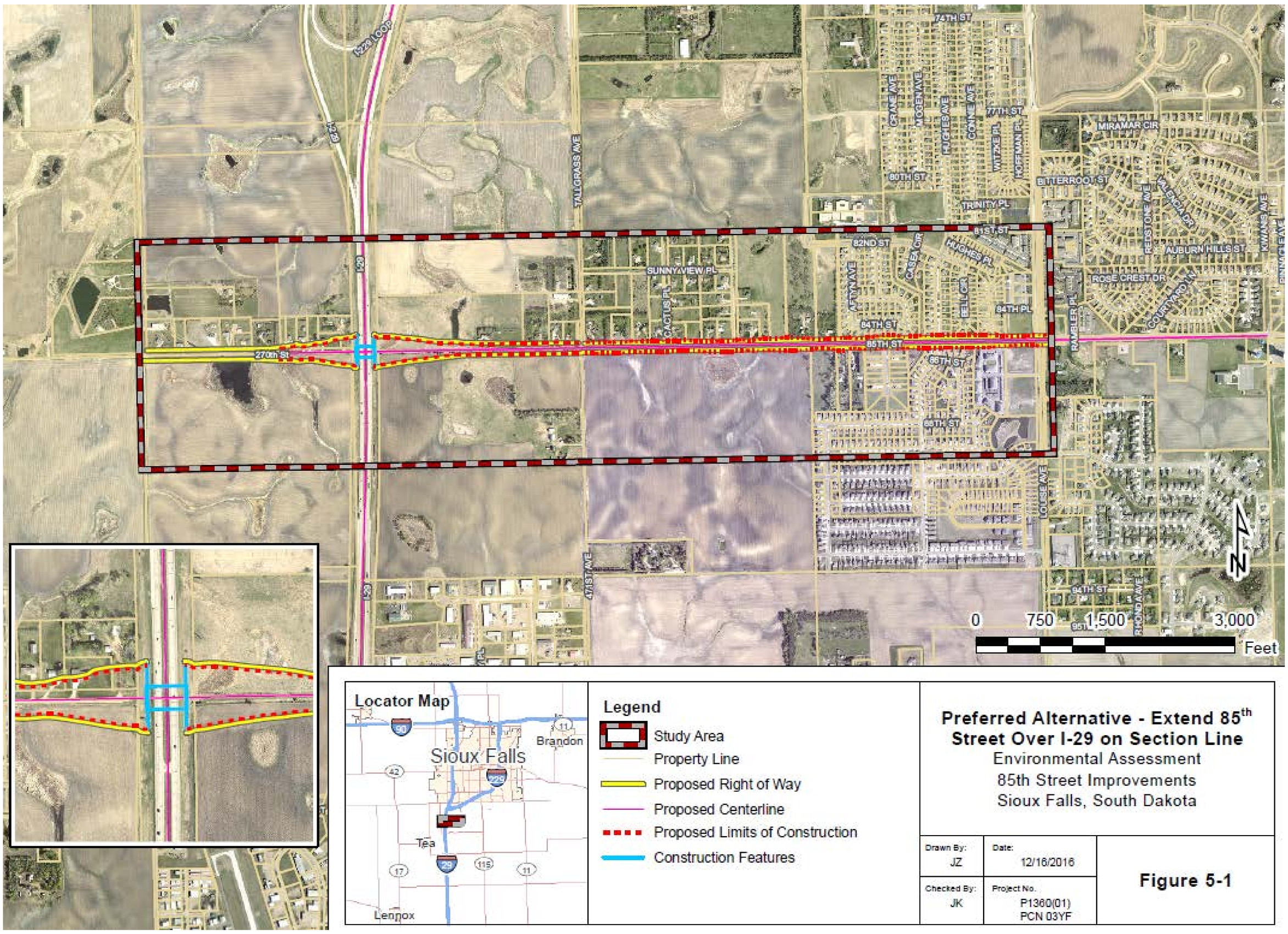
Existing and No-Build Alternatives

Alternative 1: Existing Conditions

- No interchange and no overpass would be constructed at I-29 & 85th St

Alternative 2: No-Build

- The previously approved 85th St bridge Overpass would be constructed

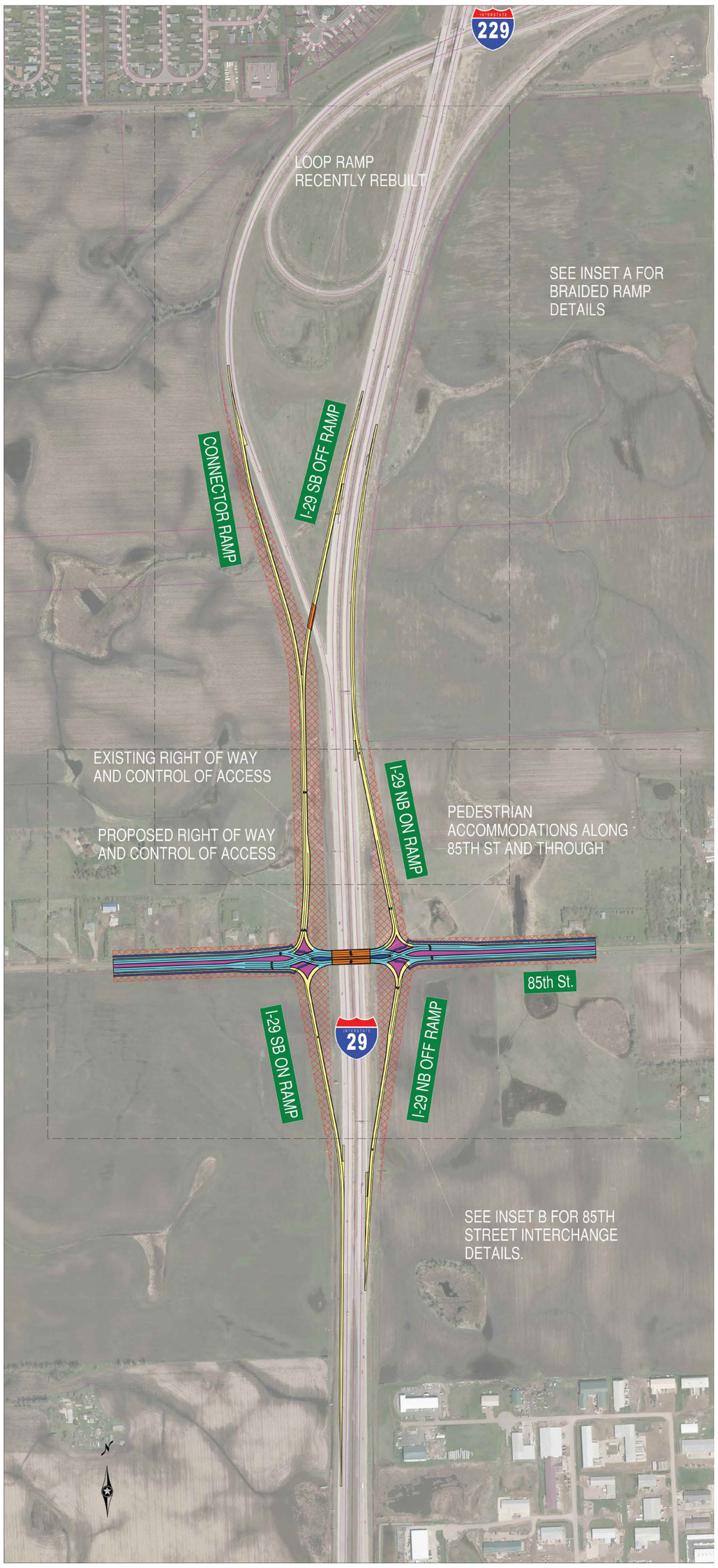


Environmental Study for I-29 / 85th Street Interchange

Build Alternative

Alternative 3: Build (Diverging Diamond)

