FAST-41 Environmental Assessment

Winnebago Tribe of Nebraska Broadband Connectivity Project

Department of Commerce

National Telecommunications and Information Administration

Cooperating Agencies:

Bureau of Indian Affairs Great Plains Region

United States Army Corps of Engineers, Omaha District

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Wayne, Dixon, Thurston, Dakota Counties, Nebraska and Woodbury County, Iowa

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1.0 EXECUTIVE SUMMARY

The Winnebago Tribe of Nebraska (Grantee) was awarded funding for its Broadband Connectivity Project (Project) under the U.S. Department of Commerce, National Telecommunications and Information Administration (NTIA) Tribal Broadband Connectivity Program. The Project received FAST-41 coverage, and coordination with cooperating agencies will increase efficiency in the permitting process and ensure concurrent and timely implementation of the Project. The purpose of the Project is to deploy a broadband infrastructure network on the Winnebago Reservation and in the adjacent communities of Emerson, Homer, and Wakefield to connect unserved/underserved tribal households, businesses, and community anchor institutions (i.e., schools, medical facilities) to reliable and affordable high-speed internet.

The Winnebago Reservation includes a high percentage of residents and businesses without internet service either because of lack of infrastructure or high cost. Lack of available internet service or inadequate access at higher-than-average prices has limited opportunities for residents of the Winnebago Reservation to pursue educational enrichment, employment opportunities, economic mobility, and access to vital health care services.

The Project would provide qualified broadband service to approximately 600 unserved Native American households, 40 unserved Native American and/or tribal businesses, and 16 tribal anchor institutions. In addition, the Project includes a rate stabilization program designed to provide up to a maximum payment on broadband household monthly bills to alleviate the burden felt most heavily by those in poverty and to prevent disconnection of service. By providing qualified broadband service to the Winnebago Reservation and adjacent communities, the Project is expected to facilitate economic development and commercial activity, create remote employment and entrepreneurial opportunities, and increase availability of remote learning and telehealth services.

The proposed fiber route is based on a map of the unserved properties in the project area. Based on the proposed fiber path, four alternatives were considered: (1) underground cable alternative (proposed action); (2) overhead cable alternative; (3) wireless alternative; and (4) no action alternative. After consideration of the feasibility of each alternative, the overhead cable and wireless alternatives were determined not to be reasonable due to susceptibility to damage and lack of cellular providers and service, respectively, and were eliminated from further study. The proposed action alternative is moved forward for comprehensive analysis and final design because it would have fewer infrastructure constraints, less environmental impact, lower maintenance cost, greater system longevity, and fulfill the purpose and need of the project.

The proposed action involves the construction of a multi-conduit, underground Fiber to the Premises (FTTP) system capable of 200 megabits per second (Mbps) download speeds and 40 Mbps upload speeds. In total, approximately 235 miles of new fiber-optic cable would be buried within protective conduit along existing road right-of-way (ROW) and under the Missouri River in the project area. The buried fiber-optic line installation, which consists of the telecommunications cable and its protective conduit, would be performed using plowing and trenching construction techniques along roadways, and a directional boring machine would be used to install line under waterway, road, and railroad crossings. In addition, to facilitate operation and maintenance of the FTTP system, ancillary equipment would be installed along the alignment including optical line terminals (OLT), vaults, handholes, pedestals, markers, and network interface devices (NID).

Because the proposed project uses federal funds, NTIA must fulfill obligations under the National Environmental Policy Act (NEPA) and other applicable local, state, and federal regulations. In compliance with these regulations, the following environmental assessment (EA) has been prepared. The implementation of NEPA requires a systematic, interdisciplinary approach to project planning and implementation and emphasizes that the environmental impacts of federally funded projects be given serious consideration in the decision-making process. The EA evaluates the potential social, economic, and environmental effects from the proposed project and was prepared with input from stakeholder agencies. The EA addresses the following:

- Noise
- Air Quality
- Geology and Soils
- Water Resources
- Biological Resources
- Historic and Cultural Resources
- Aesthetic and Visual Resources
- Land Use
- Infrastructure
- Socioeconomic Resources
- Human Health and Safety

The results of the EA indicate that with appropriate mitigation and conservation measures, the proposed action would not result in any significant adverse effects to the natural, cultural, or human environment. A summary of the environmental impacts of the proposed action and the no action alternative are provided in Table 1.

Table 1-1. Summary of Environmental Impacts of the Proposed Action and the No Action Alternative.

Resource Areas	Proposed Action	No Action Alternative
Noise	Temporary impacts would occur during construction. Mitigation methods include limiting construction to normal business hours. No significant impacts.	No direct or indirect impacts would result from this alternative.
Air Quality	Temporary impacts during construction would occur from fugitive dust particles. Mitigation methods include using water trucks to reduce dust emissions. No significant impacts.	No direct or indirect impacts would result from this alternative.

Resource Areas	Proposed Action	No Action Alternative
Geology and Soils	Temporary impacts would occur during construction. This includes compaction at staging areas and dust particles from directional boring. Water trucks would be used to reduce dust emissions. No significant impacts.	No direct or indirect impacts would result from this alternative.
Water Resources	Wetlands and water resources are found within the project area. All applicable permits (Section 404, Section 10, Floodplain, etc.) will be obtained prior to start of construction and all conditions contained within the permits will be complied with. Streams and wetlands will be avoided within the staging areas, and all wetlands and streams within the ROW will be bored or drilled under to avoid permanent impacts. The Missouri River will not be impacted as a horizontal bore will occur under the river. Significant impacts are not anticipated.	No direct or indirect impacts would result from this alternative.
Biological Resources	Fiber line is being installed in existing road ROW. U.S. Fish and Wildlife Service (USFWS), Nebraska Game and Parks Commission (NGPC), and Iowa Department of Natural Resources (DNR) have concurred the Project will have “no effect” on listed species.	No direct or indirect impacts would result from this alternative.
Historic and Cultural Resources	Cultural resources and sensitive areas are present within the project area. Significant impacts are not anticipated as these resources would be avoided or installation would be monitored during construction to prevent significant impacts.	No direct or indirect impacts would result from this alternative.
Aesthetic and Visual Resources	Storage of equipment at staging areas would cause temporary visual impacts during construction. Equipment would be removed when construction is completed. No significant impacts.	No direct or indirect impacts would result from this alternative.

Resource Areas	Proposed Action	No Action Alternative
Land Use	Construction impacts would be temporary and minor. All staging areas would be returned to their preconstruction condition. No significant impacts.	No direct or indirect impacts would result from this alternative.
Infrastructure	All fiber line would be installed in existing road ROW. The Project would be beneficial to the Winnebago Reservation and surrounding communities. No significant impacts.	No direct or indirect impacts would result from this alternative.
Socioeconomic Resources	Beneficial impacts to the surrounding communities would occur in the form of better communication, increased educational opportunities, economic development, and access to higher-quality health care.	Negative direct impacts would result from this alternative. Direct impacts include the lack of telehealth, education, and employment opportunities to the tribe.
Human Health and Safety	The project area has registered hazardous waste sites. For areas in proximity to identified sites, the Grantee and contractor will safeguard worker safety from potential contaminated areas. Only qualified workers would be permitted to operate heavy machinery and equipment. Impacts to this category are not significant.	No direct or indirect impacts would result from this alternative.
Cumulative Effects	Multiple projects are scheduled to be constructed within the project area. Timelines for these projects vary and are either currently underway, will begin within the timeline of this Project, or are outside the timeline for this Project. Impacts to this category are not significant.	No direct or indirect cumulative impacts would result from this alternative.

2.0 PURPOSE AND NEED

The purpose of the Project is to deploy a broadband infrastructure network to provide reliable and affordable high-speed internet.

The Winnebago Reservation includes a high percentage of residents and businesses without internet service either because of lack of infrastructure or high cost. Of the 886 households on the reservation 602 are unserved Native American households. There are also 44 unserved Native American tribal businesses (out of 46) and 19 unserved anchor institutions (out of 19). Those with internet service must contend with connection speeds much slower than the Federal Communications Commission's (FCC) current (2015) definition for broadband of 25 megabits per second (Mbps) download speeds and 3 Mbps upload speeds. A sample speed test survey conducted by the Winnebago Tribe of Nebraska in 2021 determined that speed averaged 15.12 Mbps for upload speeds and 6.74 Mbps for download speeds. Therefore, the service of the Winnebago Reservation is considered "unserved."

The 2020 U.S. Broadband Pricing Index reported the average monthly cost for internet access was $60. Winnebago Tribal households on average are paying in excess of $100 per month for service. Lack of available internet service or inadequate access at higher-than-average prices has limited opportunities for residents of the Winnebago Reservation to pursue educational enrichment, employment opportunities, economic mobility, and access to vital health care services.

By providing qualified broadband service to the Winnebago Reservation and in the adjacent communities of Emerson, Homer, and Wakefield, the Project is expected to facilitate economic development and commercial activity, create remote employment and entrepreneurial opportunities, and increase availability of remote learning and telehealth services.

3.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

This chapter includes a description of the proposed action and project alternatives and the justification for the alternatives selected for further study.

3.1 Introduction

Under the National Environmental Policy Act (NEPA), an environmental assessment (EA) must evaluate feasible action alternatives and a no action alternative, which serves as a baseline with which to compare the impacts of the proposed action and any other action alternatives. The Project proposes the installation of broadband infrastructure to provide beneficial high-speed internet access to the unserved Winnebago Reservation and adjacent communities in the project area. During the early planning and design phase of the project, various alternatives were considered and are briefly described below. Some alternatives were ultimately determined not to be reasonable and were eliminated from further discussion in this EA. The rationale for this determination is provided in Section 3.4.

3.2 Proposed Action

This section describes the project location, project components, ROW requirements, construction activities, and operation and maintenance requirements.

3.2.1 Project Location

The fiber-optic installation alignment is generally located on the Winnebago Tribe of Nebraska Reservation, which spans approximately 120,000 acres and is situated primarily in a rural area in the northern half of

Thurston County in northeast Nebraska, 20 miles south of Sioux City, Iowa, and 80 miles north of Omaha, Nebraska. U.S. highways 75 and 77 join in the east-central area of the reservation, near the community of Winnebago. A small portion of the reservation is located directly east of the Iowa-side of the Missouri River west of Interstate 29 in Woodbury County.

Portions of the fiber-optic alignment also extend to communities just outside of the reservation, including the northern portion of Emerson (the southern half of Emerson is within the reservation; Dakota, Dixon, and Thurston counties), Homer (Dakota County), and Wakefield (Dixon and Wayne counties). In addition, the fiber-optic alignment extends north to the Western Iowa Technical Community College in Sioux City, Iowa (Woodbury County).

The fiber-optic alignment includes two crossings under the Missouri River at approximately River Miles (RMs) 711.0 and 729.7 (USACE 2022). This portion of the project triggers the Section 408 permit.

Refer to Figure 1, Vicinity Map, for depiction of the project location and reservation boundary, and figures 2A through 2AC, Proposed Fiber Alignment, in Appendix B, which include a series of maps showing details of the proposed fiber routes, including topographic details.

3.2.2 Project Components

The proposed action involves the construction of a multi-conduit, underground Fiber to the Premises (FTTP) system capable of 200 Mbps download speeds and 40 Mbps upload speeds. The Project includes accessing backbone fiber, the construction of approximately 235 miles of middle- and last-mile fiber and interconnection, and development of robust back haul connections. The new fiber-optic cable would be buried within protective conduit along existing road ROW and under the Missouri River in the project area. Refer to figures 2A through 2AC in Appendix B for details on the proposed fiber route.

In total, the Project would provide qualified broadband service to approximately 600 unserved Native American households, 40 unserved Native American and/or tribal businesses, and 16 tribal anchor institutions. A tribal anchor institution is a communal entity that supports broadband services for vulnerable populations, including low-income individuals, unemployed individuals, and aged individuals. In addition, the Project includes a rate stabilization program designed to provide up to a maximum payment on broadband household monthly bills to alleviate the burden felt most heavily by those in poverty and to prevent disconnection of service.

3.2.2.1 Fiber-Optic Cable

The buried fiber-optic line installation, which consists of the telecommunications cable and its protective conduit, would be performed using plowing and trenching construction techniques along roadways, and a directional boring machine would be used to install line under waterway, road, and railroad crossings. Refer to Section 3.2.4.2 for details on cable installation methods.

3.2.2.2 Ancillary Facilities

To facilitate operation and maintenance of the FTTP system, ancillary equipment would be installed along the alignment including optical line terminals (OLT), vaults, handholes, pedestals, markers, and network interface devices (NID). Each are described below:

- **Optical Line Terminal (OLT):** Two OLTs would be installed, one in Winnebago and one in Emerson. OLTs are devices used to connect optical fiber and transfer signals. The OLTs would be housed within a cabinet structure that is approximately 36 inches long, 36 inches wide, and 48 inches high. The cabinet sits on a concrete pad that is 36 inches long, 36 inches wide, and 60 inches high. Electrical power for the OLTs would be provided by Nebraska Public Power District from existing aerial distribution lines located immediately adjacent to each site. Each structure would be temperature controlled and would include a backup natural gas or propane powered generator to maintain network connectivity in the event of power failure.
- **Vaults:** Approximately 24 underground fiber-optic vaults measuring 36 inches long by 36 inches wide by 60 inches high would be installed and serve as local distribution hubs for the project area. An equipment cabinet that is 36 inches long, 36 inches wide, and 48 inches high would be bolted to the top of each vault.
- **Handholes:** Approximately 355 underground handholes measuring 36 inches long by 36 inches wide by 48 inches or 60 inches high, depending on the type of connection point, would provide access to the conduit and fiber-optic cable for splicing and repairs.
- **Pedestals:** Approximately 1,583 pedestals would be installed and serve as the connection point for distribution and drop fiber. Pedestals include an 18-inch-square base that would be installed underground and a 36-inch-tall aboveground pedestal that provides access to cables.
- **Markers:** Approximately 1,600 36-inch-tall line markers would be installed between handholes at intervals of approximately 1,000 feet to identify cable locations and where fiber will change direction.
- **Network Interface Device (NID):** Approximately 2,500 NIDs will be installed at the customer premises. The NID is a small panel, typically placed outside a home or business that connects the in-home/business wiring to the internet provider’s distribution network.

The dimensions of each ancillary piece of equipment could change based on availability at the time of construction. Impacts will not change based on this change of size of equipment.

3.2.3 Right-of-Way Requirements

ROW permitting agreements outside and within the reservation are currently in progress, including with the Bureau of Indian Affairs (BIA). All required permits are expected to be processed and approved by June or July 2024. Where possible, the fiber line will follow BIA roads and appropriate permits will be obtained. Most of the proposed installations will occur on the Winnebago Reservation on land owned by the Winnebago Tribe of Nebraska. The south river crossing at RM 729.7 goes under the Winnebago Bend property owned by the United States Army Corps of Engineers (USACE). The remaining installations will occur along local/county roadways and state/federal highways. Encroachment permits and/or easements are required from each jurisdiction where fiber is proposed to be installed via ROW Access Requests.