- Construct a new Diverging Diamond Interchange at I-29 & 85th St



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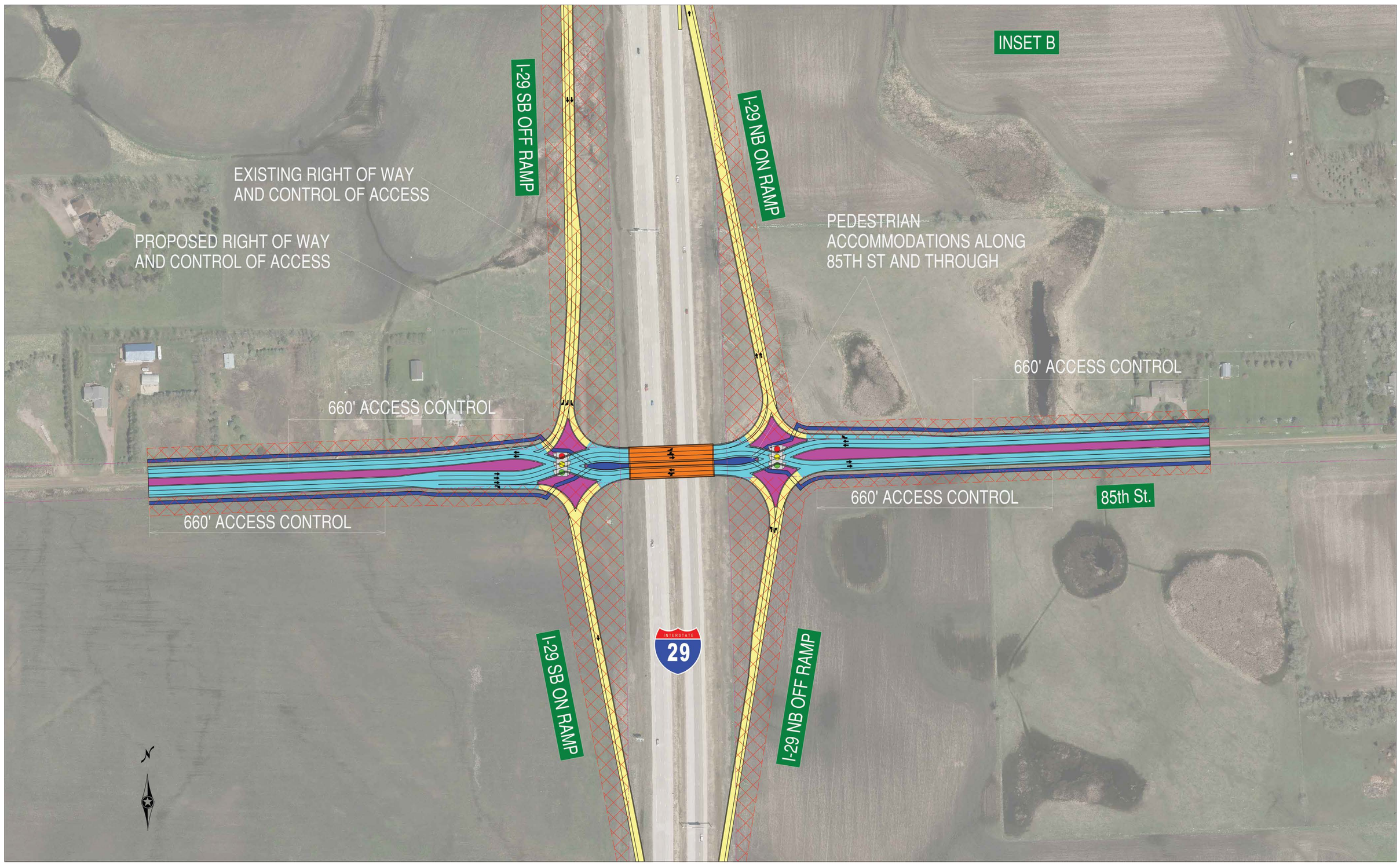

Connecting South Dakota and the Nation

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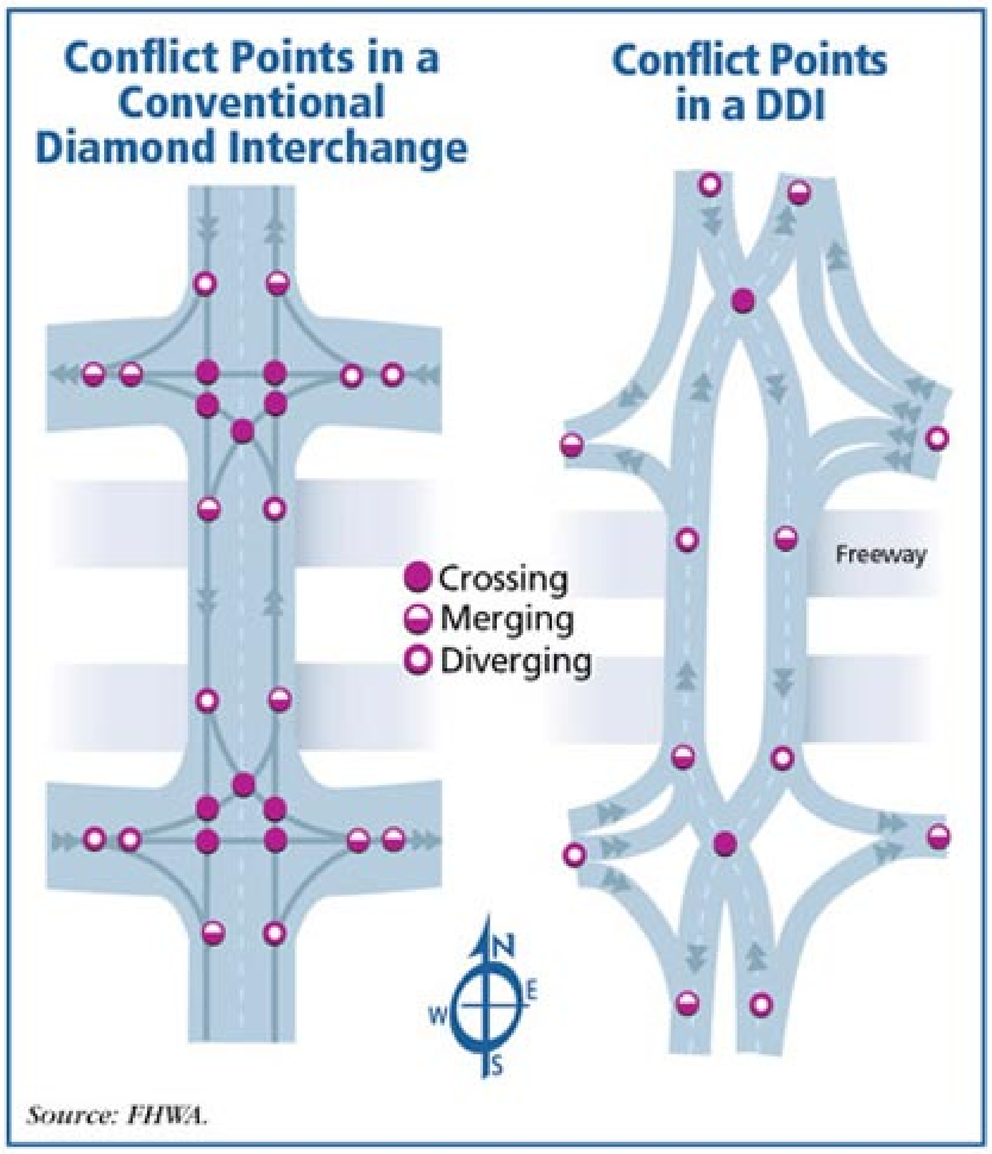
U.S. Department of Transportation
Federal Highway Administration

Sioux Falls MPO
Metropolitan Planning Organization
South Dakota

Benefits of the Diverging Diamond Interchange (DDI)

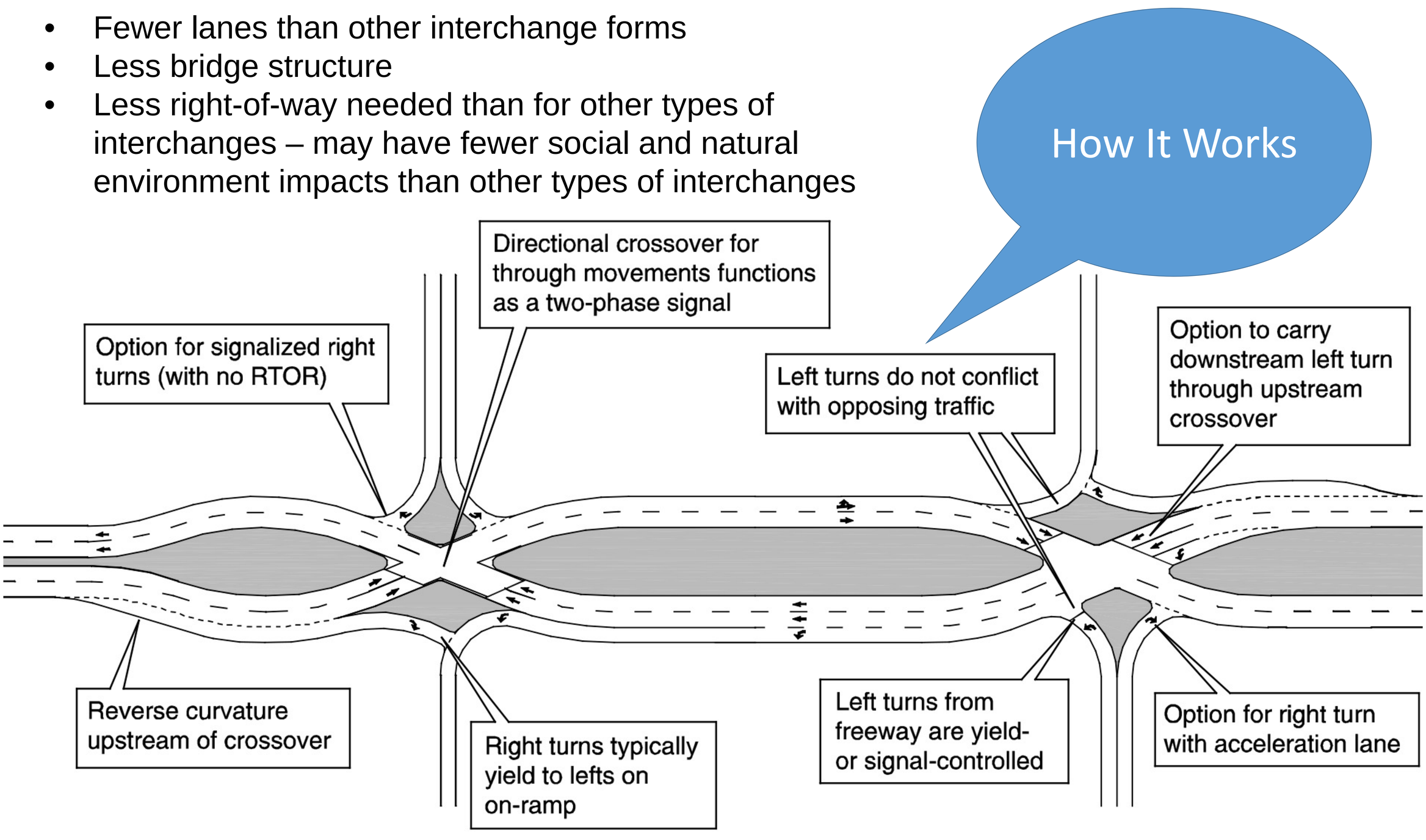
Improved Safety

- Fewer conflict points (14 for DDI, 26 for conventional)
- Conflict points spread out throughout interchange
- Better sight distance at turns
- Virtually no driver confusion (FHWA study and new DDI observations in Springfield, MO)
- Can calm traffic with curved design and lower speeds, and decrease delays at traffic signals with less vehicle “stacking”
- Wrong way entry to ramps made extremely difficult
- Pedestrian crossings are shorter



Lower Costs, Fewer Potential Impacts With Less Right-of-Way

- Fewer lanes than other interchange forms
- Less bridge structure
- Less right-of-way needed than for other types of interchanges – may have fewer social and natural environment impacts than other types of interchanges



Environmental Study for I-29 / 85th Street Interchange

Environmental Considerations

The project team is currently conducting analyses and field observations of the following environmental considerations:

- Wetlands
- Archaeological / Historical – Cultural Resources
- Habitat Analysis (Threatened and Endangered Species)
- Regulated Materials (hazardous substances)
- Noise Monitoring

The results of these studies will be used to compare and document impacts among project alternatives.

South Dakota DOT — Connecting South Dakota and the Nation

City of Sioux Falls

U.S. Department of Transportation — Federal Highway Administration

Sioux Falls MPO — Metropolitan Planning Organization — South Dakota

Environmental Study for I-29 / 85th Street Interchange

Purpose and Need

Why is the Purpose & Need Statement Important?

- Validates the balance between the need for a project and the social and natural environment impacts that may result
- Establishes that the priority of the project is warranted considering other highway improvement project needs in South Dakota
- Drives the consideration of alternatives and selection of a preferred alternative
- Vital to meeting the requirements of other Federal laws and Executive Orders protecting the natural and human environments

1. Improve Access and Mobility

Improve access opportunities to the Sioux Falls Regional Highway network to:

- ***Improve support for the local roadway network, and***
- ***Balance traffic demands throughout the regional highway network versus funneling to only currently available Interstate Highway access locations (i.e. I-29 at Hwy 106, 41st Street or I-229 at Louise Avenue).***

2. Support Economic Development

- ***Allow the region to determine future land uses and guide proposed growth through a major development opportunity; and***
- ***Create the ability to maximize land development potential at the same time provisions for roadway access and system capacity improvements are made.***

3. Meet Transportation System Demands

Provide a transportation solution that will be consistent with the Sioux Falls Metropolitan Planning Organization's (MPO's) long-range transportation plan by:

- ***Supporting future growth, and***
- ***Providing needed infrastructure to serve projected increases in traffic volumes in the study area.***

Draft Purpose & Need Statements

Schedule / Contacts / Website

Environmental Documentation	January 2019 – Late Summer 2020
Survey and Conceptual Design Plans	February 2019 – Early Summer 2020
Final Design Plans & Right-Of-Way Acquisition	Late Summer 2020 - 2021
Interchange Bridge & Roadway Construction	2021 - 2023

Project Contacts

Shannon Ausen, PE
City of Sioux Falls
(605) 367-8607
sausen@siouxfalls.org

Steve Gramm, PE
SDDOT
(605) 773-6641
steve.gramm@state.sd.us

Alan Murra, PE
Project Engineer with SEH
(605) 330-7000
amurra@sehinc.com

For More Information Visit the City's Project Website

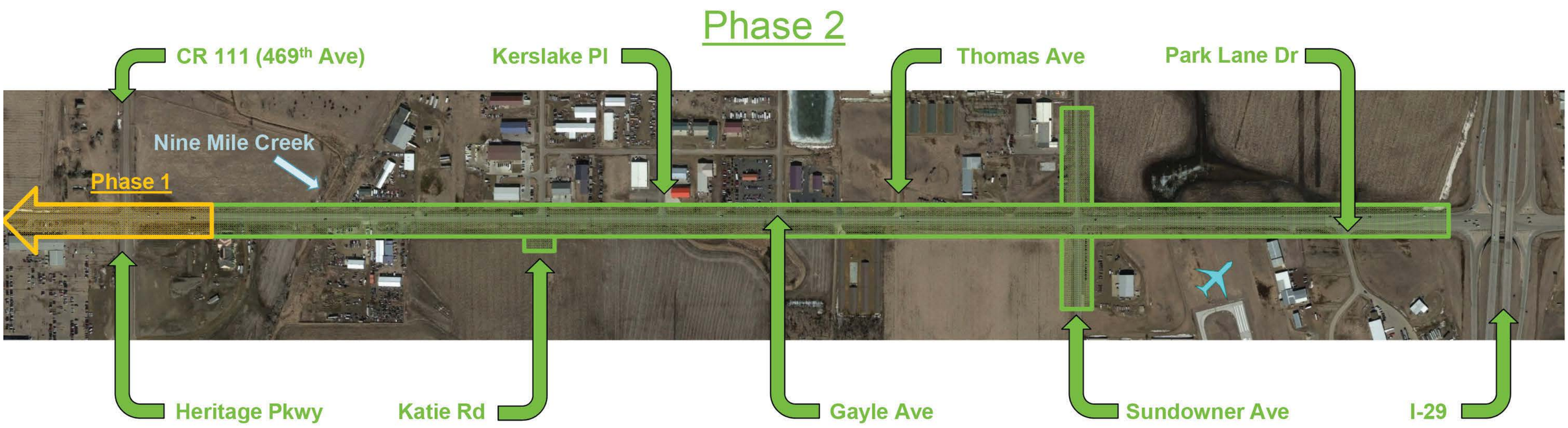
https://sioamurra@sehinc.comuxfalls.org/public-works/special-projects/projects-list/85th-st-improvements

City of Tea Project

CR 106 (271st St from Heritage Pkwy to I-29)

Project Overview

- Phase 2 - Limits & Content



- Phase 2 (Heritage Parkway to I-29):
  - Road Widening (4-lanes w/ raised median)
  - Addition of Sidewalks & Bike Path
  - Utility Installation
    - Water Main, Storm Sewer, and Sanitary Sewer
  - Traffic Signals at Intersections
    - Katie Road & Sundowner Avenue
  - Street Lights

- Phase 2 (additional notes):
  - No median at Gayle Ave (allowing Left & U-Turn)
  - Bike path along south side of road to I-29
  - Sanitary Sewer will end at Katie Rd
  - Katie Rd will be a 4-way intersection
  - Kerslake Pl, Gayle Ave, Thomas Ave, and Parklane Dr will be 3-way “T” intersections
  - Sundowner Ave will be full-build intersection

SEH

Environmental Study for I-29 / 85th Street

The South Dakota Department of Transportation; in cooperation with the City of Sioux Falls, the South Dakota Metropolitan Planning Organization, and the Federal Highway Administration; invites you to attend:

Public Open House 1

April 17, 2019

5:30 pm to 7:00 pm

Tea, SD City Hall

600 E 1st Street, Tea, SD

Short presentation to begin shortly after 5:30.

We hope you can join us as we plan for future improvements at the interchange of I-29 & 85th Street. The meeting will provide information on:

- Purpose and need for the project
- Previous studies
- Environmental review process
- Traffic analysis and traffic forecasts

Project staff will be available to discuss the projects, answer your questions, and collect your comments and feedback.

The open house is being held in a physically accessible place. Any individuals with disabilities who will require a reasonable accommodation in order to participate in the open house should submit a request to the department's ADA Coordinator at 605-773-3540 or 1-800-877-1113 (Telecommunication Relay Services for the Deaf). Please request the accommodations no later than 2 business days prior to the meeting in order to ensure accommodations are available.

https://siouxfalls.org/public-works/special-projects/projects-list/85th-st-improvements

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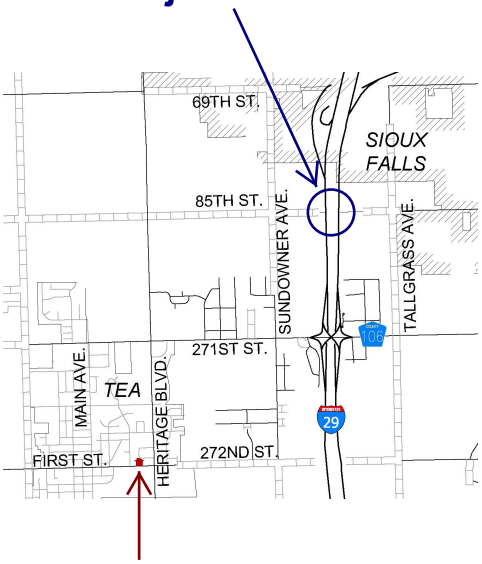
SEH - Attn Al Murra
401 E 8th St #309
Sioux Falls, SD 57103

I-29 / 85th Street Project Location



Join us at Tea City Hall
April 17th
from 5:30-7:00 pm

PROJECT CONTACTS

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South Dakota Department of Transportation
(605) 773- 6641
steve.gramm@state.sd.us