3.2.4 Construction Activities

This section provides details on the project's construction activities, including the location of staging areas, details of fiber installation methods, cleanup and surface restoration activities, and anticipated construction equipment and schedule.

3.2.4.1 Staging Areas

Six staging areas have been identified for the Project to temporarily store equipment and materials. All staging areas are located on the Winnebago Reservation (Figure 3 in Appendix B). Temporary roads would be installed to provide access to each staging area. The six staging areas were reviewed and surveyed to determine impacts to resources. Resources will either be avoided, or the appropriate permits will be obtained.

To support boring under the Missouri River at RM 711.0, staging areas are located on either side of the river. The first staging area is an approximately 647-acre site located south of Link 17B and west of the Missouri River. Of the total area, only 330 acres will be used for the staging area. The second staging area is an approximately 238-acre site, of which 150 acres will be used, located west-southwest of the WinnaVegas Casino Resort. Both staging areas are part of larger irrigated parcels.

Four other staging areas for equipment and material storage are located on the southwestern corner of D Avenue and 17th Road (26.1-acre), just north of B Avenue directly west of U.S. Highway 75 (5.19 acres), north of East Beck Street 0.25 mile east of U.S. Highway 75 (3.6 acres), and south of Link 30 along Link 3 (4.86 acres).

3.2.4.2 Fiber-Optic Cable Installation Methods

Fiber would be installed by plowing, trenching, or directional boring construction methods as described below.

Plowed and Trenched Installation

Approximately 156 miles of the proposed installations would be performed using plowing or trenching construction techniques within existing road ROW. Plowed conduit would be installed using a track-type bulldozer equipped with a specialized single ripper that loosens the soil along the installation path. Conduit would be fed either from the plow bulldozer or from a separate truck-mounted reel through a plow chute attached to the ripper and laid directly at a nominal depth of approximately 36 to 48 inches, depending on permit requirements. A compaction machine would follow directly behind the plow bulldozer and restore the ground surface to its original contour. The installation path may be preripped by a second bulldozer, if necessary, to loosen the soil in areas where subsurface rock or other buried obstructions may be present. This second bulldozer may also, in some cases, be attached to the plow bulldozer to provide additional pulling power for the plowing operation. Ground disturbance associated with the plowed installation would be limited to an approximately 8-foot-wide corridor.

In areas that are too narrow for plowing equipment to be used and where directional boring is not required to avoid surface disturbance, trenching construction techniques would be used for the conduit installations. Typically, a backhoe would be used to dig the required trench, although a compact excavator may be used in areas that are exceedingly narrow. The nominal trench depth would be the same as for plowed installations, but the disturbance width would be less.

Directional Bore Installation

Approximately 78 miles of the proposed installations would be performed using directional boring construction techniques. Directional boring is a method used to install utility lines under waterways and roads and in other areas where the avoidance of surface disturbance is desirable (Exhibit 1). Directional boring machines are horizontal drilling rigs with a steerable drill bit. In general, each bore begins with the creation of a pilot hole (entry pit), through which the drill bit is guided by the operator as it progresses along the desired boring path toward the exit pit. After the pilot hole has been bored, conduit is attached to the end of the drill string, and the conduit is pulled back through the bore.

In addition to shorter road and railroad boring installations, the proposed action includes horizontal drilling underneath the Missouri River from Nebraska to Iowa at RM 711.0 (with a bore length of approximately 5,240 feet) and RM 729.7 (with a bore length of approximately 2,400 feet). For this installation, a drilling rig would be stationed at a fixed point, or entry pit, where the operator installs a piloted drilling bit while adding segments of drill rod at predetermined depths horizontally across the river. At the surface level, a locator assists the rig operator by locating the position and the depth of the piloted drilling bit as it moves away from the drilling rig. While drilling, the rig operator would continuously inject an inert clay-based fluid that lubricates and stabilizes the bore hole. This process would continue until the piloted drilling bit reaches the exit pit on the other side of the river. The piloted drilling bit would then be removed, and stages of larger reamers and drill rod would be added and pulled toward the rig operator to enlarge the hole in preparation for pipe installation. This method allows for the continuous monitoring of the bore hole and maintains a pathway until the pipe package is ready for installation. Once the hole is large enough for the determined diameter of pipe(s), the pipe package would be connected to the drilling rods and pulled across the river toward the drilling rig operator. The pipe package would then be secured at both the entry and exit pits, and the annular space around the pipe package would be filled/grouted if required or determined necessary and the ground surface restored to its original contour.

Exploratory drill borings were completed on July 26, November 3, and November 7, 2023, to determine the soil structure of the proposed drill holes. The drilling method used was a hollow-stem from 0 to 15 feet then a rotary drill to 100 feet (termination). This method was used to determine the stratigraphy of the soils to be certain that the borings under the river will hold. The general stratigraphy of the boring holes consisted of native sand and clay and imported clay fill material.

The exploratory drill boring conducted on November 3, 2023, in South Sioux City, Iowa was also used to determine if the area had archeological potential. Two cores were placed to ascertain the soil properties. See Exhibit 2 for the locations and depths of these bore sites. Core 1 was determined to have properties associated with a buried soil that has the potential for archeological deposits.

The boring depths for the directional boring will minimally encounter the buried soils in Core 1. See Exhibit 3 for the approximate depths of the directional boring. The buried soil with archeological potential is avoided and no further action is recommended.

Based on calculations from the exploratory drill borings, there is a potential for fracturing during the horizontal drilling process due to high pressures. To address this potential concern, one vertical boring using a 6-inch outer diameter core would be installed to reduce the pressures and prevent or minimize fracturing. This boring would be advanced to the depth of the horizontal boring (approximately 50 feet below ground surface) using a mud rotary drill rig (or similar). A casing or conduit would be temporarily installed in the boring to reduce the pressures in the horizontal boring. When complete, the boring would be properly abandoned. If needed, the vertical boring would be east of the railroad tracks and west of I7G Core 1 (Exhibit 4).