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City of Sioux Falls
(605) 367-8607
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Alan Murra, PE
Project Engineer with SEH
(605) 330-7000
amurra@sehinc.com

Name
Address
City State Zip

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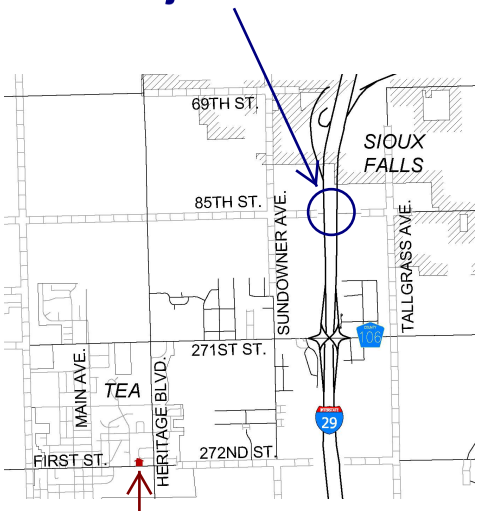

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Name
Address
City State Zip

Argus Leader

P.O. Box 677349, Dallas, TX 75267-7349

SEH -SIOUX FALLS
401 E 8TH ST STE 309
SIOUX FALLS, SD 57103

Account No.: SFA-0000000363
Ad No.: 0000372696
PO#:
Lines: 204
Ad Total: $169.46

RECEIVED
APR 16 2019
BY: SK

# of Affidavits: 1
Account No.: SFA-0000000363
Ad No.: 0000372696

Argus Leader
AFFIDAVIT OF PUBLICATION

STATE OF SOUTH DAKOTA

COUNTY OF MINNEHAHA } **ss**

I, being duly sworn, says: That The Argus Leader is, and during all the times hereinafter mentioned was, a daily legal newspaper as defined by SDCL 17-2-21, as amended published at Sioux Falls, Minnehaha County, South Dakota; that affiant is and during all of said times, was an employee of the publisher of such newspaper and has personal knowledge of the facts stated in this affidavit; that the notice, order or advertisement, a printed copy of which is hereto attached, was published in said newspaper upon

Saturday, March 30, 2019

Saturday, April 6, 2019

Sworn to and subscribed before me this 8 day of April, 2019.

Kevin Kamm
Legal Clerk

Vicky Felty
Notary Public, State of Wisconsin, County of Brown

4-14-21
My Commission expires

VICKY FELTY
NOTARY PUBLIC
STATE OF WISCONSIN

CITY OF SIOUX FALLS, CITY OF TEA, LINCOLN COUNTY
SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION
(SDDOT)

NOTICE OF PUBLIC
OPEN HOUSE / INFORMATION MEETING

Environmental Study and Preliminary Design for a New Interchange at I-29 and 85th Street Associated Roadway Improvements

Date: April 17, 2019
Time: 5:30 PM – 7:00 PM
Place: Tea City Hall, 600 E 1st St, Tea, SD 57064

The City of Sioux Falls, City of Tea, Lincoln County, Sioux Falls Metropolitan Planning Organization (MPO), South Dakota Department of Transportation (SDDOT), and the Federal Highway Administration (FHWA) will hold a public information meeting / open house to receive public input on the environmental study for this project. The open house will begin with a presentation that will start shortly after 5:30, followed by informal one-on-one discussions with the study team. The purpose of the meeting is to provide information on:

- Purpose and need for the project
- Previous studies, include the 85th Street Overpass Study and the 85th Street Interchange Justification Report
- Environmental review process
- Conceptual design plans for proposed roadway improvements

Area residents, business owners, and daily commuters are encouraged to attend and provide feedback on the project. SDDOT, City of Sioux Falls, City of Tea, Lincoln County, Sioux Falls MPO, and consultant team staff will be available after the presentation to discuss the project and answer your questions. During this time, you will also have the opportunity to present written comments. For those that cannot attend in person, the meeting will be live streamed.

You will be able to enter questions and watch live at:
www.facebook.com/CitySiouxFalls

Our team will do our best to answer questions received during the meeting.

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Published twice at the approximate cost of $169.46.

SF-0000372696

AFFIDAVIT OF PUBLICATION

STATE OF SOUTH DAKOTA
:SS
COUNTY OF LINCOLN

Debbie Schmidt

being first duly sworn, disposes and says: That (he/she) is a resident of the County of Lincoln and State of South Dakota; that THE LENNOX INDEPENDENT is a weekly legal newspaper of general circulation, printed and published in Lennox, in said County and State, and is now, and has been such newspaper continuously, during all the times hereinafter mentioned; that the affiant is affiliated with said newspaper as employer or employee and has personal knowledge of all the facts stated in this affidavit, and the notice and advertisement headed

Notice of Public Open House

a printed copy of which is hereonto attached and made a part hereof, was printed and published in the said newspaper 2 successive issues. That the first publication of said notice in said newspaper aforesaid was on Thursday the 28 day of Mar A.D., 20____ and that the succeeding publication was severally
on Thursday the 4 day of April A.D., 20 19
on Thursday the ____ day of _____ A.D., 20 _____
on Thursday the ____ day of _____ A.D., 20 _____
on Thursday the ____ day of _____ A.D., 20 _____
on Thursday the ____ day of _____ A.D., 20 _____
on Thursday the ____ day of _____ A.D., 20 _____
that the fees charged for the printing and publication of said notice and advertisement in said newspaper as aforesaid were 140 Dollars and 00 Cents, and that said fees for the printing and publishing of said notice and advertisement, and for the affidavit as aforesaid, have been fully paid; that the full amount of the fee charged for the publishing of the said attached and annexed notice and advertisement inures to the benefit of the publishers of the said Lennox Independent, that no agreement or understanding for the division thereof has been made with any other person, and that no part thereof has been agreed to be paid to any person, whomsoever.

Debbie Schmidt

Subscribed and sworn to before me this 25 day of Apr., 20 19.

Anne Homan
Notary Public
Lincoln County, South Dakota

My Commission expires Oct. 26, 20 24.

CITY OF SIOUX FALLS, CITY OF TEA, LINCOLN COUNTY
SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION
(SDDOT)

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Published twice at the approximate cost of $140.00. (3-28, 4-4)

Affidavit of Publication

STATE OF SOUTH DAKOTA
COUNTY OF LINCOLN

TERESA WILCOX
being first duly sworn on his oath says; that the Sioux Valley News is a legal weekly newspaper of general circulation as required by South Dakota Code of Nineteen Hundred Thirty-Nine, and any acts amendatory thereto, printed and published by the Sioux Valley News, Inc., in Canton, in said county and State, and has been such legal newspaper during the time hereinafter mentioned; that he is and during all of said time was publisher of said newspaper and has personal knowledge of the facts stated in this affidavit; that the advertisement headed:

SDDOT
Notice of Public Meeting

a printed copy of which is hereto attached, was printed and published in said newspaper for **TWO** successive week(s) upon the following dates, to-wit:

March 28, 2019
April 4, 2019

that the full amount of the fees charged for publishing the same to-wit: the sum of **$294.00** inures solely to the benefit of the publishers of said newspaper; that no agreement or understanding for any division of this sum has been made with any other person; and that no part of said sum has been agreed to be paid to any person whomsoever.

Teresa Wilcox

Ascribed and sworn to before me this **4th** day of **April, 2019.**

Notary Public, South Dakota

(Seal)

TIFFANY J. BALDWIN NOTARY Seal PUBLIC STATE OF SOUTH DAKOTA

My Commission Expires
January 12, 2024

CITY OF SIOUX FALLS, CITY OF TEA, LINCOLN COUNTY SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION (SDDOT)

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Published in the Sioux Valley News on March 28 and April 4, 2019, at the total approximate cost of $294.00.

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(605) 339-3633
www.sfshoppingnews.com

WESTERN COMMERCIAL printing & design
(605) 339-2383
www.westerncommercial.com

Western WEB PRINTING
(605) 339-2383
www.westernwebprinting.com

AFFIDAVIT OF PUBLICATION

STATE OF SOUTH DAKOTA

COUNTY OF MINNEHAHA

K. A. Lesnar being first duly sworn on his oath, says THE SIOUX FALLS SHOPPING NEWS is a legal weekly newspaper of general circulation as required by South Dakota Code of Nineteen Hundred Thirty-Nine, and any acts mandatory thereto, printed and published by the SIOUX FALLS SHOPPING NEWS in SIOUX FALLS SD, said county and State and has been such legal newspaper during the time hereinafter mentioned; that he is and during all of said time was publisher of said newspaper and has personal knowledge of the facts stated in this affidavit; that the advertisement headed

City of Sioux Falls, City of Tea, Lincoln County
South Dakota Department of Transportation (SDDOT)
NOTICE OF PUBLIC OPEN HOUSE /INFORMATION MEETING

a printed copy of which is hereto attached, was printed and published in the newspaper for two weeks; that said notice was published in the issues of said paper on the dates as follows, to wit:

The first publication being made on 04/03/2019
The second publication being made on 04/10/2019.

that $1,075.20 being the full amount of the fees for publication of the annexed notice, insures solely to the benefit of the publisher of the said newspaper; that no agreement or understanding for a division thereof has been made with any person; and that no part thereof has been agreed to be paid person whomsoever.

K. A. Lesnar

Ascribed and sworn before me this 3rd day of May 2019

Bernie Hanson (Seal)

Notary Public, South Dakota

BERNIE HANSON
SEAL NOTARY PUBLIC SOUTH DAKOTA SEAL

My commission expires
January 10, 2020

Miscellaneous

Paying $100-$300
For Scrap Vehicles
Depending On Vehicle
Pay Cash
Free Pick Up
(605)254-2364

Carriers Wanted
Tuesday Only
To Deliver The
Shopping News
From Age 10-75 Years Old.
Paid Every Two Weeks
Contact Dawn
605-275-6372
605-940-4914
Office Or Cell
Great Exercise And
Make Some Money!

For Sale:
Brown Leather Couch
Like New,
Reclines On Each End
For More Info Call:
605-251-3021

LOOKING TO BUY
He-Man Figures, GI Joe, and
Old Models.
PAYING CASH
CALL: 605-335-7528

Pets & Supplies

Bernedoodle Puppies
$1,050
Ridgeviewkennels.com

FREE! FREE! FREE! FREE! Shop the Grocery stores that advertise in the Shopping News. They bring their ads to you FREE of charge.

CAMPBELL SUPPLY
Insert Wraps & Booklets Featured in the Sioux Falls Shopping News

Pets & Supplies

French Brittany Pups
And Started Adult Dogs
Available Now
Awesome Hunters
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Jess 515-657-1640
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Want To Buy

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The Shopping News accepts all major credit cards.

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Sioux Falls Shopping News

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Call 605-940-4912

Wanted To Buy
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To Trim And Cut Trees.
Excellent Condition
605-360-2371

The Shopping News has a 24 hour mail slot in the door.

Attention:
Don't miss
the colorful
Fareway Foods
Page 3 Ad
& Flyer
this week in the
Shopping News!

Miscellaneous

Best Knights
Of Columbus Fish Dinner
St. Katharine Drexel Parish
1800 S. Katie Ave.
March 15th - April 12th
Fridays Only
Following 5:30 PM Stations

CONSTRUCTION
EQUIPMENT SALE
2 Concrete Saws
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Antiques, Furniture, Glassware,
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Are you paying too much for car insurance?
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- Home
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SINCE 1981
Prins Insurance of Sioux Falls, Inc.
Call for a quote
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Look for the LEWIS Flyer & Half Page Ad This Week in the Shopping News!

MAKE YOUR BATHROOM SAFER
Find everything you need to create a safe bathroom. Helpful staff can answer all of your questions!

Handy Man Remodeling Center
336-0316
HandyManHome.com

ATTENTION:
MBE/WBE and Section 3 Contractors:

This project is assisted by HOME funds, and Section 3 requirements are applicable to this project (see www.hud.gov/section3)
We are soliciting bids and material quotations for the following project:
Roseland Heights Apartments
Location: Sioux Falls, SD
Project bid date and time is 4/17/19 at 10:00am
General Contractor:
BlackWing Elite Builders
7409 S Bitterroot Place
Sioux Falls, SD 57108
Plans & bidding info can be obtained by email (PDF).
Send requests to
(please identify yourself as MBE/WBE or Section 3):
Randy Reese, Director of Construction
Randy@blackwingbuilders.com
(605)334-9464

CITY OF SIOUX FALLS, CITY OF TEA, LINCOLN COUNTY
SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION (SDDOT)

NOTICE OF PUBLIC OPEN HOUSE / INFORMATION MEETING

Environmental Study and Preliminary Design for a New Interchange at I-29 and 85th Street and Associated Roadway Improvements

Date: April 17, 2019
Time: 5:30 PM – 7:00 PM
Place: Tea City Hall, 600 E 1st St, Tea, SD 57064

The City of Sioux Falls, City of Tea, Lincoln County, Sioux Falls Metropolitan Planning Organization (MPO), South Dakota Department of Transportation (SDDOT), and the Federal Highway Administration (FHWA) will hold a public information meeting / open house to receive public input on the environmental study for this project. The open house will begin with a presentation that will start shortly after 5:30, followed by informal one-on-one discussions with the study team. The purpose of the meeting is to provide information on:

- Purpose and need for the project
- Previous studies, include the 85th Street Overpass Study and the 85th Street Interchange Justification Report
- Environmental review process
- Conceptual design plans for proposed roadway improvements

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(Telecommunication Relay Services for the Deaf). Please request the accommodations no later than 2 business days prior to the meeting in order to ensure accommodations are available.

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Published twice at the approximate cost of $1,075.20.

TASTY BITES FOR EASTER MEALS

(METRO) Easter dinner is a special occasion, presenting an opportunity for family and friends to gather, celebrate their faith and give thanks for their blessings.

Traditional dishes tend to find their way to the Easter dinner table, but no meal would be complete without some sort of deviled eggs appetizer. Deviled eggs make good use of hard-boiled eggs that may not have been colored, or even those that have been dyed and can now be safely repurposed as food.

"Debonaire Deviled Eggs" from "Southern Appetizers" by Denise Gee (Chronicle Books) teaches home chefs how to craft tasty, aesthetically pleasing eggs.

Debonaire Deviled Eggs

Serves 8 to 12

Ingredients

- 12 large eggs
- 1/4 cup mayonnaise
- 4 slices bacon, cooked and crumbled (optional)
- 3 tablespoons sweet pickle relish
- 2 teaspoons prepared mustard
- 1/4 teaspoon salt
- 1/8 teaspoon ground black pepper
- Sprigs of fresh savory or another herb for garnish

Directions

Turn the eggs bottom-(wider-) side up in the carton. Use a pushpin to delicately poke one hole squarely in each center.

Fill a large saucepan or small Dutch oven with 2 to 21/2 quarts of water (enough to cover the eggs; use two pans if cooking all the eggs at once). Bring the water to a rolling boil.

Use a slotted spoon to add six eggs to the pan (working quickly but carefully to get them in at the same time); boil the eggs for 6 minutes.

Remove the pan from the heat. Let the eggs sit for 6 minutes for slightly soft yolks; add about 40 seconds for firmer yolks).

Remove each egg with a slotted spoon and place it on a kitchen towel. Repeat with the remaining six eggs. Let the eggs cool to room temperature, about 20 minutes, before peeling.

(Store in the refrigerator, unpeeled, for up to 1 week; peeled for up to 4 days).

Peel the eggs under cool running water. Slice the eggs in half lengthwise, gently scooping out the yolks into a medium bowl. Add the mayonnaise, three-fourths of the crumbled bacon (if using), pickle relish, mustard, salt, and pepper. Stir to combine (and adjust seasonings as desired). Use a small spoon (or better yet, a piping bag) to insert the filling into the egg halves. Garnish with the remaining chopped bacon and savory, if desired, before serving.

Note: Large eggs are best used for egg plates and are easier to eat in one or two bites.

Tip: Boil eggs for the "Debonaire Deviled Eggs" recipe at the same time you are boiling eggs to decorate for Easter to save time!

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Published twice at the approximate cost of $1,075.20.

AFFIDAVIT OF PUBLICATION

STATE OF SOUTH DAKOTA

:SS

COUNTY OF LINCOLN

Debbie Schmidt

being first duly sworn, disposes and says: That (he/she) is a resident of the County of Lincoln and State of South Dakota; that the TEA WEEKLY is a weekly legal newspaper of general circulation, printed and published in Tea, in said County and State, and is now, and has been such newspaper continuously, during all the times hereinafter mentioned; that the affiant is affiliated with said newspaper as employer or employee and has personal knowledge of all the facts stated in this affidavit, and the notice and advertisement headed

Notice of Public Open House

a printed copy of which is hereonto attached and made a part hereof, was printed and published in the said newspaper 2 successive issues. That the first publication of said notice in said newspaper aforesaid was on Friday, the 29 day of Mar A.D., 20 19 and that the succeeding publication was severally on Friday the 5 day of Apr A.D., 20 19
on Friday the ____ day of ____ A.D., 20 ____
on Friday the ____ day of ____ A.D., 20 ____
on Friday the ____ day of ____ A.D., 20 ____
on Friday the ____ day of ____ A.D., 20 ____
on Friday the ____ day of ____ A.D., 20 ____
that the fees charged for the printing and publication of said notice and advertisement in said newspaper as aforesaid were 140 Dollars and 00 Cents, and that said fees for the printing and publishing of said notice and advertisement, and for the affidavit as aforesaid, have been fully paid; that the full amount of the fee charged for the publishing of the said attached and annexed notice and advertisement inures to the benefit of the publishers of the said Tea Weekly, that no agreement or understanding for the division thereof has been made with any other person, and that no part thereof has been agreed to be paid to any person, whomsoever.

Debbie Schmidt

Subscribed and sworn to before me this 25 day of Apr., 20 19.

Anne Homan

Notary Public
Lincoln County, South Dakota

My Commission expires Oct. 26, 20 24.