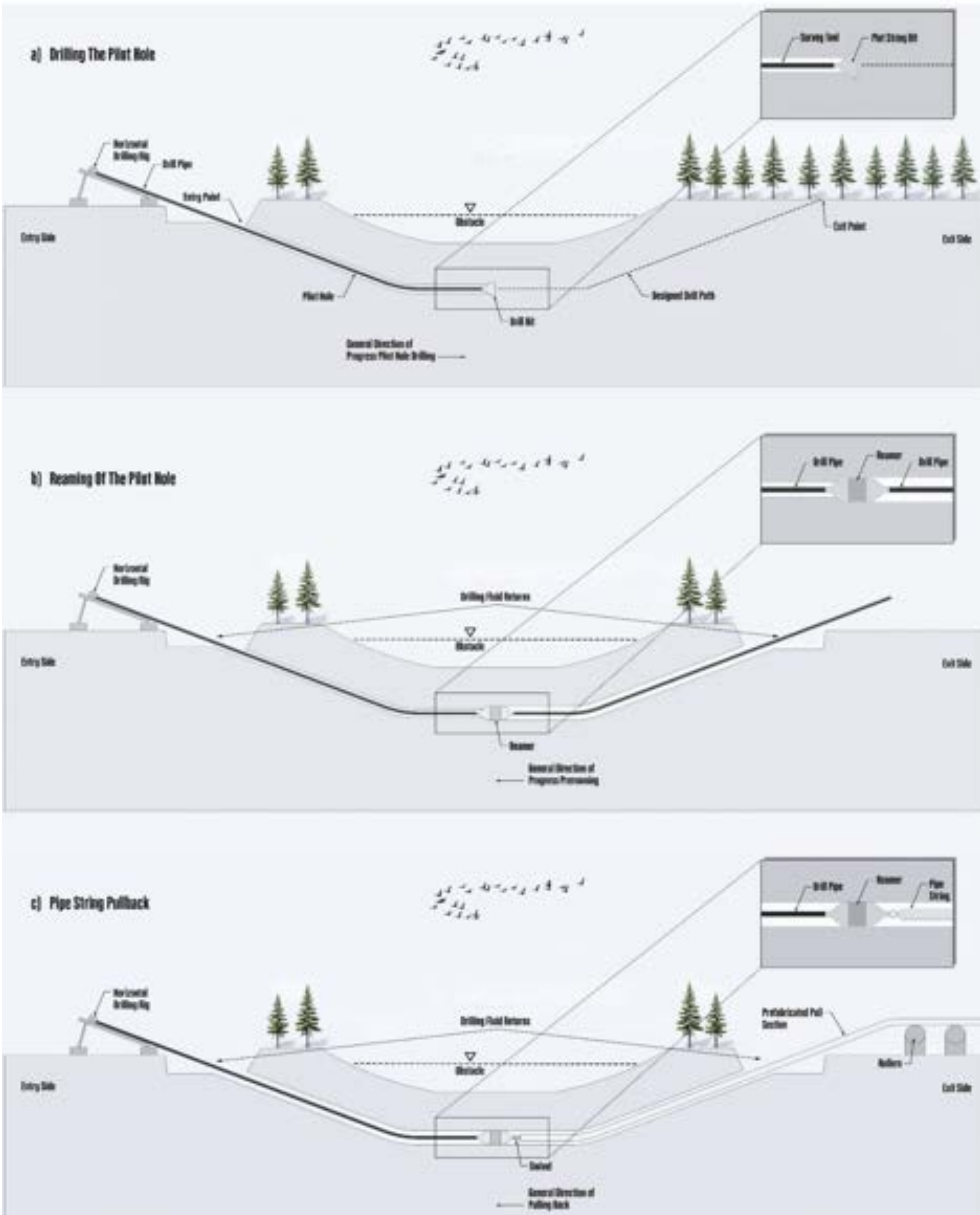

Exhibit 1. Example of a Directional Bore Beneath a Waterway

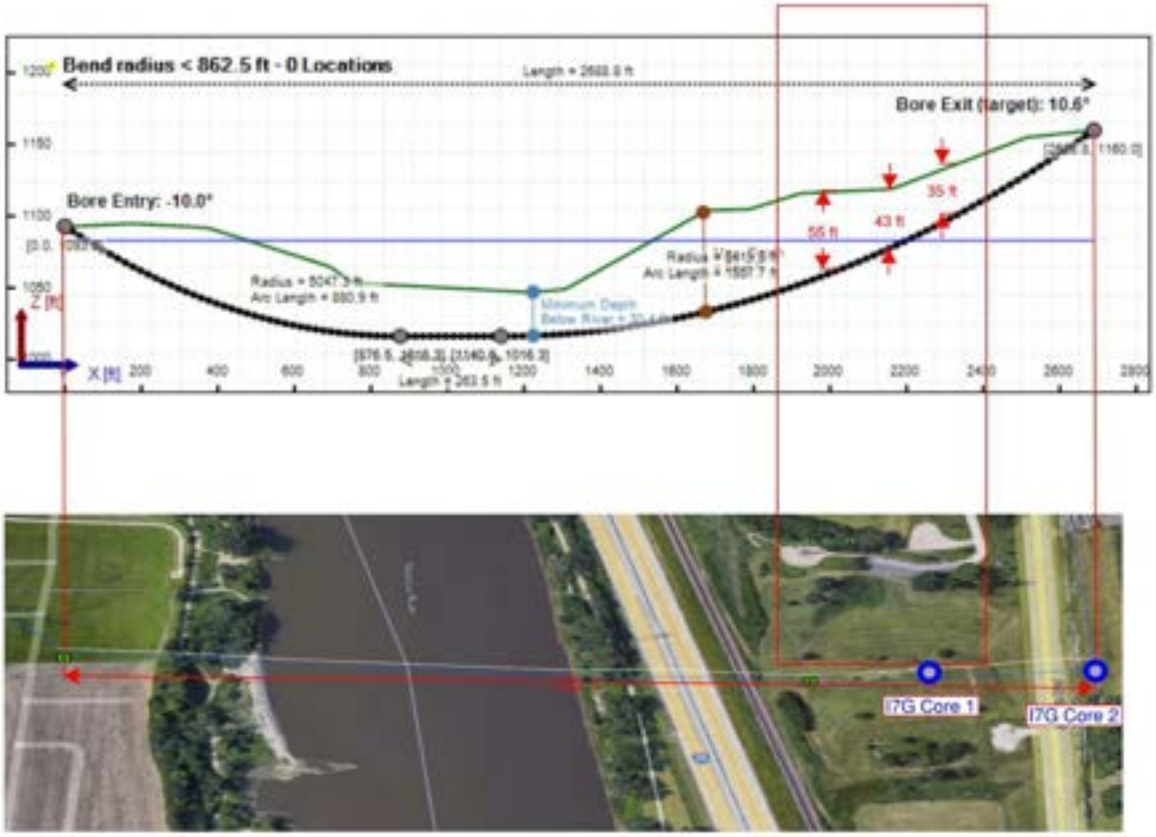

Exhibit 2. Locations and Depths of Exploratory Geotechnical Borings

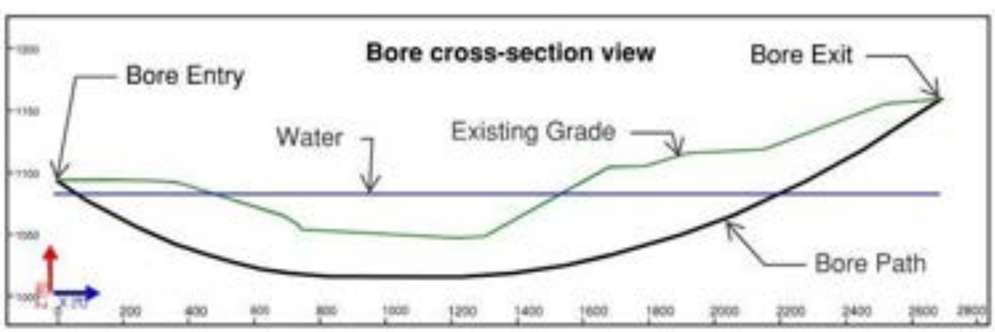

Exhibit 3. Depth of Directional Boring

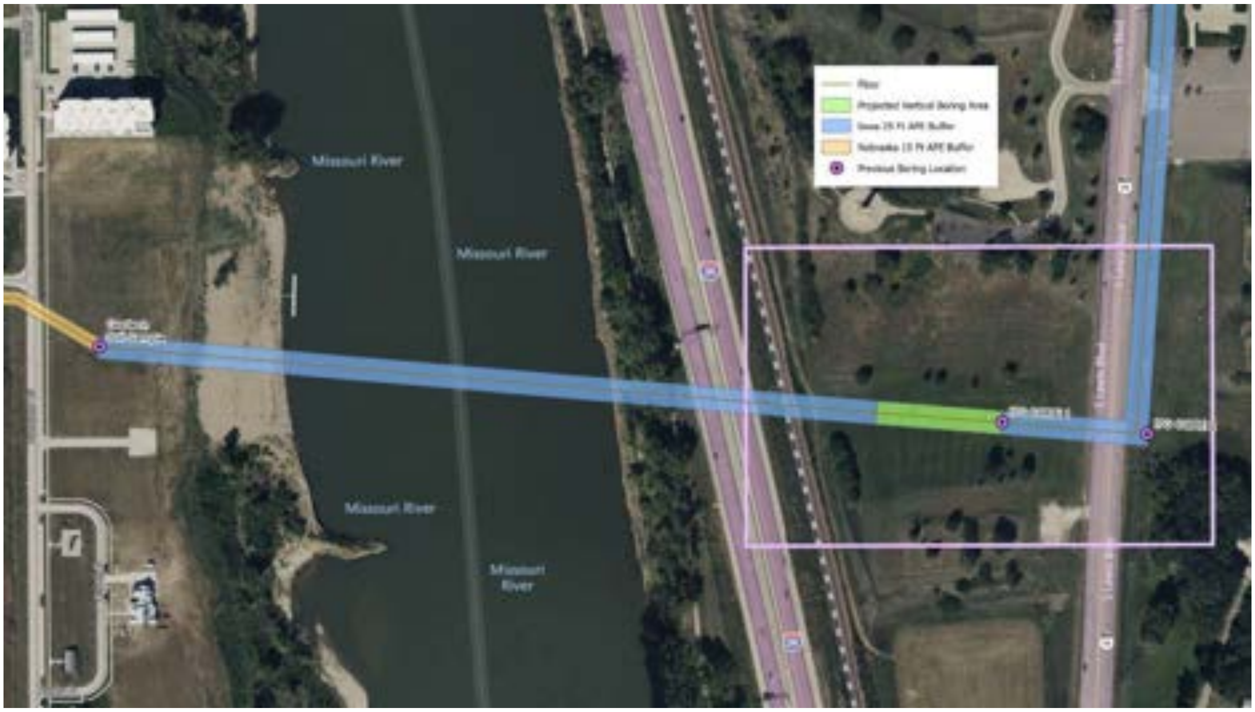

Exhibit 4. Location of Vertical Boring

3.2.4.3 Ancillary Facilities Installation

Excavation activities would be required to install vaults, handholes, pedestals, and markers. To the extent feasible, installations would occur in previously disturbed areas and ground disturbance would be limited to the minimum area necessary to complete the installation. Excavated soils that could not be reused on-site as backfill would be disposed of in accordance with local, state, and federal regulations.

3.2.4.4 Cleanup and Surface Restoration

Following the telecommunications line and ancillary facility installations, the contractor would promptly perform site cleanup and surface restoration. Cleanup would include removing all construction debris, and surface restoration would involve returning the surface contours of disturbed areas to their preconstruction condition. Waste would be disposed of in accordance with local, state, and federal requirements.

3.2.4.5 Construction Equipment

Construction equipment necessary to complete the installations is anticipated to consist of the following:

- D5-class bulldozers for the plowed installations
- Directional boring machines (Vermeer D20x22 S3 or equivalent)
- Trailer-mounted mud-sucker pumps for drilling mud evacuation and recovery
- Backhoes (Case 580x or equivalent)

- Compact excavator (Bobcat E26 or equivalent)
- Medium-duty (5 ton), spray-bar-equipped water truck for dust control
- Medium-duty (2.5 – 5.0 ton) flatbed truck for reel and underground vault delivery
- Trailer-mounted air compressors for conduit pigging and blowing the fiber-optic line
- Light-duty pickups (0.50 and 0.75 ton) for crew transport

3.2.4.6 Construction Schedule

Pending obtaining all necessary permits and approvals, construction would be implemented in seven phases (Figure 4 in Appendix B) and is anticipated to begin in August 2024 and conclude in October 2026.

3.2.4.7 Operation and Maintenance

Operation and maintenance activities associated with the new telecommunications network are expected to be minimal, because once installed, fiber-optic cable is essentially maintenance free. Occasional visits by the Winnebago Tribal communication carrier to inspect facilities and confirm operability or to conduct minor repairs would occur but would not involve ground disturbance.

3.3 No Action Alternative

The no action alternative represents a scenario under which the Project would not be implemented. This alternative assumes that the Winnebago Reservation and communities within the project area would remain unserved with regard to access to broadband services and that infrastructure would not be expanded.

Under the no action alternative, the existing environmental setting would be generally maintained. Changes to that setting that would result from construction, operation, and maintenance of the Project would not occur, and local communities and businesses would not realize the benefits of improved communication. Existing wireless infrastructure would remain in place, and internet service would generally continue to be provided as it is now which is unusable in its current state. No permits, encroachment permits, or easements would be granted for the installation of broadband infrastructure to serve the project area under the no action alternative.

No legal, regulatory, or technical feasibility issues were identified that would eliminate the no action alternative from consideration. However, this alternative would not meet any of the project objectives, purposes, or need. As a no-development alternative, the no action alternative would avoid all project-related impacts. It would cause no new impacts on the physical environment. Existing land uses would continue to affect environmental conditions as they are now.

3.4 Alternatives

Based on the proposed fiber path, the following four alternatives were considered during the EA process:

1. **Underground Cable Alternative (Proposed Action)** – Includes installation of underground cable along the entire route. Cable would be buried within existing road ROW and installed via boring under the Missouri River. Refer to Section 3.2 for details on the proposed action.

2. **Overhead Cable Alternative** – Includes installation of aerial cable on existing power poles and construction of new power poles along routes that lack overhead lines or replacement of existing poles requiring improvement/upgrade.

This alternative was eliminated from further study because of the high susceptibility of aerial cable and poles to damage caused by (1) extreme weather events typical of the region (e.g., high winds, low temperatures), (2) vandalism, and (3) pests and other wildlife, all of which could result in disruption of service. Aerial cable and poles also have less longevity and greater long-term maintenance costs than underground installations.

3. **Wireless Alternative** – Includes installation of a wireless network.

This alternative was eliminated from further study because of a lack of cellular providers and service in the project area. The project area is in a remote, rural area with hilly forested terrain that does not allow for sufficient signal to reach each dwelling requiring service. In addition, a wireless network is unlikely to be able to provide the same reliability, capacity, or speeds as those provided by a fiber-optic cable network.

4. **No Action Alternative** – No installation of broadband infrastructure would occur. The Winnebago Reservation and communities within the project area would remain unserved. Refer to Section 3.3 for details on the no action alternative.

Though all four alternatives were considered, the proposed action alternative is being proposed for comprehensive analysis and final design because it would have fewer infrastructure constraints, less environmental impact, lower maintenance cost, greater system longevity, and fulfill the purpose and need of the project. The no action alternative is carried forward as a baseline for comparison of impacts.

3.5 Alternatives Considered but Eliminated from Further Discussion

As discussed in Section 3.4, two alternatives were considered but eliminated from further study (overhead cable alternative and wireless alternative). The proposed action was determined to be the underground cable alternative.

4.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT

A screening process was used to determine which environmental resources are likely to be affected by the proposed action. Because the Project is specifically designed to produce certain environmental benefits and to avoid or mitigate others, some environmental resources require less discussion. In some cases, environmental resources may be dismissed from analysis if they are unlikely to be significantly affected by the proposed project. The remaining resources are analyzed further to assess the established baseline and likely impacts of the proposed action, and to determine what actions should be taken to mitigate adverse impacts.

4.1 Noise

The project area contains a mixture of rural agricultural, residential, commercial, and industrial properties. According to the Environmental Protection Agency (EPA), noise levels of 45 decibels are associated with indoor residential areas, including hospitals and schools (EPA 1974). Noise levels of 55 decibels are associated with outdoor areas where human activity can take place, including school yards and playgrounds. Noise levels of 70 decibels are a threshold for all areas to prevent hearing loss. The project area contains numerous indoor and outdoor areas that would be considered sensitive. This includes hospitals, schools, parks, single- and multifamily residences, among many others. The towns of Emerson, Winnebago, Wakefield, Thurston, and Homer do not have a noise ordinance in place. The Winnebago Tribe does not have a noise ordinance.

4.2 Air Quality

Air quality regulations in the U.S. are based on concerns that high concentrations of air pollutants can harm human health and adversely affect public welfare by damaging crops, vegetation, buildings, and other property. Pursuant to the Clean Air Act (CAA), the U.S. EPA has established National Ambient Air Quality Standards (NAAQS) for seven common air pollutants: carbon monoxide (CO); lead (Pb); nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM) for both PM_{10} and $PM_{2.5}$, and sulfur dioxide (SO_2). Compliance with the NAAQS means the ambient outdoor levels of these “criteria” air pollutants are safe for human health, the public welfare, and the environment (US EPA, 2023).

The EPA shares authority to enforce the NAAQS with individual states. In the state of Nebraska, the Nebraska Department of Environment and Energy is the state agency charged with monitoring air quality and demonstrating compliance with NAAQS. Since this project is within the Winnebago Reservation, the tribe has the option to adopt a Tribal Implementation Plan (TIP) to help maintain air quality standards; however, adopting a TIP is not required. If tribes choose not to adopt a TIP, the EPA will develop a Federal Implementation Plan (FIP). The EPA evaluates ambient monitoring data from states and agency monitors and derives criteria pollutant design values, which are statistics that describe the air quality status of a particular location relative to the level of the NAAQS. Areas where monitored ambient air concentrations or design values are within an applicable NAAQS are considered in *attainment*. Areas where monitored ambient air concentrations exceed the NAAQS are designated by the EPA as *nonattainment* areas. Lastly, areas that have historically violated the NAAQS, but have since instituted controls and programs that have successfully remedied these violations, are known as *maintenance* areas.

According to the EPA Green Book (2023), the Project is within an attainment area. This assessment also considers the potential emission of greenhouse gases (GHG) associated with the project, in accordance with Executive Order (EO) 13990.

4.3 Geology and Soils

The Major Land Resource Area (MLRA) of the Project is Loess Uplands (102C) and Iowa and Missouri Deep Loess Hills (107). Most of the Project is within the Loess Uplands. This area has dominant soils of endoaquolls, fluvaquents, haplustolls, udifluvents, and ustorthents. Most of this area is farmed with corn or soybeans. The Iowa and Missouri Deep Loess Hills soils consists of similar dominant soils.

The Nebraska State Highway Map (NDOT, 2018) depicts the region as Rolling Hills – hilly land with moderate-to-steep slopes and rounded ridge crests. This area is mostly glacial till that has been eroded and mantled by loess.

According to the Farmland Protection Policy Act (FPPA), the U.S. Department of Agriculture (USDA) has developed criteria under which the environmental impacts and the conversion of farmland to nonagricultural uses can be assessed. This process is used to analyze alternatives for the proposed development to make sure that consideration is given to the preservation of agricultural lands.

A web soil survey map from the USDA (USDA, 2018) of prime farmland classifications indicated the Project had prime or unique farmlands located in the project area. The web soil survey map can be seen in Appendix B, Figure 5-5AB. Prime farmland can be found within the Project, but the Project will be mostly within previously disturbed roadside ditches.

4.4 Water Resources

Wetlands are a specific type of land that meets specific regulatory criteria. The USACE *Wetland Delineation Manual* (1987) defines wetlands as areas that are inundated or saturated by surface or ground water at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Required criteria for an area to be defined as a wetland are (1) presence of hydrophytic vegetation, (2) presence of hydric soil types, and (3) hydrology or continuous saturation of the upper substrate.

The definition of WOTUS will be defined according to the most current guidance received from EPA and USACE Headquarters.

Olsson conducted a field investigation in July and August of 2023 to determine the presence and location of any WOTUS. See Figures 6-6AB in Appendix B for locations of mapped National Wetland Inventory (NWI) wetlands (USFWS, 2021) and National Hydrography Dataset (NHD) waterways (USGS, 2021). See Appendix C for the wetland delineation report.

4.4.1 Surface Water (i.e., Lakes and Rivers)

The Winnebago Reservation is within the Missouri Tributaries Basin and the Elkhorn Basin.

The Missouri Tributaries Basin is approximately 5,100 square miles, of which 3,800 square miles are within Nebraska, and located along the northeastern and eastern border of the state. This basin has many municipalities within it, the largest is Omaha with approximately 410,000 residents. The Elkhorn Basin is approximately 7,000 square miles and is within the northeastern portion of Nebraska. This basin's largest municipality that intersects it is Omaha; the next largest municipality is a portion of Fremont, Nebraska. (DNR, 2018)

The Missouri River, Logan Creek, and countless other tributaries, streams, ponds, and wetlands are located within the reservation. Portions of the Project occur near these waterbodies. See Figures 6-6AB.

4.4.2 Groundwater

According to the National Ground-Water Monitoring Network, the nearest groundwater monitoring station is within the town of Walthill, Nebraska, approximately 6 miles south of Winnebago, Nebraska. Water level below the surface at this station, as of October 20, 2022, was 17.28 feet. The local aquifer within the region is the Dakota Sandstone Aquifer. Another close groundwater monitoring station is located approximately 1.5 miles northeast of the town of Homer, Nebraska. There are three monitoring stations at this location with an average water level of 26.63 feet as of August 30, 2023.

4.4.3 Coastal Zone, Estuary, and Intertidal Areas

Coastal zones include the coastlines of the Atlantic and Pacific oceans, the Great Lakes, and the Gulf of Mexico. Estuary areas are areas where oceanic water is diluted with freshwater runoff from the land (i.e., river meets the sea). Intertidal areas are where the ocean meets the land between high and low tides. The Project is not within a coastal zone or an estuary or intertidal area.

4.4.4 Floodplains

EO 11988 requires federal agencies to avoid actions, to the extent practicable, located within floodplains that may affect floodplain values. According to the Federal Emergency Management Agency (FEMA, 2023), the eastern portion of the reservation is within the 100-year and 500-year floodplain associated with the Missouri River. Other portions of the reservation are within the 100-year and 500-year floodplain of Morgan Creek, North Omaha Creek, Cow Creek, Coon Creek, Middle Creek, and Logan Creek, among others (DNR, 2023). See Figures 7-7AB for locations of floodplains within the project.

4.4.5 Wild and Scenic Rivers

Nebraska has approximately 79,056 miles of river, of which 197 miles is designated as wild and scenic. Although 98 miles of the Missouri River is considered wild and scenic, that designated part is not within the project area. Therefore, no wild and scenic rivers are found within the project.

4.5 Biological Resources

The project area is within the Western Corn Belt Plains Level III ecoregion. More specifically, the project area falls within the Northeastern Nebraska Loess Hills, Nebraska/Kansas Loess Hills, and Missouri Alluvial Plain Level IV ecoregions. Common species found within these areas include eastern cottonwood (*Populus deltoides*), green ash (*Fraxinus pennsylvanica*), elm (*Ulmus sp.*), big bluestem (*Andropogon gerardii*), little bluestem (*Schizachyrium scoparium*), and switchgrass (*Panicum virgatum*), among other species. General land use of the area is predominantly cropland; the principal crops are corn, soybeans, and alfalfa.

4.5.1 Threatened and Endangered Species

The U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation system (IPaC) was used to identify listed and proposed threatened or endangered species and critical habitats that may be located within or close to the project area (Appendix D).

The Nebraska Game and Parks Commission (NGPC) Conservation and Environmental Review Tool (CERT) was used to determine which species, if any, are listed in Nebraska and within the project area. The Iowa Department of Natural Resources (DNR) Natural Areas Inventory (NAI) was used to determine which species, if any, are listed in Iowa and within the project area. These reports are included in Appendix D.

Because of the directional boring under the Missouri River, a separate letter was sent to determine if there were any impacts to fish species found within the project area. A “no effect” determination from USFWS, NGPC, and Iowa DNR was received, and no further action is needed. See Appendix D for correspondence.

Migratory birds and Bald eagles are found within the project area.

Table 4-1 shows the listed species that have the potential to be within the vicinity of the project area.

Table 4-1. Federal and State Threatened and Endangered Species.

Species	Status	Occurrence/Habitat Associations	Impact Evaluation
BIRDS			
Piping Plover *Charadrius melodus*	FT, ST	This species occurs most often on sparsely vegetated river sandbars. However, it can also be found on sand and gravel sandpits and along lake shore housing developments and reservoir shorelines.	Suitable habitat is unlikely present within the project area. Project would likely have “no effect” to the species.
INSECTS			
Monarch *Danaus plexippus*	CA	This species can be found in open fields and meadows with milkweed.	The monarch butterfly is a candidate species for protection under the Endangered Species Act but has not been listed or proposed for listing; therefore, no regulatory requirements are in place for the species.
FISHES			
Pallid Sturgeon *Scaphirhynchus albus*	FE, ST	This species can be found at the bottoms of large channels with high turbidity. It prefers habitat that has diverse water depths and velocities.	Suitable habitat is unlikely present within the project area. Project would likely have “no effect” to the species.

Species	Status	Occurrence/Habitat Associations	Impact Evaluation
Sturgeon Chub *Macrhybopsis gelida*	SE	Sturgeon chub can be found in fast, free-flowing rivers with high turbidity and low visibility.	Suitable habitat is unlikely present within the project area. Project would likely have “no effect” to the species.
Lake Sturgeon *Acipenser fulvescens*	ST	Lake sturgeon occupy the bottom habitats of large freshwater lakes and rivers. They spend most of their time in lakes or coastal systems but migrate to large rivers to lay eggs in rocky, swift-flowing parts of the river.	Suitable habitat is unlikely present within the project area. Project would likely have “no effect” to the species.
MAMMALS			
Northern Long-eared Bat *Myotis septentrionalis*	FT, ST	In the summer months, the species can be found in woodland areas. It roosts singly or in colonies under the bark of trees and in tree cavities. Males and nonreproductive females can also be found roosting in cooler locations such as mines.	Suitable habitat is likely present within the project area. The Project will not involve tree removal. The Project would likely have “no effect” to the species.
Tricolored Bat *Perimyotis subflavus*	PE	In the spring, summer, and fall, the species can be found among live and dead leaf clusters of deciduous trees. Males roost singly while females form maternity colonies. They have also been found within barns, bridges, culverts, and rarely, within caves.	Suitable habitat is likely present within the project area. The Project will not involve tree removal. Project would likely have “no effect” to the species.
CLAMS			
Scaleshell Mussel *Leptodea leptodon*	FE, SE	This species is most likely to be found in clear, fast-moving streams and rivers of good water quality with gravel or sandy bottoms. It can be found in riffles or fast-moving currents.	Suitable habitat is unlikely present within the project area. The Project would likely have “no effect” to the species.
PLANTS			
American Ginseng *Panax quinquefolius*	ST	This species can be found in the understory of eastern deciduous forest with rich, moist soils. It is most often found on hillsides and within wooded ravines.	It is unlikely this species will be present within the project area. Although suitable habitat may be found on the eastern edge of the project area, no activities will occur within this area.

STATUS KEY	
Federal	
FE	Federally listed as endangered
PE	Proposed listing as endangered
FT	Federally listed as threatened
CA	Candidate to be listed
State	
SE	State Endangered
ST	State Threatened

-

4.5.2 Critical or Threatened / Endangered Habitat

According to the USFWS IPaC report, there are no critical habitats within the project area.

4.5.3 Wetland Habitats

Olsson conducted a field investigation in July and August of 2023 to determine the presence and location of any WOTUS. This field effort focused on staging areas, horizontal bore locations, and office locations. A total of nine wetland features were identified within the study area. See Appendix C for the wetland delineation report.

4.6 Historic and Cultural Resources

Historic properties, as defined in the NHPA (54 U.S.C. § 300308), consist of any "prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on, the National Register of Historic Places, including artifacts, records, and material remains related to such a property or resource." Cultural resource(s) is a generic and overarching term used by Cultural Resource Management (CRM) professionals and can be used in reference to different site types, including archaeological, historical, and architectural sites, as well as properties of traditional, cultural, or religious importance that may or may not be eligible for inclusion on the National Register of Historic Places (NRHP).

Evaluation Criteria

To be eligible for inclusion on the NRHP, a site must usually be more than 50 years old and retain sufficient historic integrity to communicate significance based on one or more of the following seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association. Furthermore, the site must meet at least one of the following criteria:

- Associated with events that have made a significant contribution to the broad patterns of our history
- Associated with the lives of persons significant in our past
- Embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinctions
- Have yielded, or maybe likely to yield, information important in prehistory or history

In addition, cultural resources that hold traditional, cultural, or religious significance may be eligible for the NRHP if any of the National Register criterion mentioned above are met.

Beaver Creek Archaeology, Inc. (BCA) personnel conducted a literature search (Class I) and review with both the Nebraska and Iowa State Historic Preservation Officers (SHPOs) and with the Bureau of Indian Affairs Great Plains Region archaeologist. The literature searches indicated 52 projects overlapped with the project area.

The literature (files) searches revealed the site distribution is moderate to dense within 150 feet of the Project and contained 40 previously recorded cultural resource sites, and 31 Winnebago Tribal Historic Preservation Office (THPO)-sensitive and protected site locations (some of which overlap with previously documented cultural resources sites on file with the SHPO), seven historic Native American locations, and one notable location. Of the 40 previously documented sites, five have been listed on the NRHP. These results are included in Tables 4-2 and 4-3. Twenty-six of the aforementioned previously recorded cultural resource sites cross into the project area. These results are included in Table 5-1. Of those 26 previously documented cultural resource sites, four have been listed on the NRHP.

Additionally, a sensitive areas review was conducted and discussed with the Winnebago THPO for the portion of the Project located within the Winnebago Reservation. The need to know of this review and discussion was provided to BCA by Olsson. As part of the THPO sharing of this information, Olsson, BCA, and NTIA will not release the results or any other details of the THPO-sensitive areas, aside from listing the number of areas considered and subsequently avoided as part of the project design process, as these areas are privileged information and public disclosure could be harmful to these resources. Appendix E includes the letter received from the Winnebago THPO concurring the project is in compliance with Section 106 and avoidance of resources is the best route for the project.

Table 4-*2.* Previously Recorded Cultural Resources within 150 feet of the Project Area.

SITS No.	Affiliation	Description	NRHP Status
25TS49	Farm/Ranch	Cultural Material (Ineligible Determined by SHPO)	Ineligible
25TS48	Period Unknown	Cultural Material (Ineligible Determined by SHPO)	Ineligible
25TS6	Period Unknown	Burials	Unevaluated
25TS33	Period Unknown	Cultural Material (Ineligible Determined by SHPO)	Ineligible
25TS10	Period Unknown	Bison Bone, Shell, FCR, Pottery	Unevaluated
25TS11	Period Unknown	Projectile Points, Awl, Flakes, Bison Bone, Shell & Pottery, Bean and Squash Seeds	Unevaluated
25TS22	Education, Omaha, Winnebago	Cultural Material	Unevaluated
25TS2	Period Unknown	Depressions, 1 Pit, Small Burial	Unevaluated
DX09-001	**Historical**	**Swedish Evangelical Lutheran Salem Church (On the Register #83001088)**	**Eligible/Listed on the NRHP**
25DX50	Plains Woodland	CM Scatter: Chipped Stone Tools, Body Sherds	Eligible
DX04-003	**Historical**	**Emerson City Park (On the Register #100002165)**	**Eligible/Listed on the NRHP**
DK00-113	**Historical**	**Ben Bonderson Farm (On the Register #06000993)**	**Eligible/Listed on the NRHP**

SITS No.	Affiliation	Description	NRHP Status
25DK7	Plains Woodland, St. Helena Phase	Unknown	Unevaluated
25DK9	St. Helena Phase	Unknown	Unevaluated
25DK15	Period Unknown	Cultural Material	Unevaluated
25DK16	Period Unknown	Human Remains	Unevaluated
25DK14	St. Helena Phase	Cultural Material	Eligible
25DK2	Period Unknown	Burial Mounds/Cemetery	Eligible
25DK20	Period Unknown	Cultural Material	Unevaluated
25DK51	Euro-American	4 Structures, 2 Foundations, CM Scatter: Historic Artifacts, Faunal Remains	Ineligible
25DK8	Period Unknown	Cultural Material	Unevaluated
25DK501	Euro-American	Water Powered Flour Mill	Ineligible
25TS14	Omaha	Village	Unevaluated
25DK5	**Period Unknown**	**Ton-wa-ton-ga/Omaha Big Village (On the Register #73001058)**	**Eligible/Listed on the NRHP**
25TS9	Woodland	Cultural Material	Unevaluated
DK00-001	**Historical**	**Cornelius O'Connor House (On the Register #77000826)**	**Eligible/Listed on the NRHP**
25DK1	Period Unknown	Cultural Material	Unevaluated
25DK22	Period Unknown	Cultural Material	Eligible
25DK4	Period Unknown	Cultural Material	Unevaluated
25DK47	Period Unknown	Cultural Material	Eligible
25TS49	Farm/Ranch	Cultural Material (Ineligible Determined by SHPO)	Ineligible
25TS33	Period Unknown	Cultural Material (Ineligible Determined by SHPO)	Ineligible
25TS10	Period Unknown	Bison Bone, Shell, FCR, Pottery	Unevaluated
25TS11	Period Unknown	Projectile Points, Awl, Flakes, Bison Bone, Shell & Pottery, Bean and Squash Seeds	Unevaluated

SITS No.	Affiliation	Description	NRHP Status
25TS22	Education, Omaha, Winnebago	Cultural Material	Unevaluated
25TS2	Period Unknown	Depressions, 1 Pit, Small Burial	Unevaluated
DX09-001	Historical	Swedish Evangelical Lutheran Salem Church (On the Register #83001088)	Eligible/Listed on the NRHP
25DX50	Plains Woodland	CM Scatter: Chipped Stone Tools, Body Sherds	Eligible
DX04-003	Historical	Emerson City Park (On the Register #100002165)	Eligible/Listed on the NRHP
DK00-113	Historical	Ben Bonderson Farm (On the Register #06000993)	Eligible/Listed on the NRHP

SITS No. = Smithsonian Institution Trinomial System Number
Note: Bolded sites are listed on the NRHP.

Table 4-3. Iowa State Historic Preservation Office Historic Indian Locations (HILD) within 150 feet of the Project Area.

HILD	Description
7	Floyd's Bluff post, County Seat 1848-(13WD184)
1053	1854 Battle
10	Omaha Claim
956	Winnebago Tribe of Nebraska Reservation Property, WinneVagas Casino
957/958	Winnebago Tribe of Nebraska Property
1106	Lewis and Clark CampLewis and Clark Expedition 17-20 Aug 1804 Also, has a Notable Location Number: XX7906: Lewis and Clark camp
651	Omaha Tti-ttaga Ziga Village

The Iowa SHPO did not have any Notable Locations documented within 150 feet of the proposed project area.

4.7 Aesthetic and Visual Resources

The Winnebago Reservation and the surrounding area has many water resources, recreational areas, and parks within its boundary. These include, but are not limited to the following:

- Winnebago Bend Wildlife Area
- Big Bear Park
- Winnebago Veteran's Memorial Park
- Fiddler Creek MC (racecourse)

- Graves Park
- South Ravine Park
- Engineers Point
- Snyder-Winnebago Bends Area
- Land of Wellness
- Veteran’s Park
- Blue Park
- Winnebago Scouts
- Dog Park
- Horseshoe Pit
- Logan Creek Dredge
- Missouri River
- Middle Creek
- Cow Creek
- North Omaha Creek
- Omaha Creek
- Turtle Creek
- South Omaha Creek
- Morgan Creek
- South Logan Creek
- North Blackbird Creek

No national or state parks are located within the boundaries of the Winnebago Reservation. No state or scenic parks are mapped within the project area (NPS, 2023). NRHP-listed properties are discussed in Section 4.6.

4.8 Land Use

Land use within the project area is zoned as rural and urban. Uses include residential, commercial, industrial, and agricultural. The land use primarily within the project area is agricultural and grassed ROW. Most of the land within the project area is owned and leased by the Winnebago Tribal Council. A portion of the project is located on BIA lands or within BIA ROW. Another small portion of the project is located under the Winnebago Bend property owned by USACE.

4.9 Infrastructure

There is no current infrastructure that would support aboveground installation of fiber. All installations will be underground where no current fiber is installed. Traffic in most of the project area consists of travelers on rural roads with annual average daily traffic (AADT) counts ranging from 15 to 325 in 2022 (NDOT, 2023). There are two major highways on the eastern side of the reservation – U.S. Highway 77 and U.S. Highway 75. The intersection of these two highways has the largest AADT count of approximately 7,640 in 2020. Nebraska Highway 9 had an AADT in 2022 of 140 at the intersection with H Avenue.

No other forms of infrastructure are significant for the purpose of a fiber installation. The Winnebago Tribe of Nebraska (Grantee) will contact 811 (Call Before You Dig) prior to installing subsurface utilities.

4.10 Socioeconomic Resources

Under EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations, federal agencies must determine whether their programs, policies, or activities have disproportionately high and adverse human health or environmental effects on protected populations. According to the U.S. Census Bureau (2023, Thurston County has a population density of 17 people per square mile. County demographics consist of 58.5 percent American Indian, 36.9 percent White, 8.6 percent Hispanic or Latino, and 3.2 percent two or more races. The population is 50.1 percent female and 49.9 percent male. Most persons are between the ages of 18-65 (52 percent), with 35.6 percent between 5-18 years, and 12.4 percent 65 and older. In the area, 90.5 percent of the population that is aged 25 and older has a high school diploma or higher; of those, 18.9 percent have a bachelor’s degree or higher. English speakers equal 95 percent of the population and 5 percent of the population includes non-English languages as the primary language at home. The median household income is $56,223 with 19 percent of the population living in poverty. A total of 60.2 percent of properties are owner-occupied.