CITY OF SIOUX FALLS, CITY OF TEA, LINCOLN COUNTY
SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION
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Published twice at the approximate cost of $140.00. (3-29, 4-5)

I-29/85th Street Interchagne Project
Public Comment Database

#	Source	Comment	Action Needed	Response	Action Taken (date)
1	PIM1 comment card	Here is my concern: I do not want to see 85th become a NO PASSING highway with a turn lane. We already have a NO PASSING road with 271st St between Tea and I-29. It [expletive]! Don't give me the safety pitch. Stopped traffic is safe. But that doesn't efficiently move traffic.	email response	Thanks for attending the public meeting and providing feedback for the project. The next step in the study process is to evaluate the impacts of each of the alternatives. The goal of an interchange at 85th street is to improve local and regional traffic operations and meet transportation system demands. More information will be presented at a future public meeting which is currently planned to take place in late winter next year. Thanks again for your feedback on the project. Please watch for updates on the project website. https://siouxfalls.org/public-works/special-projects/projects-list/85th-st-improvements If you have any additional questions or comments regarding the project, please don't hesitate to contact me.	Letter prepared and sent - June 4, 2019
2	PIM1 comment card	With all of the drainage issues in the area it will increase the environmental impact for drainage on Nine Mile Creek and not just the area for the overpass.	Coordinate with County on Drainage Needs and Document in the EA indirect and cumulative impacts	Thanks for attending the public meeting and providing feedback for the project. We agree that impacts to drainage and runoff will be a key consideration for the design of this project. The study team also understands that Lincoln County is currently working on the development of a new county-wide stormwater management plan and that the plan is still in the very early stages of development. The study team is reaching out to Lincoln County and their consultant regarding drainage concerns and will be coordinating with them to discuss the county's drainage needs and the potential impacts of the interchange project. Our intent is to have ongoing coordination with Lincoln County so the drainage plan can help inform the design of this project as it moves through the development process. Thanks again for your feedback on the project. Please watch for updates on the project website. https://siouxfalls.org/public-works/special-projects/projects-list/85th-st-improvements If you have any additional questions or comments regarding the project, please don't hesitate to contact me.	Letter prepared and sent - June 4, 2019
3	PIM1 comment card	How far will the black top road go? How about to Old Hwy 17?	call or write a letter	Thanks for attending the public meeting and providing feedback for the project. This project currently includes 2-lane pavement along 270th Street out to 469th Avenue and along Sundowner Avenue between 69th street and 270th street. It will also include pavement for new roads and modifications to the Interstate highway system. Pavement on other sections of area roadways may be considered by the Cities of Sioux Falls and Tea, and the SDDOT, but will not likely take place as part of this project. Thanks again for your feedback on the project. Please watch for updates on the project website. https://siouxfalls.org/public-works/special-projects/projects-list/85th-st-improvements If you have any additional questions or comments regarding the project, please don't hesitate to contact me.	Letter prepared and sent - June 4, 2019

4	PIM1 comment card	I have lived here over 30 years, and the first 15 years sump pump only ever when had heavy rain. Now runs all winter long. Water all coming from the north and any more development causes more water.	Coordinate with County on Drainage Needs and Document in the EA indirect and cumulative impacts. Follow up with email	Thanks for attending the public meeting and providing feedback for the project. We agree that impacts to drainage and runoff will be a key consideration for the design of this project. The study team also understands that Lincoln County is currently working on the development of a new county-wide stormwater management plan and that the plan is still in the very early stages of development. The study team is reaching out to Lincoln County and their consultant regarding drainage concerns and will be coordinating with them to discuss the county's drainage needs and the potential impacts of the interchange project. Our intent is to have ongoing coordination with Lincoln County so the drainage plan can help inform the design of this project as it moves through the development process. Thanks again for your feedback on the project. Please watch for updates on the project website. https://siouxfalls.org/public-works/special-projects/projects-list/85th-st-improvements If you have any additional questions or comments regarding the project, please don't hesitate to contact me.	Letter prepared and sent - June 4, 2019
5	PIM1 comment card	New news paper says meeting is at 7:30 pm Bull [expletive]	None		
6	emailed comment	Good afternoon I wanted to touch base on the drainage issues for the proposed 85th Street overpass. I was amazed at your informational meeting to learn that the impact study was only a mile around the area for the overpass. Unfortunately that area affects many miles and eventually all of the runoff ends up in Lake Alvin. As a home owner at 47175 273rd Street in Harrisburg Nine Mile Creek runs through my property and any time we take wetlands out and move them north of Sioux Falls it makes the water runoff in Nine Mile Creek even more. I have been there for 15 years and what started as a creek that only had water in it when it rained to running all the time and with a 2 inch rain it consumes my back yard. It has taken us many years to get Lincoln County to look at the flooding issues around the county and actually budget money to create a drainage plan. Lincoln County has signed a contract with Wenck out of St. Cloud MN to create a drainage plan for Lincoln County. To me it does not make sense to push through your study without knowing the drainage plan for the county and how it will affect the project and if it will even be feasible. I would recommend for you to reach out to residents that are affected by Nine Mile Creek and get their input on how it will affect their property and livelihood. Toby Brown with Lincoln County has a 3 inch binder book of photo's on the drainage from that area and down stream, I would encourage you to look at them and see how the project is ahead of itself. There is a meeting tonight in Harrisburg that Wenck has set up from 5 to 8 at the community room in Liberty Elementary School 200 E Willow Street. I would really encourage you to attend and get a feel of what we as owners go through when it rains and we wonder if we are going to lose what we have worked hard to get. Thank you for your time I look forward in talking to you my contact information is below.	Coordinate with County on Drainage Needs and Document in the EA indirect and cumulative impacts. Follow up with email	(same commentor - received letter - see above)	Letter prepared and sent - June 4, 2019

7	emailed comment	I attended the presentation and it appears there is no coordination by the city and state on moving forward with the SD 100 project. Unless I'm misinformed, there is no planned work on that project once the north segment is completed in the next couple of years. SD 100 was touted by the city as a means to promote growth and alleviate congestion on the arterial streets. If that road is not constructed in the next 10 years, as a homeowner adjacent to 85th Street, I foresee significant congestion and conflicts on 85th between Tallgrass and Cliff Ave. I'm not opposed to the interchange, but feel SD 100 should be constructed simultaneously or soon after.	email response	Thanks for attending the public meeting and providing feedback for the project. Our study team agrees that SD 100 is another important piece of completing the regional transportation system in the Sioux Falls metro area, and that the proposed interchange at I-29 and 85th Street is not intended to replace a future I-29 and SD 100 interchange. SDDOT has entered a Pre-Annexation agreement with other project stakeholders, which describes the construction of SD 100 from I-29 to Louise Avenue. The construction of SD 100 will continue to take place as resources become available, and planning and construction for that project will continue through the I-29/85th Street project and will continue after the project has been completed. Thanks again for your feedback on the project. Please watch for updates on the project website. https://siouxfalls.org/public-works/special-projects/projects-list/85th-st-improvements If you have any additional questions or comments regarding the project, please don't hesitate to contact me.	Email Response sent - June 4, 2019
8	emailed comment	We were unable to attend the meeting the other night regarding 85th street and I-29 project. We want to state that we are in favor of the project including and 85th Street interchange. With the continued development on the south side with the new Avera hospital, we believe this would ease traffic on Louise Avenue. I work south of Sioux Falls and use I-29 every day. Living back in the West Pointe Estates development, this interchange would be very convenient for me to utilize on a daily basis. I know numerous people that commute to Sioux Falls that work at the heart hospital. They currently use Tallgrass gravel to get there and the 85th interchange would make their commute significantly easier as well. This interchange hopefully will bring along with it much needed retail business areas in this area. We hope that this will help with approval of this project. We are in favor!	None		