4.11 Human Health and Safety

The most significant concern of the Project is proximity to existing underground utilities. Grantee will contact 811 (Call Before You Dig) prior to installing subsurface utilities and only permit workers who are qualified by training or experience to operate heavy machinery and equipment. Occupational Health and Safety Administration (OSHA) standards will be followed regarding all activities.

The project area contains a total of four superfund sites (NDEE, 2023). All these sites are recorded as “active.” There are also 11 Resource Conservation Recovery Sites. These sites are recorded as active, inactive, or unknown. There are 33 intact underground storage tanks (USTs) within the project area and 36 leaking USTs. See Figure 8 in Appendix B for the locations of these sites.

5.0 ANALYSIS OF ENVIRONMENTAL IMPACTS

The level of NEPA analysis needed depends on the potential significance of the project’s impacts. The term “significance” as used in NEPA requires considerations of both context and intensity. Context means that the significance of an action must be analyzed in several contexts, such as society as a whole (human and national), the affected region, interests, and locality. Intensity refers to the severity of the impact, the cumulative effects, and the degree of controversy. Significance varies with the setting of the proposed action. Both short-term and long-term effects are relevant. Impacts that are routinely handled through the issuance of permits, consultations, modifications to design, or other agreements are not considered significant unless there are exceptional circumstances and/or a potential for generating controversy. Minimal discussion is provided within the following sections or Table 5-2 regarding areas of the affected environment where little to no consequence is anticipated regarding the proposed action.

5.1 Noise

The Proposed Action Alternative will have short-term direct impacts to ambient noise levels in the project area from the use of construction equipment (pickup trucks, boring equipment, etc.) that would occur during the fiber installation. Construction equipment noise levels can range from 70 to 95 decibels (USDOT, 2017). These impacts would be temporary and minor throughout most of the project area. The most affected area would be at the location of the noise-generating equipment. Mitigation methods include confirming workers follow OSHA regulations for worker protection, limiting hours of construction to occur during normal business hours, and avoiding work on the weekends, where applicable. Implementation of the Proposed Action would result in temporary, short-term impacts to ambient noise levels in areas immediately adjacent to construction activities which are considered minor. Since fiber installation would occur underground and no noise emanating equipment is proposed to be installed, no long-term impacts to the noise environment would occur.

The No Action Alternative would have no temporary or permanent impacts to noise levels.

5.2 Air Quality

Construction activities associated with the Proposed Action Alternative would generate particulate matter from soil disturbances and equipment (direct impacts). Air emissions from construction vehicles and equipment would be temporary and minor, resulting in negligible impacts. When equipment is not in use, best practice will be implemented such that equipment will be shut off and will not be allowed to run idle. Activities such as clearing for hand holes and trenching would temporarily generate dust emissions. To minimize these emissions during construction, dust suppression (water trucks) would be implemented along with seeding and stabilization activities in accordance with stormwater pollution prevention plan best management practices (BMPs). Post-construction, all areas would be revegetated to help reduce the dust. Implementation of the Proposed Action would result in temporary, short-term impacts to air quality during construction which are considered to be minor. Equipment to be installed does not generate emissions, therefore, no long-term impacts to air quality would occur.

The No Action Alternative would have no temporary or permanent impacts to air quality.

5.3 Geology and Soils

The Proposed Action Alternative would be installed in existing road ROW that is previously disturbed. Depth of construction is not anticipated to reach bedrock in these road ROWs and would be limited to 3 to 4 feet of soil. During construction, soil erosion and sedimentation would be avoided or minimized through BMPs and would be compliant with National Pollutant Discharge Elimination System (NPDES) permit requirements. All areas would be revegetated where necessary. Geologic and soil impacts from the Project are not considered to be significant.

The No Action Alternative would have no temporary or permanent impacts to geology and soils.

5.4 Water Resources

Impacts from the Proposed Action Alternative to water resources will be minimized and avoided. During construction, where soil erosion and sedimentation may take place, BMPs including silt fences may be utilized to prevent silt and soil deposition runoff in local waterways. A wetland delineation was completed in July and August of 2023 at all staging areas and bore locations. Wetlands were identified at some sites. A copy of the wetland delineation report is included in Appendix C. The wetland delineation report will be submitted with the Section 10 permit application. Coordination with USACE has been on-going and will continue throughout the permit application. Assuming that all identified water resources are jurisdictional, all water resources will be avoided within staging areas, and water resources within the ROW will be bored or drilled under to avoid permanent impacts. Because fiber will be installed below the channel grade/floodplain width and far enough below the thalweg of the river as to not cause river scour, there will be no change in floodplain conveyance capacity within the regulated floodplain. No changes in the surface grade or water surface elevation will occur as a part of this Project. All necessary permits will be obtained for any impacts to water resources. The necessary permits include, but are not limited to, CWA Section 404, Section 408 of Section 14 of the Rivers and Harbors Act (RHA) of 1899, Section 10 of the RHA, floodplain permits, and any other needed permits.

The No Action Alternative would have no temporary or permanent impacts to water resources.

5.5 Biological Resources

Consultation for critical habitat with USFWS and appropriate state agencies has occurred. Based on coordination efforts with the USFWS Nebraska office, the NTIA made a no effect determination to all federally listed species in the project's action area. Coordination with NGPC was completed through its CERT online tool and conservation measures for the northern long-eared bat will be implemented. The Iowa DNR responded on September 14, 2023, with no site-specific records found within the project area. No suitable habitat for listed species was identified within the existing road ROW or within staging areas. The Project does not involve tree removal. If this were to change, a survey for migratory birds and bat species will be conducted by a qualified biologist. See Appendix D for coordination with agencies. After consultation with USFWS, NGPC, and Iowa DNR, the Proposed Action Alternative would have no effect on listed threatened and endangered species.

The No Action Alternative would have no temporary or permanent impacts to biological resources.

5.6 Historic and Cultural Resources

Cultural resources and historic properties are present within the project area (Table 5-1), and a Class III cultural survey was conducted before the issuance of the FONSI. Consultation with the Winnebago THPO and Omaha THPO has been conducted and will continue throughout project construction. NTIA submitted a Section 106 Finding of No Historic Properties Affected to both the Winnebago Tribe of Nebraska and Omaha Tribe of Nebraska on February 21, 2024. Winnebago THPO and Omaha THPO concurred with the Section 106 finding of No Historic Properties Affected, with correspondence included in Appendix E. The Winnebago and Omaha THPOs are participating in field investigations. An Unanticipated Discovery plan has been developed if any resources are found during construction.

NTIA utilized their internal Tower Construction Notification System (TCNS) to notify tribes claiming ancestral ties to the area to meet federal agency requirements for government-to-government consultation. This notification was uploaded to TCNS on February 14, 2024, with a 30-day response period. Six tribes responded within the 30-day period. Three tribes responded after the 30-day response period. Copies of the responses are included in Appendix E. Tribes that have an interest in the project and would like to be kept informed include Flandreau Santee Sioux Tribe and Spirit Lake Nation. All tribes that responded have asked to be informed if archaeological remains or resources are discovered during construction.

Coordination with Nebraska SHPO has occurred, and NTIA submitted a Section 106 Finding of No Historic Properties Affected on February 21, 2024. Nebraska SHPO concurred the determination of No Adverse Effect to Historic Properties is appropriate as long as the following conditions are met:

1. Proposed project construction will remain within existing ground disturbances when working within or near the documented NRHP listed, eligible, or unevaluated sites.
2. Archaeological and tribal monitoring is required when construction is occurring within and near to each of the sites identified in Table 5-1 below.

Coordination with Iowa SHPO has also occurred, and Iowa SHPO concurred with the No Historic Properties Affected – No Effect determination for the undertaking within Woodbury County, Iowa. Further coordination was conducted regarding the vertical drill pressure relief boring that may be required for the horizontal drill boring. Iowa SHPO further concurred with No Historic Properties Affected – No Effect and archeological resources are unlikely to be affected by this activity. See Appendix E for documentation of consultation with Nebraska and Iowa SHPO.

No direct effects are anticipated to occur to NRHP-listed structure sites because there will not be any modifications to the structures, and fiber line will not be connected. Furthermore, no changes to the eligible structure are being conducted as part of this project.

Table 5-1. Previously Recorded Cultural Resources within the Project Area.

SITS No.	Affiliation	Description	NRHP Recommendation/NRHP Status
25DK1	Period Unknown	Cultural Material	Unevaluated
25DK14	St. Helena Phase	Cultural Material	Eligible
25DK15	Period Unknown	Cultural Material	Unevaluated
25DK16	Period Unknown	Human Remains	Unevaluated
25DK2	Period Unknown	Burial Mounds/Cemetery	Eligible
25DK22	Period Unknown	Cultural Material	Eligible
25DK4	Period Unknown	Cultural Material	Unevaluated
25DK5	**Period Unknown**	**Ton-wa-ton-ga/Omaha Big Village (On the Register #73001058)**	**Eligible/Listed on the NRHP**

SITS No.	Affiliation	Description	NRHP Recommendation/NRHP Status
25DK501	Euro-American	Water Powered Flour Mill	Ineligible
25DK51	Euro-American	4 Structures, 2 Foundations, CM Scatter: Historic Artifacts, Faunal Remains	Ineligible
25DK7	Plains Woodland, St. Helena Phase	Unknown	Unevaluated
25DK8	Period Unknown	Cultural Material	Unevaluated
25DK9	St. Helena Phase	Unknown	Unevaluated
25TS10	Period Unknown	Bison Bone, Shell, FCR, Pottery	Unevaluated
25TS11	Period Unknown	Projectile Points, Awl, Flakes, Bison Bone, Shell & Pottery, Bean and Squash Seeds	Unevaluated
25TS14	Omaha	Village	Unevaluated
25TS2	Period Unknown	Depressions, 1 Pit, Small Burial	Unevaluated
25TS22	Education, Omaha, Winnebago	Cultural Material	Unevaluated
25TS33	Period Unknown	Cultural Material (Ineligible Determined by SHPO)	Ineligible
25TS48	Period Unknown	Cultural Material (Ineligible Determined by SHPO)	Ineligible
25TS49	Farm/Ranch	Cultural Material (Ineligible Determined by SHPO)	Ineligible
25TS6	Period Unknown	Burials	Unevaluated
25TS9	Woodland	Cultural Material	Unevaluated
DK00-001	**Historical**	**Cornelius O'Connor House (On the Register #77000826)**	**Eligible/Listed on the NRHP**
DK00-113	**Historical**	**Ben Bonderson Farm (On the Register #06000993)**	**Eligible/Listed on the NRHP**
DX09-001	**Historical**	**Swedish Evangelical Lutheran Salem Church (On the Register #83001088)**	**Eligible/Listed on the NRHP**

SITS No. = Smithsonian Institution Trinomial System Number
Note: Bolded sites are listed on the NRHP.

The No Action alternative would have no temporary or permanent impacts to historic or cultural resources.

5.7 Aesthetic and Visual Resources

Aesthetic and visual resources do exist within the project area; the Proposed Action Alternative consists of installing fiber underground within existing road ROW. Temporary impacts around staging areas will occur to these resources but will be temporary. After construction, equipment and materials will be removed from staging areas and resources will return to preconstruction conditions. The above-ground components are small in size and will not significantly impact these resources. Based on the proposed design measures of the fiber installation, the Proposed Action will not result in significant impacts to aesthetic and visual resources.

The No Action Alternative would have no temporary or permanent impacts to aesthetic and visual resources.

5.8 Land Use

The project area mainly consists of rural land use. This includes agricultural, pastureland, or not densely populated areas. The Proposed Action Alternative is anticipated to have a beneficial impact on the population of the Winnebago Reservation. The fiber would be installed within existing ROW and will not change the designation of land use. Staging areas will be temporarily affected. The portion of the project that is located near the Winnebago Bend property will not be impacted or disturbed by the horizontal boring occurring underneath the Missouri River. The depth of the bore will be 30 feet below the flowline of the Missouri River and the exit point is outside the boundary of the Winnebago Bend property. The Natural Resources Conservation Services concurred on September 21, 2023, that no permanent or irreversible impacts will occur to farmland. See Appendix C for their concurrence. The Proposed Action will result in no significant impacts to land use. Agreements from the BIA Great Plains Region are in in progress and will be in place prior to fiber installation for BIA-owned ROW or lands.

The No Action Alternative would have no temporary or permanent impacts to land use.

5.9 Infrastructure

The Proposed Action Alternative includes installing fiber and other necessary facilities within existing road ROW. These areas will not be altered outside of small disturbances during the installation of the fiber and will not result in impacts to traffic during construction. The staging area on the east side of the Missouri River can be accessed via the bridge crossings at Interstate 129 in Sioux City, Nebraska or United States Highway-175 in Decatur, Nebraska. The Proposed Action has an overall beneficial impact to the residents of the Winnebago Reservation who lack reliable broadband infrastructure. To guarantee minimal conflict, the Grantee and contractor will call 811 before digging to identify buried utilities. Temporary staging areas will be returned to preconstruction states when installation is completed. The Proposed Action will result in no significant impacts, directly or indirectly.

The No Action Alternative would have no temporary or permanent impacts to infrastructure.

5.10 Socioeconomic Resources

The Proposed Action Alternative is anticipated to have a positive impact on the Winnebago Reservation and surrounding communities, who have previously lacked access or affordable broadband. The Proposed Action Alternative will not result in disproportionately high and adverse effects to Environmental Justice (EJ) communities.

The No Action Alternative would have significant impacts to the residents of the Winnebago Reservation. These residents would continue to lack reliable, high-speed broadband infrastructure.

5.11 Human Health and Safety

The Proposed Action Alternative is anticipated to benefit Tribal health by providing access to internet based medical resources such as telemedicine in the future. The project area contains many active and inactive hazardous waste sites and USTs. These sites do not pose a significant risk to the Proposed Action because most of the Project will occur within already disturbed road ROW. For work areas near identified sites, the Grantee and contractor will make sure of worker safety from potential contaminated areas. Only qualified workers will be permitted to operate heavy machinery and equipment. A Soil and Groundwater Management Plan will be developed and adhered to in areas near hazardous sites. The Proposed Action will not have significant impacts to human health and safety.

The No Action Alternative would have no temporary or permanent impacts to human health and safety.

5.12 Cumulative Impacts

Cumulative impacts take into consideration foreseeable future actions that will occur within the project vicinity. The Winnebago Tribe of Nebraska has a planning document that was reviewed for such actions. Multiple major construction projects will be occurring around the project area, but the schedule of some is unknown.

Multiple transportation projects have also been approved, but a specific schedule is unknown for when these will be completed. These transportation projects are being completed by the Nebraska Department of Transportation (NDOT) and is anticipated to begin between 2025 and 2029.

Pender – Emerson is a highway 3R (resurfacing, restoration, and rehabilitation) NDOT project occurring on Nebraska Highway 9 that intersects the Project on the western side. The project program year is 2024.

Spur 87A Thurston Spur is tied to the Pender – Emerson project to begin in 2024.

Additionally, in Emerson is a highway milling and resurfacing NDOT project occurring on Highway 9 through Emerson within the Project on the western side. The project program year is 2025-2029.