I-29 / 85th Street New Interchange
Noise Barrier Analysis

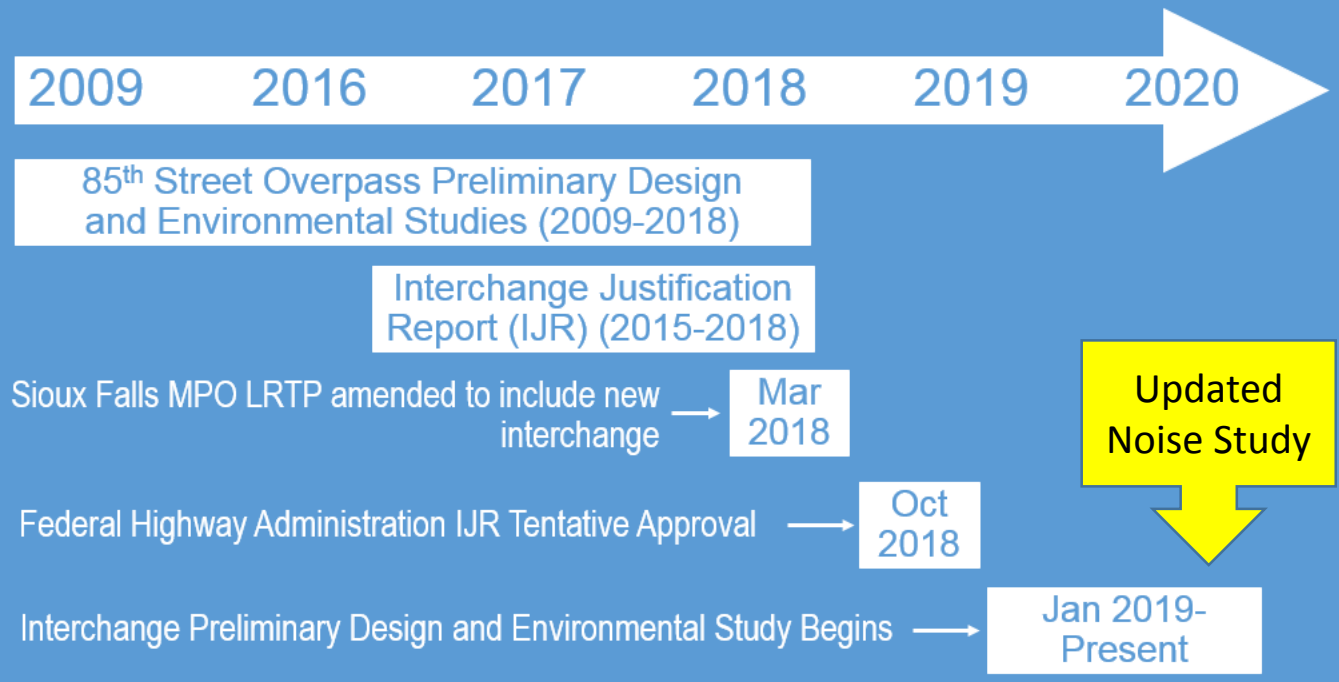
August 7, 2020

SEH

Building a Better World for All of Us®

Purpose of This Presentation

Noise Study Discussion History



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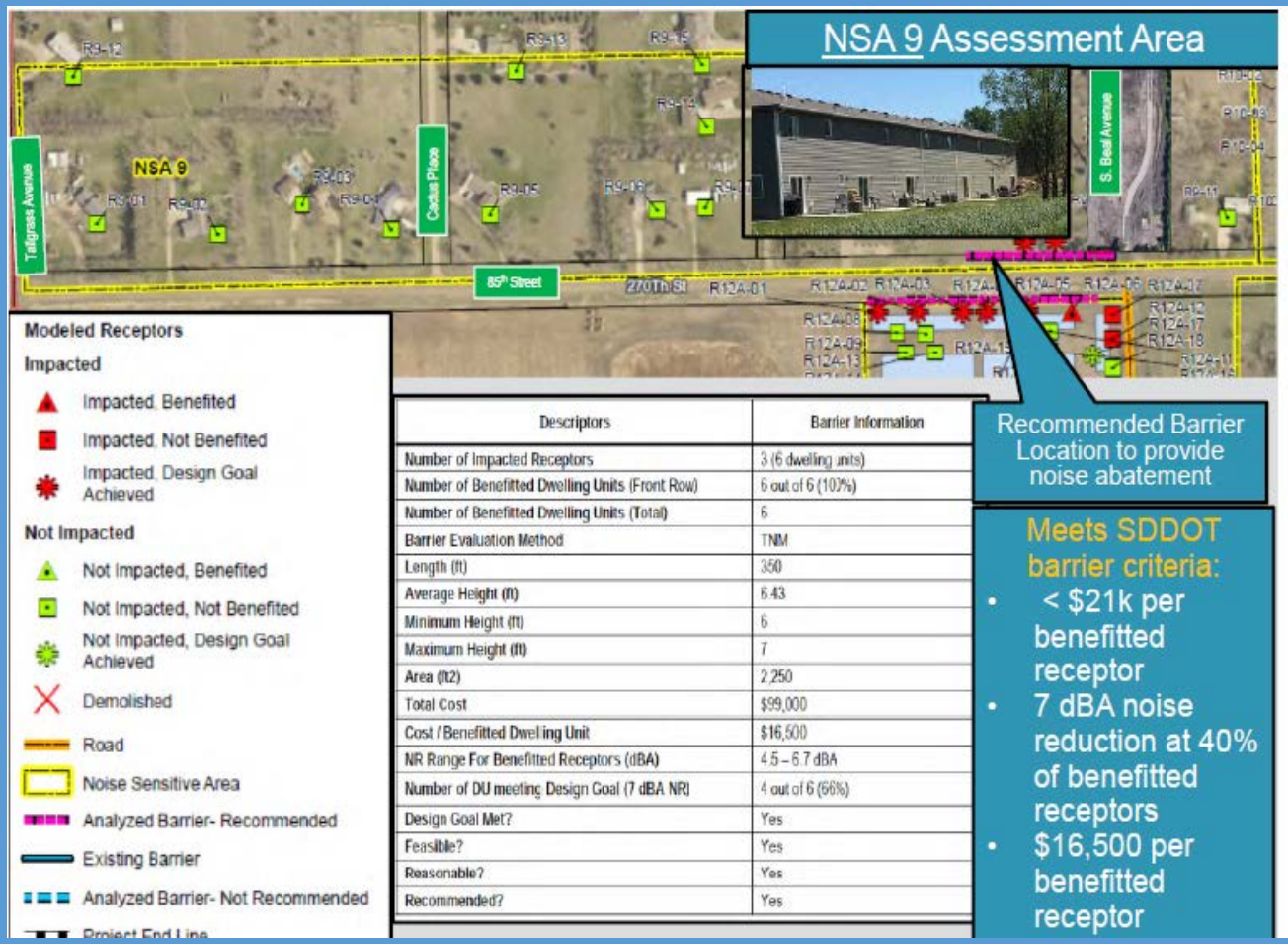
Prior Noise Study Mitigation Site – Barrier #9



Descriptors	Barrier Information
Number of Impacted Receptors	3 (6 dwelling units)
Number of Benefitted Dwelling Units (Front Row)	6 out of 6 (100%)
Number of Benefitted Dwelling Units (Total)	6
Barrier Evaluation Method	TNM
Length (ft)	350
Average Height (ft)	6.43
Minimum Height (ft)	6
Maximum Height (ft)	7
Area (ft2)	2,250
Total Cost	$99,000
Cost / Benefitted Dwelling Unit	$16,500
NR Range For Benefitted Receptors (dBA)	4.5 – 6.7 dBA
Number of DU meeting Design Goal (7 dBA NR)	4 out of 6 (66%)
Design Goal Met?	Yes
Feasible?	Yes
Reasonable?	Yes
Recommended?	Yes

Recommended Barrier Location to provide noise abatement

Meets SDDOT barrier criteria:

- < $21k per benefitted receptor
- 7 dBA noise reduction at 40% of benefitted receptors
- $16,500 per benefitted receptor

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Building a Better World for All of Us®

So what's new and why is this being done again?

Noise Abatement Thresholds (SDDOT Policy) For A Barrier

- Reasonableness = Cost per Benefitted Receptor is $21K or less
- Acoustic Feasibility = 5 dBA reduction for 60% of receptors directly behind the barrier and 7dBA reduction for 40% of all benefitted receptors
- General Feasibility = safety, access requirements for drainage, utilities, and constructability AND accepted by majority vote of residents / owners

New Noise Model Results for Barrier # 9:

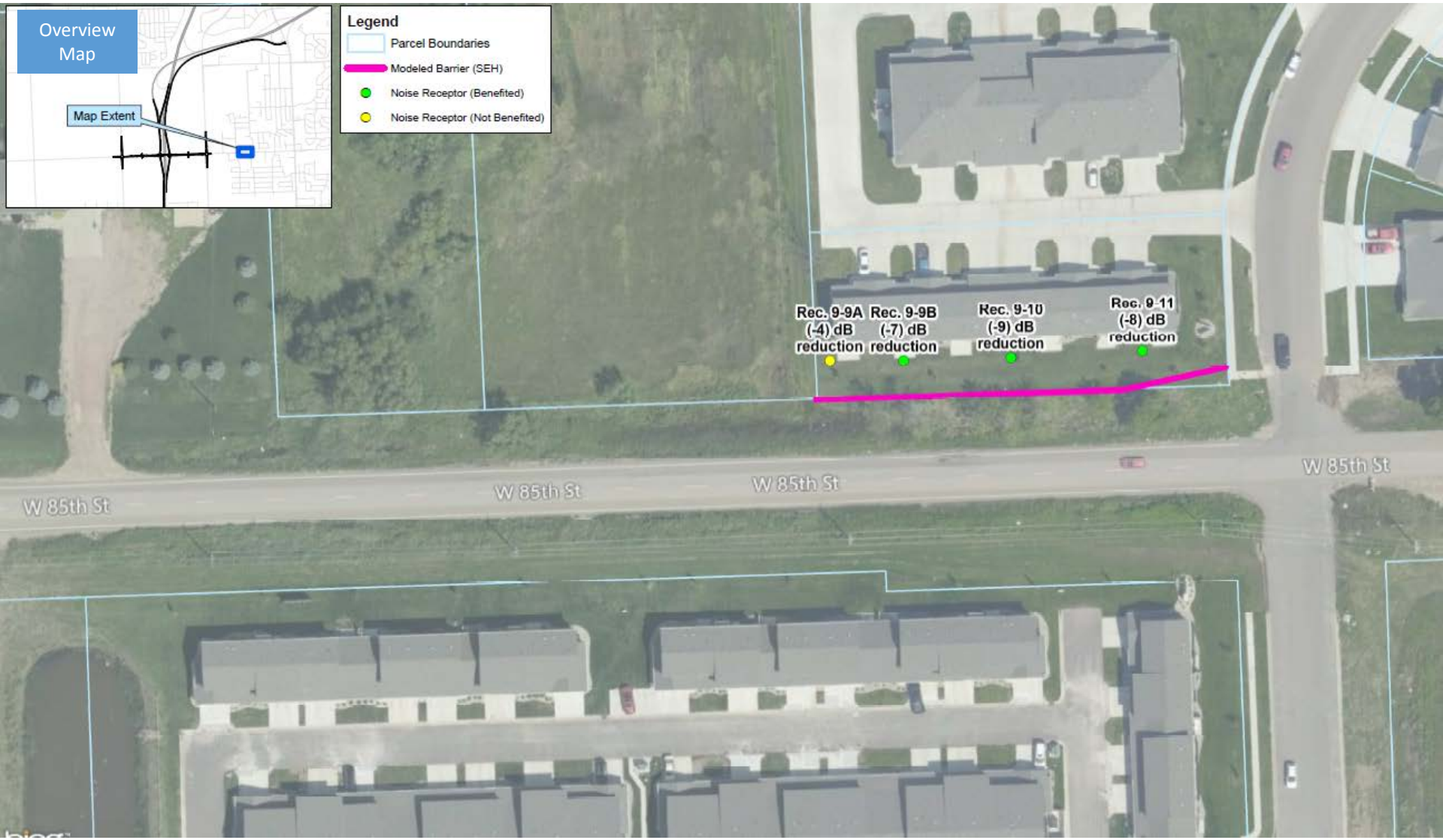
- Still Reasonable and Feasible, pending public meeting vote
- Wall height – consistent 6 ft - 7 ft. which provides noise reduction benefit to receptors 5 ft. above the grade (average ear height) facing the street
- Wall length – 235 ft. (includes one parcel and sightline reduction)