Macy – Winnebago is a highway 3R NDOT project occurring on Nebraska Highway 75 that extends south from Winnebago within the Project on the eastern side. The project program year is 2025-2029.

Wakefield North & South is a highway milling and resurfacing project occurring on Nebraska Highway 35 (Oak Street) through Wakefield within the Project on the western side. The project program year is 2025-2029.

The Winnebago Tribe is currently building a new daycare facility and emergency services building on U.S. Highway 75, north of Winnebago. Both of these projects should be completed within 18 months.

Near the previously mentioned daycare facility and emergency services buildings, a roundabout and walking trail are scheduled for construction within 12 months and for completion within 24 months.

The Winnebago Tribe is also planning to construct a Boys and Girls Club that is scheduled to begin within 9 months and be completed within 24 months.

In regard to the Proposed Action and other proposed projects within the project vicinity, it is anticipated that the execution of the Proposed Action will not significantly affect the cumulative impacts of other proposed projects in the area.

The Proposed Action Alternative is consistent with goals to further develop the area and provide reliable broadband infrastructure. Additionally, the construction needed to install this fiber line would be minimal and would be coordinated with other planned construction projects. No detours or closures of road are needed for the Proposed action. No significant impacts will result from the Proposed Action.

The No Action Alternative would have no temporary or permanent impacts to cumulative impacts.

Table 5-2. Comparison of the Potential Environmental Impacts by Alternative.

Alternative	Potential Impacts
Noise	
Proposed Action	Impacts would be low-to-moderate during construction activities, to ambient noise levels in areas immediately adjacent to the activities. Fiber and ancillary facilities would be installed underground and no noise emanating equipment is proposed, no long-term impacts would occur.
No Action Alternative	No transmission structures or facilities would be constructed, no impacts would occur.
Air Quality	
Proposed Action	Impacts would be low-to-moderate during construction activities. Air emission from construction vehicles and equipment would be temporary and minor. Activities such as clearing would temporarily generate dust emissions. Dust suppression techniques will be utilized to minimize emissions. Temporary, short-term impacts during construction will be minor. Equipment being installed does not generate emissions; no long-term impacts would occur.
No Action Alternative	No transmission structures or facilities would be constructed, no impacts would occur.

Alternative	Potential Impacts
Geology and Soils	
Proposed Action	Impacts would be low-to-moderate during transmission structure work including burying guy wire anchors; reconstruction or improvement of roads; compaction in areas used as staging areas and pulling/tensioning sites; or potential contamination from wood-pole preservative or accidental equipment spills.
No Action Alternative	Because no transmission structures would be constructed, there would be no impacts. However, to keep the existing infrastructure operating, emergency repairs would be needed that would cause low impacts that would be spread out over time as needed. Emergency repairs during wet seasons could increase risk of erosion and soil compaction.
Water Resources and Floodplains	
Proposed Action	Water resources are found within the project area. With the assumption that all identified water resources are jurisdictional, all water resources will be avoided within staging areas, and water resources within the ROW will be bored or drilled under to avoid permanent impacts. Coordination with the U.S. Army Corps of Engineers (USACE) is ongoing, and all appropriate permits will be acquired prior to the start of construction.
No Action Alternative	No ground disturbance would occur; no impacts.
Wetlands	
Proposed Action	A wetland delineation was completed in July and August of 2023. With the assumption that all identified water resources are jurisdictional, all water resources will be avoided within staging areas, and water resources within the ROW will be bored or drilled under to avoid permanent impacts. All appropriate permits will be acquired prior to the start of construction.
No Action Alternative	No ground disturbance would occur; no impacts.
Vegetation	
Proposed Action	Impacts would be temporary during installation of the fiber line. At staging areas, vegetation is row-crop or pastureland and would be reseeded to preconstruction conditions. Road ditch ROW would also be reseeded to preconstruction conditions.
No Action Alternative	No ground disturbance would occur; no impacts.
Wildlife	
Proposed Action	Nebraska Game and Parks Commission (NGPC), and the Iowa Department of Natural Resources (DNR) have concurred that the Project has “no effect” on listed species. No tree removal is expected to occur, but if this were to change, a survey would be completed by a qualified biologist. The project was coordinated with the USFWS Ecological Services office. NTIA made a determination of no effect to listed ESA species.
No Action Alternative	No ground disturbance would occur; no impacts.
Cultural Resources	
Proposed Action	Cultural resources and sensitive areas are present within the project area. Significant impacts are not anticipated as these resources will be avoided. Consultation and coordination with the Winnebago and Omaha THPOs will be on-going throughout project construction.

Alternative	Potential Impacts
No Action Alternative	No ground disturbance would occur; no impacts.
Aesthetic and Visual Resources	
Proposed Action	Fiber line is being installed in road ROW; no impacts will occur to resources. Resources around staging areas will be affected temporarily. Equipment will be removed once construction is completed.
No Action Alternative	No ground disturbance would occur; no impacts.
Land Use	
Proposed Action	The fiber line is being installed in existing road ROW. Staging areas will be temporarily affected during construction but will return to a preconstruction state when completed.
No Action Alternative	No ground disturbance would occur; no impacts.
Infrastructure	
Proposed Action	The fiber line is being installed in existing road ROW. Staging areas will be temporarily affected during construction but will return to a preconstruction state when completed
No Action Alternative	No ground disturbance would occur; no impacts.
Socioeconomic Resources	
Proposed Action	The action would have a significant beneficial impact to the surrounding communities by bringing high-speed and reliable internet. No disproportionately high and adverse effects will occur to EJ communities. Short-term impacts from construction equipment will occur but will not be significant.
No Action Alternative	The Winnebago Reservation and surrounding communities would continue to lack access to affordable, reliable, high-speed internet. Significant impacts would occur.
Human Health and Safety	
Proposed Action	The project area has registered hazardous waste and UST sites. For areas in proximity to identified sites, the Grantee and contractor will make certain workers are safe from potential contaminated areas. Only qualified workers will be permitted to operate heavy machinery and equipment. Impacts to this category are not significant.
No Action Alternative	No ground disturbance would occur; no impacts.
Cumulative Impacts	
Proposed Action	Multiple projects will be occurring concurrently with fiber installation. Significant beneficial impacts to the surrounding community will help further promote growth.
No Action Alternative	No ground disturbance would occur; no impacts.

6.0 APPLICABLE ENVIRONMENTAL PERMITS AND REGULATORY REQUIREMENTS

The following Special Requirements shall be implemented as part of the proposed action to retain a finding of no significant impacts:

- Prior to construction, the Winnebago Tribe will obtain a Section 10 and Nationwide Permit (NWP) 57 for directional borings under the Missouri River and all WOTUS impacts, respectively.
- The Contractor will adhere to the Unanticipated Discovery Plan during construction. The contractor will stop work if archeological materials or human remains are discovered and follow the provisions of the plan.
- Development and adherence to a Soil and Groundwater Management Plan in the areas of the site mapped in close proximity to hazardous waste sites/UST facilities.
- Prior to construction, the Winnebago Tribe will obtain a NPDES permit for construction greater than one acre and adhere to erosion and sedimentation control measures as determined applicable under the permit during construction.
- During construction, the Contractor will limit construction activities to normal business hours, Monday through Friday. Work will be avoided on weekends, to the extent possible.
- The Contractor will use dust suppression techniques to reduce fugitive dust emissions during construction.
- The Contractor will screen the project location for existing buried utilities by calling 811 and permit only workers qualified by training or experience to operate heavy machinery and equipment.

Table 6. Potential Applicable Statutory, Regulatory, and Other Requirements.

Potentially Applicable Requirement	Relevant Project Information
All Resources	
National Environmental Policy Act (NEPA) of 1969 42 U.S.C. § 4321 et seq.	NEPA Environmental Assessment (EA) and associated components are currently underway.
Fixing America's Surface Transportation Act (FAST Act) Title 41 (42 U.S.C. § 4370m et seq.)	The Project received coverage under the FAST Act.
Vegetation, Wildlife, and Fish	
Endangered Species Act (ESA) of 1973 16 U.S.C. § 1531 et seq.	The Project as currently proposed will have "no effect" on listed threatened or endangered species. Coordination with U.S. Fish and Wildlife Service (USFWS), Nebraska Game and Parks Commission (NGPC), and the Iowa Department of Natural Resources (DNR) has occurred.
Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) of 1976 16 U.S.C. 1801 et seq.	The Project as currently proposed will have no effect on fisheries.

Potentially Applicable Requirement	Relevant Project Information
Bald Eagle and Golden Eagle Protection Act (Eagle Act) of 1940 16 U.S.C. § 668-668d	The Project as currently proposed will have no effect on bald or golden eagles.
Migratory Bird Treaty Act (MBTA) of 1918 16 U.S.C. § 703-712 Responsibilities to Federal Agencies to Protect Migratory Birds Executive Order 13186	The Project as currently proposed will have no effect on migratory birds. If tree removal is to occur, a survey will be completed by a qualified biologist.
Fish and Wildlife Conservation Act 16 U.S.C. § 2901 et seq. Fish and Wildlife Coordination Act 16 U.S.C. § 661 et seq.	The Project as currently proposed will have “no effect” on listed threatened or endangered species. Coordination with USFWS, NGPC, and Iowa DNR has occurred.
Farmland Protection Policy Act (FPPA) 7 U.S.C § 4201-4209	The Project as currently proposed will have minimal effect on prime farmland as most of the Project will take place in previously disturbed roadside ditches.
Waters, Wetlands, and Floodplain Protection	
Clean Water Act (CWA) 33 U.S.C. § 1251 et seq. Floodplain/Wetlands Environmental Review Requirements 10 CFR 1022.12 Section 14 of the Rivers and Harbors Act (RHA) of 1899 33 U.S.C. § 408 Section 10 of the Rivers and Harbors Act (RHA) of 1899 33 U.S.C. § 403 Floodplain Management Executive Order 11988 Protection of Wetlands Executive Order 11990	A wetland delineation was completed in July and August of 2023. Coordination with the U.S. Army Corps of Engineers (USACE) is underway. This Project will be permitted under a Nationwide Permit (NWP) 57. A Section 10 permit will also be issued for the work being completed under the Missouri River. The wetland delineation report will be submitted with the Section 10 permit application. Applicable permits will be obtained prior to construction.

Potentially Applicable Requirement	Relevant Project Information
Coastal Zone Management Act (CZMA) 16 U.S.C. § 1451 et seq.	The Project is not located in a coastal zone that requires coordination.
Air Quality and Greenhouse Gases	
The Clean Air Act, as revised in 1990 42 U.S.C. § 4701	The Project is not anticipated to require air permits. To mitigate for fugitive dust during construction, dust suppression techniques will be used.
Final Mandatory Reporting of Greenhouse Gases Rule 40 CFR 98 Federal Leadership in Environmental, Energy, and Economic Performance Executive Order 13514 Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis Executive Order 13990	The Project is not anticipated to require air permits. To mitigate for fugitive dust during construction, dust suppression techniques will be used.
Cultural and Historic Resources	
Antiquities Act of 1906 16 U.S.C. § 431-433 Historic Sites Act of 1935 16 U.S.C. § 461-467 National Historic Preservation Act (NHPA), as amended, inclusive of Section 106 54 U.S.C. § 306108 et seq. Archaeological Data Preservation Act of 1974 16 U.S.C. § 469 – 469-1 Archaeological Resources Protection Act of 1979, as amended 16 U.S.C. § 469 a-c Native American Graves Protection and Repatriation Act 25 U.S.C. § 3001 et seq.	A Class I archaeological survey has been conducted. Any sensitive areas found will be avoided during construction. If any materials or remains are found during construction, the contractor will stop work and notify the appropriate agencies and tribes. A Class III survey has been completed and the results shared with NTIA, SHPOs, and THPOs

Potentially Applicable Requirement	Relevant Project Information
Indian Sacred Sites Executive Order 13007 American Indian Religious Freedom Act of 1978 42 U.S.C. § 1996	
Noise, Public Health, and Safety	
Noise Control Act of 1972 42 U.S.C. § 4901 et seq.	Construction work will be performed during normal business hours to reduce construction noise. These hours will be determined based on ordinances per the specific village, city, or urban area.
Spill Prevention Control and Countermeasures Rule 40 CFR 112 Comprehensive Environmental Response, Compensation, and Liability Act 42 U.S.C. § 9601 et seq. Resource Conservation and Recovery Act 42 U.S.C. § 6901 et seq. The Toxic Substances Control Act 15 U.S.C. 2601 et seq.	The Grantee will operate under the provisions of a Soil and Groundwater Management Plan to safeguard worker protection from potentially contaminated media and proper disposal of any soil generated from construction.
Environmental Justice	
Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations Executive Order 12898	No additional requirements apply to the Project. Impacts are anticipated to benefit disadvantaged communities.
State, County, and Local Plan Consistency	
National Pollution Discharge Elimination System (NPDES)	An erosion and sedimentation control plan will be required if one or more acres are to be disturbed. Plan must be filed and approved by the applicable regional office at least 30 days before beginning activity. An NPDES Construction Stormwater permit will also be issued.
Right-of-Way (ROW) Access Requests	Permits with ROW Access Requests will be submitted to complete construction within ROW owned by industries, rail organizations, federal entities, state departments, counties, and cities.

7.0 CONSULTATIONS

Table 7. Agency Consultations.

Agency and Name	Consultation	Status
State Historic Preservation Office (SHPO) of Nebraska Betty Gillespie- Interim Deputy SHPO August 9, 2023; November 8, 2023 402.805.7392	Section 106 Historic Preservation Consultation	SHPO concurrence received on August 23, 2023
SHPO of Iowa Branden Scott- Archaeologist, SHPO August 11,2023 515.348.6291	Section 106 Historic Preservation Consultation	SHPO comments received on August 28, 2023. Asked for geoarchaeological investigation during exploratory borings. Concurred “no effect” on February 7, 2024 and April 22, 2024.
U.S. Fish and Wildlife Service (USFWS) - Nebraska Field Office Mark Porath – Project Leader August 28, 2023 308.382.6468	Section 7 consultation for threatened and endangered species	USFWS acknowledged “no effect” determination on September 2, 2023.
Nebraska Game & Parks Commission (NGPC) CERT Tool August 21,2023 402.471.5423	Section 7 consultation for threatened and endangered species	NGPC CERT tool was used to determine impacts to species. Conservation conditions were accepted on August 24, 2023.
Iowa Department of Natural Resources (DNR) Casey Laskowski – Environmental Scientist August 28, 2023 515.330.6432	Section 7 consultation for threatened and endangered species	Response received on September 14, 2023, stating no species or critical habitat within project area.
Iowa Department of Transportation (IDOT) 800 Lincoln Way Ames, Iowa 50010 515.239.1216	Right-of-way (ROW) Access Requests	Notified of request
Sioux City, Iowa Tyler Erickson 620 Douglas St, 5th Floor Sioux City, IA 51101 712.279.6109	ROW Access Requests	Notified of request

Agency and Name	Consultation	Status
South Sioux City, Nebraska Nanci Walsh 1615 1st Ave South Sioux City, NE 68776 402.494.7504	ROW Access Requests	Notified of request
Woodbury County, Iowa Tyler Mogensen 620 Douglas St, Rm 703 Sioux City, IA 51101 712.279.6505	ROW Access Requests	Request pending completion of EA
Dakota County, Nebraska Assessor Christ Abts PO Box 9 Dakota City, NE 68731 402.987.2101	ROW Access Requests	Request pending completion of EA
Dixon County, Nebraska Assessor Amy Watchorn PO Box 369 Ponca, Ne 68770 402.755.5601	ROW Access Requests	Request pending completion of EA
Thurston County, Nebraska Assessor Susan Schrieber PO Box 309 Pender, NE 68047 402.385.2251	ROW Access Requests	Request pending completion of EA
Wayne County, Nebraska Assessor Dawn Duffy 510 Pearl Street Wayne, NE 68787 402.375.2288	ROW Access Requests	Request pending completion of EA
Union Pacific Railroad (UPRR) 1.888.877.7267	ROW Access Requests	Notified of request
Bureau of Indian Affairs Great Plains Region 605.226.7343	ROW Access Requests	Notified of request
Ho-Chunk Inc. 402.878.2560	ROW Access Requests	Notified of request

Agency and Name	Consultation	Status
Natural Resources Conservation Service Elizabeth Gray – Assistant State Soil Scientist August 28, 2023 402.846.5655 extension 3	Farmland Protection Act consultation	Response received on September 1, 2023. Responded back for clarification on September 18, 2023. Letter of concurrence received September 21, 2023.
U.S. Army Corps of Engineers (USACE) Omaha District Amanda Dague – Project Specialist May 24, 2023 402.896.0896 Updated Contact Kristina Amato Nebraska Regulatory Office 402.949.3906	Section 404 and Section 10 consultation ROW Access Requests	Pre-application meeting held on May 24, 2023. Concurred Nationwide Permit (NWP) 57 and Section 10 needed on June 28, 2023. ROW request submitted
USACE Rock Island District Albert Frohlich – Project Specialist June 16, 2023 309.794.5859	Section 404 and Section 10 consultation	Concurred NWP 57 needed on June 27, 2023.
U.S. Army Corps of Engineers (USACE) Omaha District Sarah Miller – Project Manager March 8, 2024 402.995.2699	Section 408 consultation ROW Access Requests	Pre-coordination meetings held on February 16, 2023 (Oliver Berglund) and March 8, 2024. ROW request submitted

Tribal Nation Consultation

NTIA initiated tribal consultation using the Tower Construction Notification System (TCNS). Through this system, NTIA consulted with the following federally recognized tribes:

- Crow Creek Sioux Tribe
- Flandreau Santee Sioux Tribe
- Spirit Lake Nation
- Northern Cheyenne Tribe
- Lac du Flambeau Band of Lake Superior Chippewa Indians
- Rosebud Sioux Tribe
- North Cheyenne Tribe
- Prairie Band Potawatomi Nation

- Northern Arapahoe

Flandreau Santee Sioux Tribe, Spirit Lake Nation, and Lac du Flambeau Band of Lake Superior Chippewa Indians replied they had an interest in the project and would like more information. The other six tribes had no interest in the site. After more information was received, Spirit Lake Nation sent a No Effect determination for the project and Lac du Flambeau Band of Lake Superior Chippewa Indians responded that the project was outside their current area of interest. Three tribes responded after the 30-day response period indicating no interest in the project.

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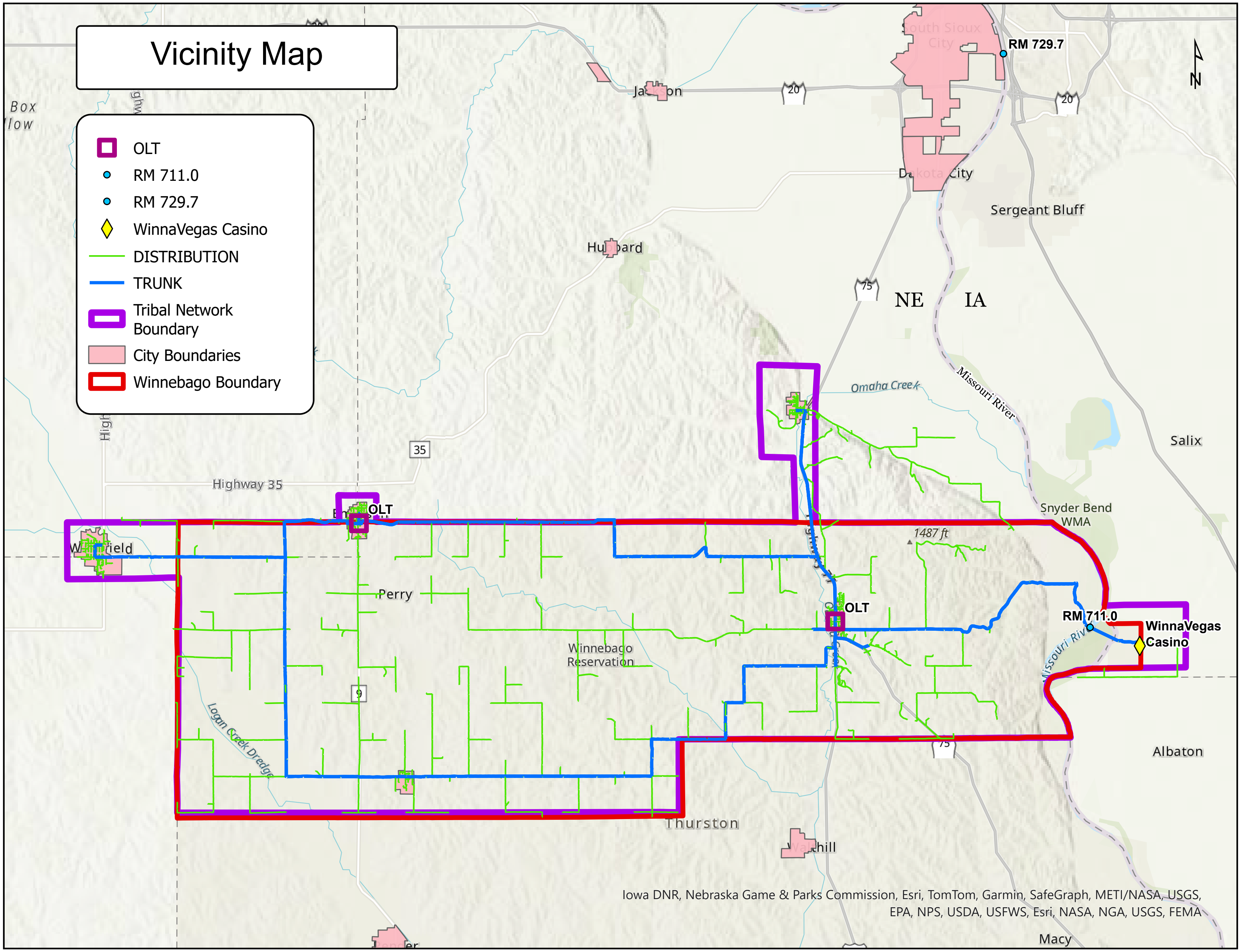
Appendix A

List of Preparers

Name	Title	Role
Kari Sherman	Olsson; Scientist	Author
Krista Schnepf	Olsson; Project Manager	Coordinator/ Report Review and QA/QC
Susan Opperman	Olsson; Project Scientist	Coordinator and QA/QC
Sage Evans	Olsson; Associate Scientist	Author
Julie Smith	Olsson; Technical Leader	Author and QA/QC
Cara Booth	Olsson; Assistant Scientist	Author
Rodney Martin	Olsson; Design Technical Manager	Lead Coordinator/Project Manager
Megan Czerwinski	Olsson; Associate Scientist	GIS/ Figure Production
Raina Hanley	Beaver Creek Archeology	Cultural Resources Research
Wade Burns	Beaver Creek Archeology	Cultural Resources Research
Lisha Cauthen	Olsson; Specialist/Editing	QA/QC
Jenn Bailey	Olsson; Specialist/Editing	QA/QC

Appendix B

Figures



olsson

Winnebago Tribe Broadband Connectivity Environmental Assessment

Dixon, Thurston, and Wayne Counties, Nebraska
Woodbury County, Iowa

Vicinity Map

Figure 1

WGS 1984 ARC System Zone 11

Basemap: ESRI Topo

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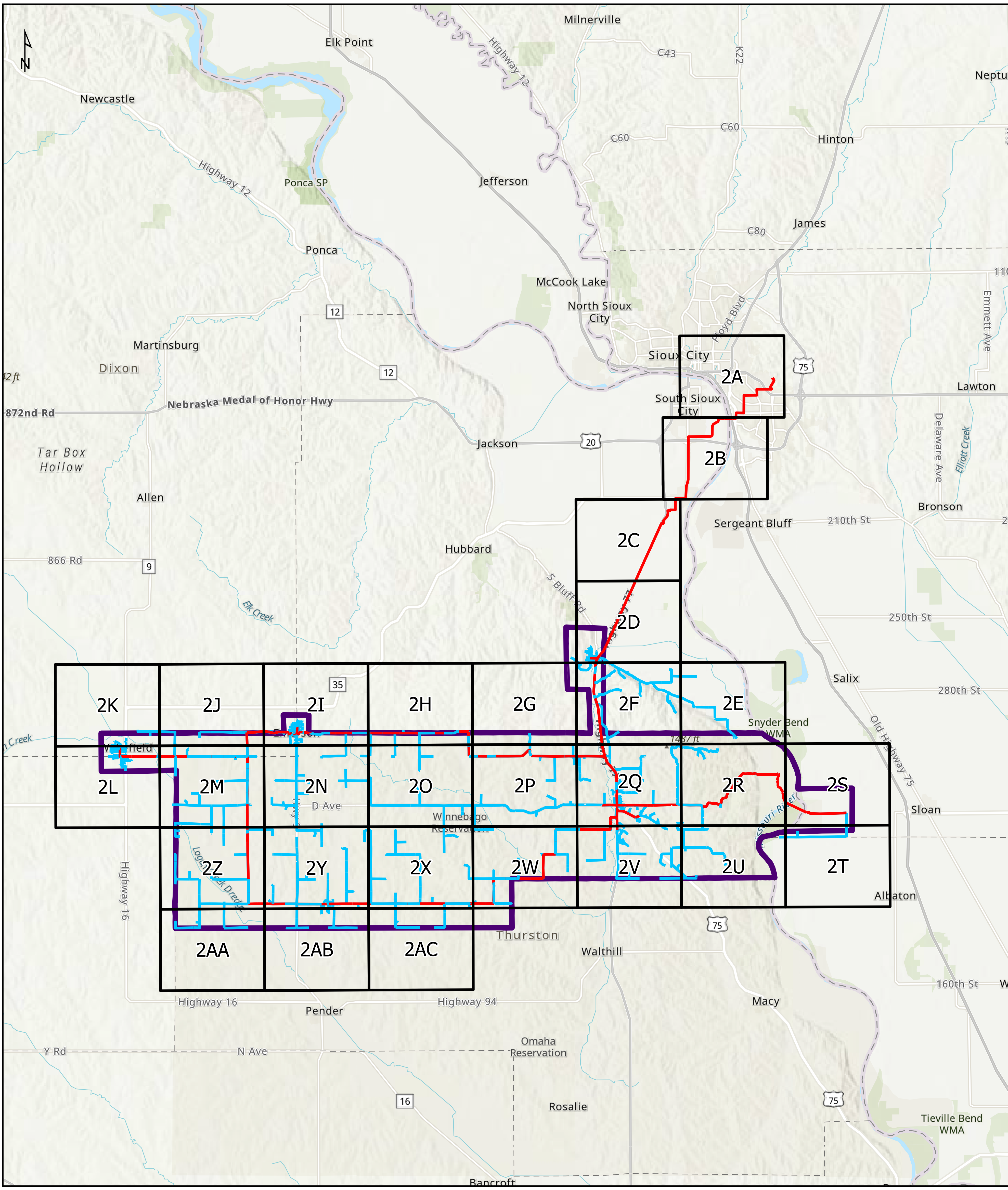
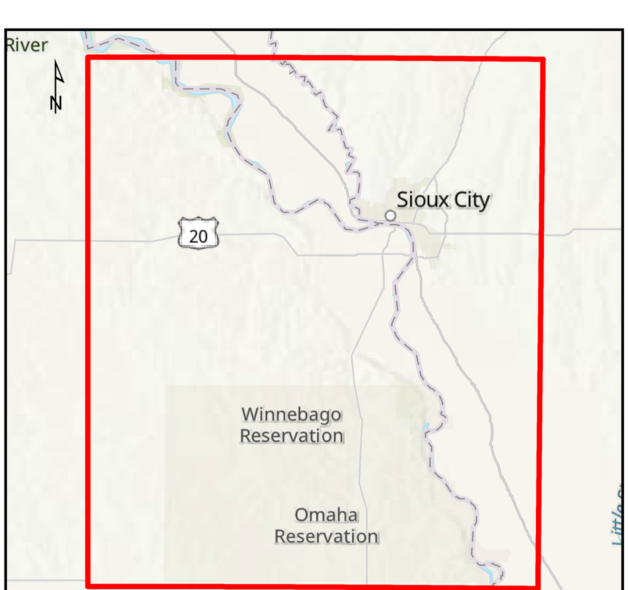


0 3 6 12 Miles

Distribution

Trunk

Topographic Boundary



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Date:	20230927
Drawn By:	CAK
Reviewed By:	