Table B1
Build Noise Barrier Cost Effectiveness (Noise Area 9)
Noise Barrier

				Future Noise Levels		Acoustic Effectiveness						Cost Effectiveness ($44/SF)					
Noise Barrier	Receiver	Land Use	FHWA Noise Standard (Leq dBA)	Build (Leq dBA)	Build with Barriers (Leq dBA)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5 dBA)	Total Benefitted Receptors	Acoustically Effective	Design Goal (-7dBA)	Barrier Length (ft)	Barrier Height (ft)	Area of Barrier (SF) [1]	Total Cost [2]	Cost per Benefited Receptor	NOISE WALL RESULTS
B1	9-9A	Residential	67	70.4	66.3	-4.1	1	0	5	YES	YES	235	6	1410	$62,040	$12,408	YES
	9-9B	Residential	67	70.6	62.9	-7.7	1	1									
	9-10	Residential	67	70.6	61	-9.6	2	2									
	9-11	Residential	67	70.4	62	-8.4	2	2									

Approx RW needed = 1500 SF
Estimated Cost/SF = $25
Cost / Benefited Receptor = $7,500
TOTAL Cost / Benefited Receptor = $19,908
(Includes Wall + RW)

- Wall layout extends to only one parcel where the townhomes are located - the previous layout extended further to two parcels and provided more noise reduction for the outer receptor.
- Don’t need to meet the noise reduction goal on the outer parcel according to SDDOT’s noise guidance, so reducing it should help with real estate acquisition negotiations (one vs. two parcels).
- Wall access for maintenance right-of-way (permanent easement) will need to be purchased – cost estimate includes 10 ft. of right-of-way.



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401 East 8th Street
Suite 309
Sioux Falls, SD 57103
(605) 330-7000

Print Date: 4/20/2020
Source: Bing Maps, Lincoln County
Map by: mfelk
Projection: State Plane South Dakota S

Noise Analysis Future Build Results and Barrier Locations: Barrier Analysis Results - NSA's 9-14

I-29 and 85th Street Interchange
Lincoln County, SD

Feet
0 10 20 30 40

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Why is the wall bent inward toward the residential units?

What is meant by “Easements”?

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Is this the only place along 85th Street that a noise barrier will be considered?

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We need your vote on a noise barrier wall!

You can vote with a paper ballot delivered to your address

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I-29/85th Street New Interchange Project - Noise Wall Opinion Ballot

We would like your opinion regarding the current Noise Study for 85th Street from Louise Avenue to Sundowner Avenue in Sioux Falls and Tea, South Dakota. **This survey will close on September 7, 2020. Please indicate your choices in the boxes below and return in the enclosed postage paid envelope.**

1. Do you support or oppose the construction of a 6-7 ft. high concrete noise wall along 85th Street, east of the Beal Avenue Intersection and in front of the Southwoods Townhome Building?

   ☐ I support the construction of a noise wall at this location.

   ☐ I oppose the construction of a noise wall at this location.

2. Do you rent or own your property?

   ☐ I am a lease holder / renter

   ☐ I am a property owner

3. Please share any comments:

4. Please provide your contact information (name, address, phone, and email):

Thank you for completing and returning this official ballot.

September 7, 2020

Votes need to be returned for tabulation and certification

What happens after the vote?

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For More Information

http://siouxfalls.org/85thStreet

ADA accommodation is needed to view the presentation in pdf format, please contact the Human Relations Office at (605) 367-8745 (voice), (605) 367-7039 (TTY), or humanrelations@siouxfalls.org

Questions or Comments:

Shannon Ausen, City of Sioux Falls, (605) 367- 8607 Email: sausen@siouxfalls.org

Kyle Heimerl, South Dakota Department of Transportation, (605) 773-3436

Email: Kyle.Heimerl@state.sd.us

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Cities of Sioux Falls and Tea, Lincoln County, Sioux Falls MPO,

and South Dakota Department of Transportation

Public Notice of a Noise Study and Barrier Analysis Presentation

For 85th Street, between Hanson Place and Beal Avenue

Dear Resident:

The Cities of Sioux Falls and Tea, Lincoln County, Sioux Falls Metropolitan Planning Organization, and South Dakota Department of Transportation (SDDOT) are working cooperatively to study the construction of a new interchange at 85th Street and I-29.

With the FHWA tentative approval of the new interchange after its approval of an I-29 Overpass bridge in 2018, a new noise study was required for the planned new I-29 Interchange.

A separate notice is hereby given for the availability of an online presentation **on August 7, 2020,** for the potential installation of a noise barrier determined to be reasonable from the new noise study. The potential new barrier is located on the north side of 85th Street between Hanson Place and Beal Avenue intersections. The purpose of the online presentation is to explain the results of the new noise study and barrier analysis to help determine whether or not a noise barrier will be constructed in this segment of 85th Street. The online presentation, located at http://siouxfalls.org/85thStreet, is available in narrated and pdf format, and achieves public meeting outreach requirements during the COVID-19 pandemic. **No decisions on noise barrier construction have been made at this time.** Online comments and questions will also be received at http://siouxfalls.org/85thStreet.

If an ADA accommodation is needed to view the presentation in pdf format, please contact the Human Relations Office at (605) 367-8745 (voice), (605) 367-7039 (TTY), or humanrelations@siouxfalls.org.

If you have questions or comments, please contact Shannon Ausen, City of Sioux Falls, (605) 367-8607, Email: sausen@siouxfalls.org; Kyle Heimerl, South Dakota Department of Transportation, (605) 773-3436, Email: Kyle.Heimerl@state.sd.us.; or Al Murra, Short Elliott Hendrickson Inc., (605) 330-7015, Email: amurra@sehinc.com.

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   ☒ I oppose the construction of a noise wall at this location.

2. Do you rent or own your property?

   ☒ I am a lease holder / renter

   ☐ I am a property owner

3. Please share any comments:

   A wall would be safer, yes. However, the wall would lose all sights from the back of the yard.

4. Please provide your contact information (name, address, phone, and email):

   Brock VanDyke
   7619 S. Beal Unit #1
   Sioux Falls SD 57108
   605 695 4193
   brockvandyke@yahoo.com

Thank you for completing and returning this official ballot.

Received 8/26/20

UNIT-1

I-29/85th Street New Interchange Project - Noise Wall Opinion Ballot

We would like your opinion regarding the current Noise Study for 85th Street from Louise Avenue to Sundowner Avenue in Sioux Falls and Tea, South Dakota. **This survey will close on September 7, 2020. Please indicate your choices in the boxes below and return in the enclosed postage paid envelope.**

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2. Do you rent or own your property?

   ☒ I am a lease holder / renter

   ☐ I am a property owner

3. Please share any comments:

   I feel a noise wall would cause less sunlight into my home and would be ugly to look at outside my back door.

4. Please provide your contact information (name, address, phone, and email):

   Joshua Freese jfreese245@gmail.com

Thank you for completing and returning this official ballot.

Received 8/18

UNIT-2

I-29/85th Street New Interchange Project - Noise Wall Opinion Ballot

We would like your opinion regarding the current Noise Study for 85th Street from Louise Avenue to Sundowner Avenue in Sioux Falls and Tea, South Dakota. **This survey will close on September 7, 2020. Please indicate your choices in the boxes below and return in the enclosed postage paid envelope.**

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   ☐ I oppose the construction of a noise wall at this location.

2. Do you rent or own your property?

   ☐ I am a lease holder / renter

   ☐ I am a property owner

3. Please share any comments:

4. Please provide your contact information (name, address, phone, and email):

   Sam Wipf 214-1295
   American Properties
   Sam@SelectCompanies.co

Thank you for completing and returning this official ballot.

Received 8/17/20

I-29/85th Street New Interchange Project - Noise Wall Opinion Ballot

We would like your opinion regarding the current Noise Study for 85th Street from Louise Avenue to Sundowner Avenue in Sioux Falls and Tea, South Dakota. **This survey will close on September 7, 2020. Please indicate your choices in the boxes below and return in the enclosed postage paid envelope.**

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   ☐ I oppose the construction of a noise wall at this location.

2. Do you rent or own your property?

   ☒ I am a lease holder / renter

   ☐ I am a property owner

3. Please share any comments:

4. Please provide your contact information (name, address, phone, and email):

   Eric Gaspar
   7619 #4 S. Beal Ave
   605-941-3277
   BLACK02[redacted]SI@gmail.com

Thank you for completing and returning this official ballot.

Received 9/4/20

UNIT-4