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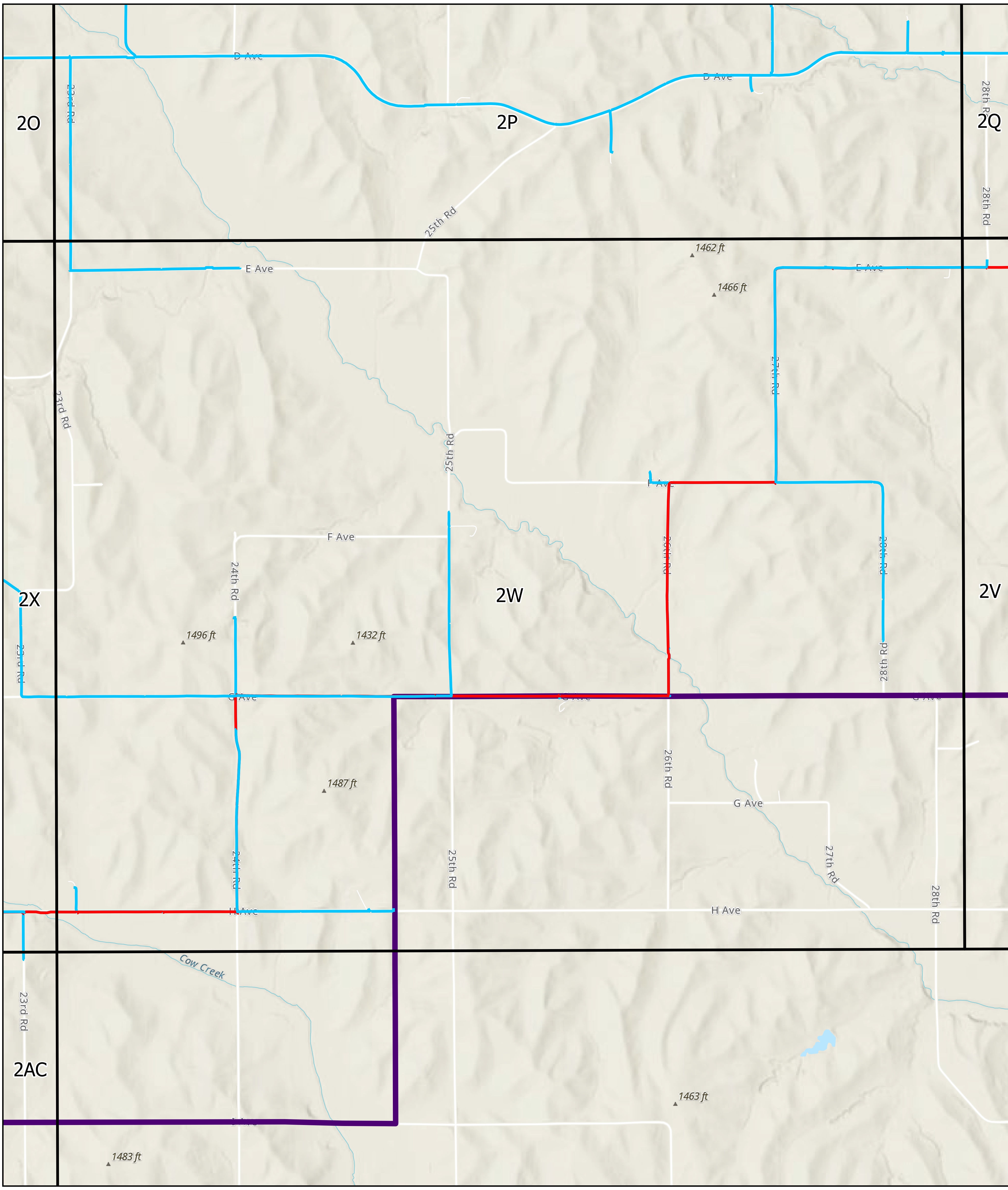
Figure 2: USGS Topographic Map

Proposed Winnebago Tribe Broadband Installation EA
Nebraska/Iowa

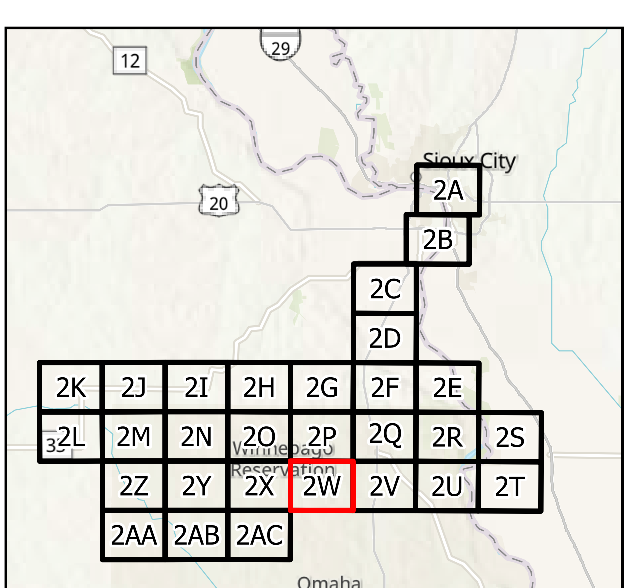
Figure

2



0 0.5 1 Miles

- Distribution
- Trunk
- Topographic Boundary



WINNEBAGO TRIBE OF NEBRASKA
Hocąk Nįsoc Haci

Project No:	021-05175
Date:	20230517
Drawn By:	CAK
Reviewed By:	

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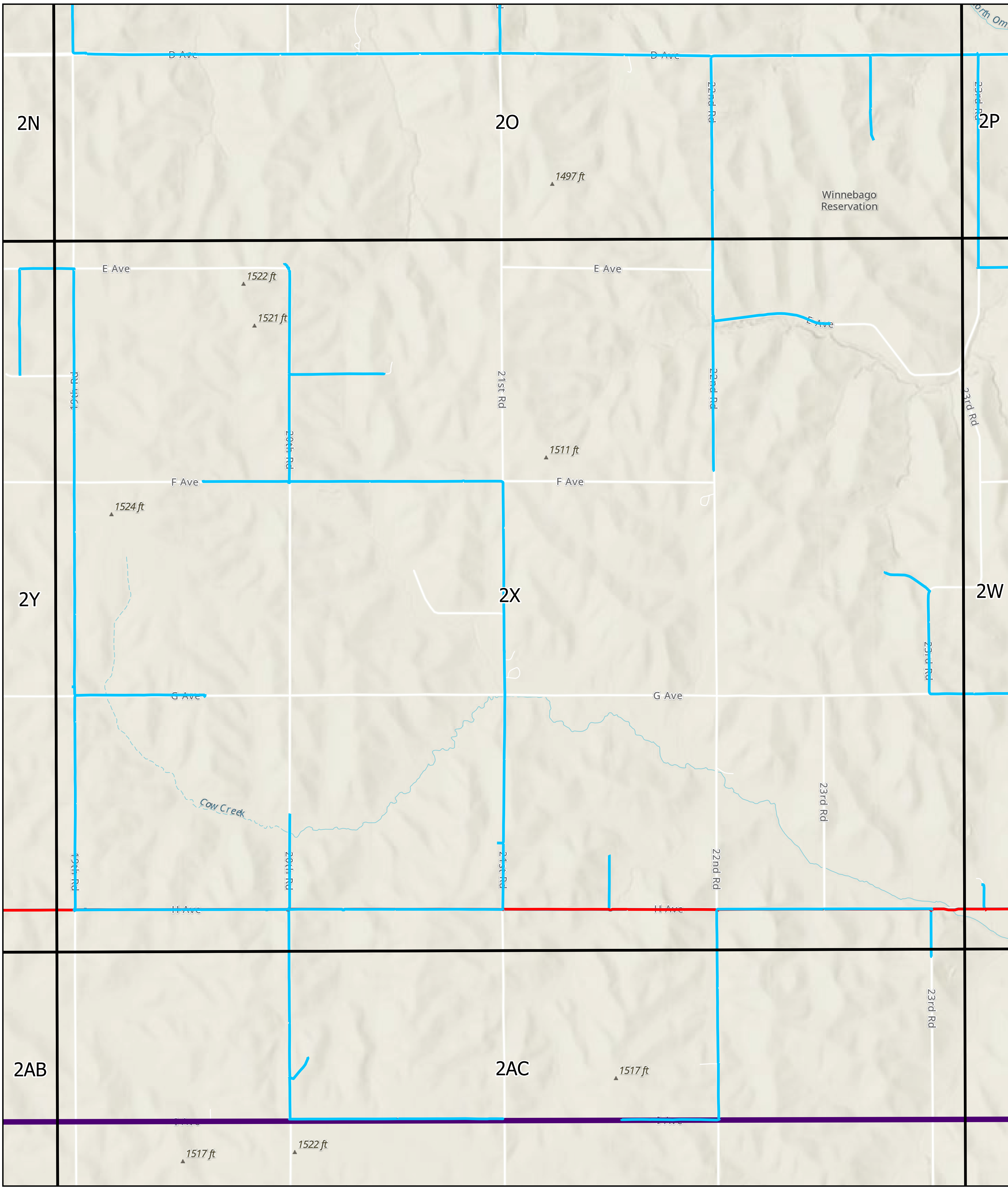
Figure 2: USGS Topographic Map

Proposed Winnebago Tribe
Broadband Installation EA
Nebraska/Iowa

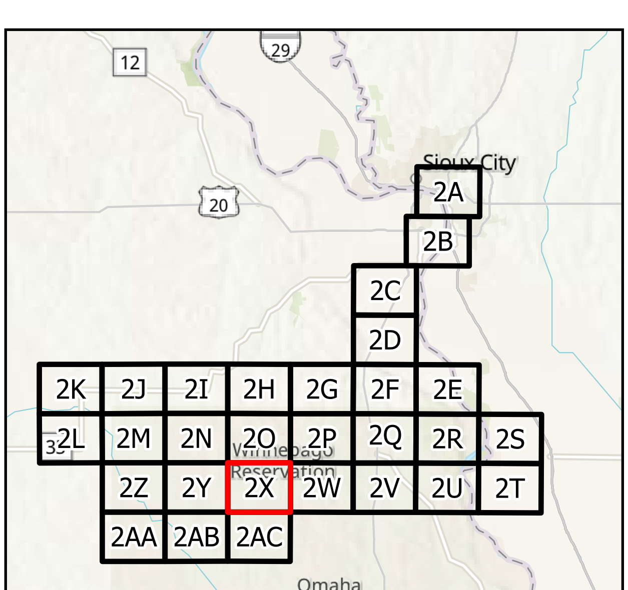
Figure

2W



0 0.5 1 Miles

- Distribution
- Trunk
- Topographic Boundary



WINNEBAGO TRIBE OF NEBRASKA
Hočąk Nįsoc Haci

Project No:	021-05175
Date:	20230517
Drawn By:	CAK
Reviewed By:	

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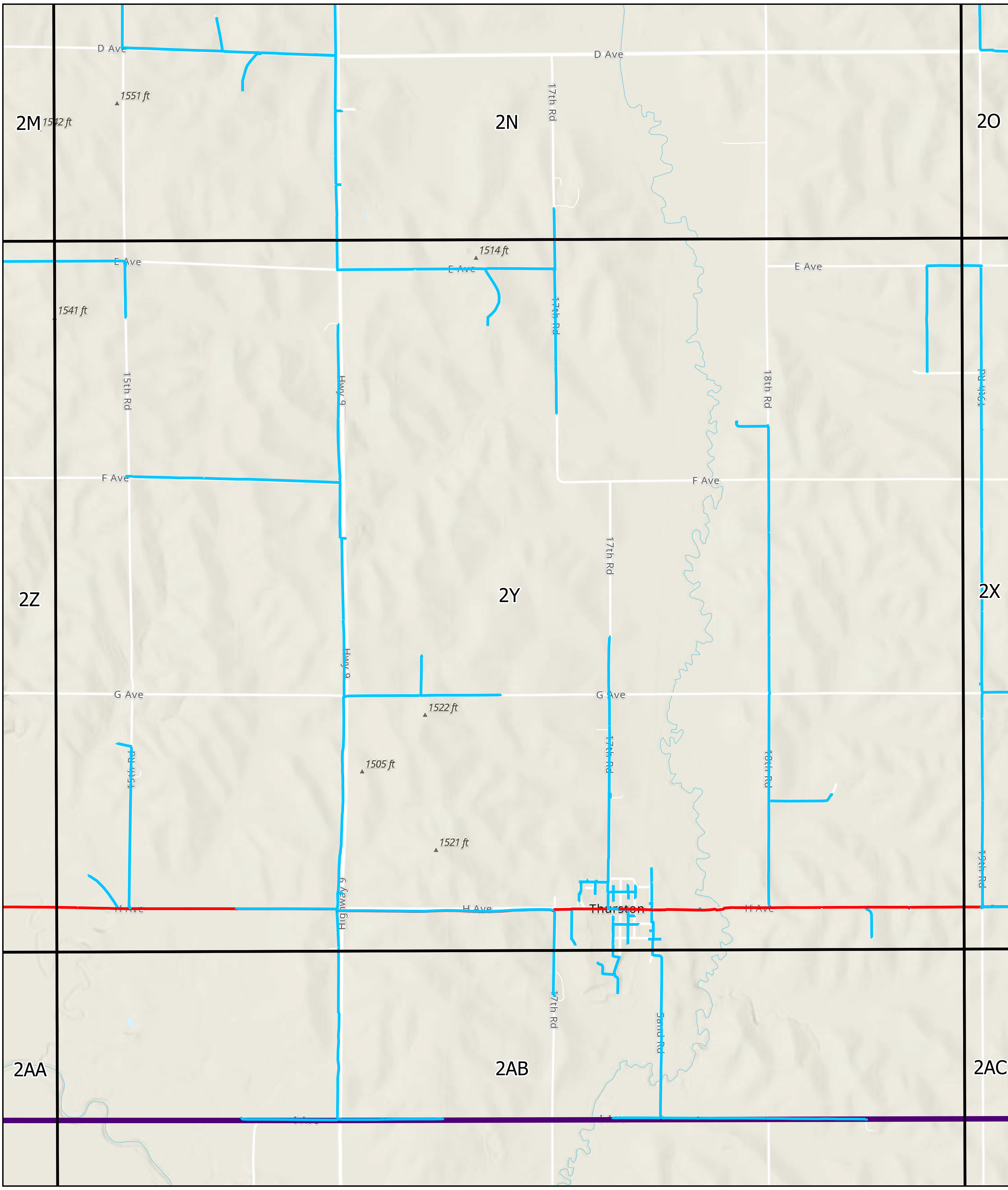
Figure 2: USGS Topographic Map

Proposed Winnebago Tribe
Broadband Installation EA
Nebraska/Iowa

Figure

2X



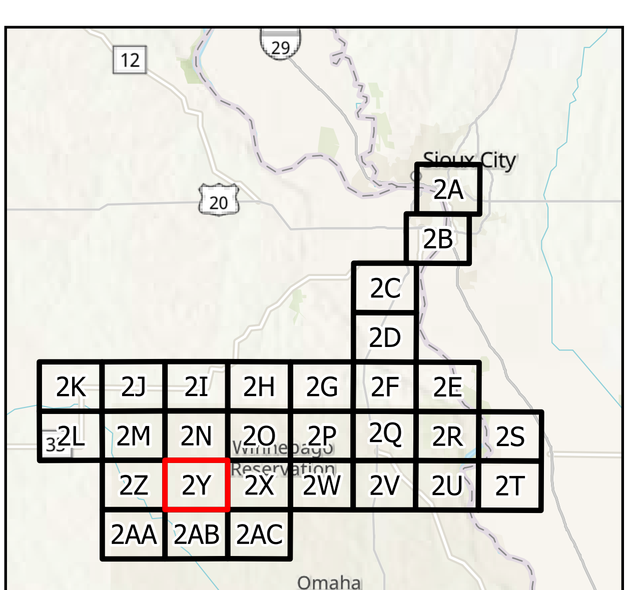
Miles

0 0.5 1

Distribution

Trunk

Topographic Boundary



WINNEBAGO TRIBE OF NEBRASKA

Hočąk Nįsoc Haci

Project No:	021-05175
Date:	20230517
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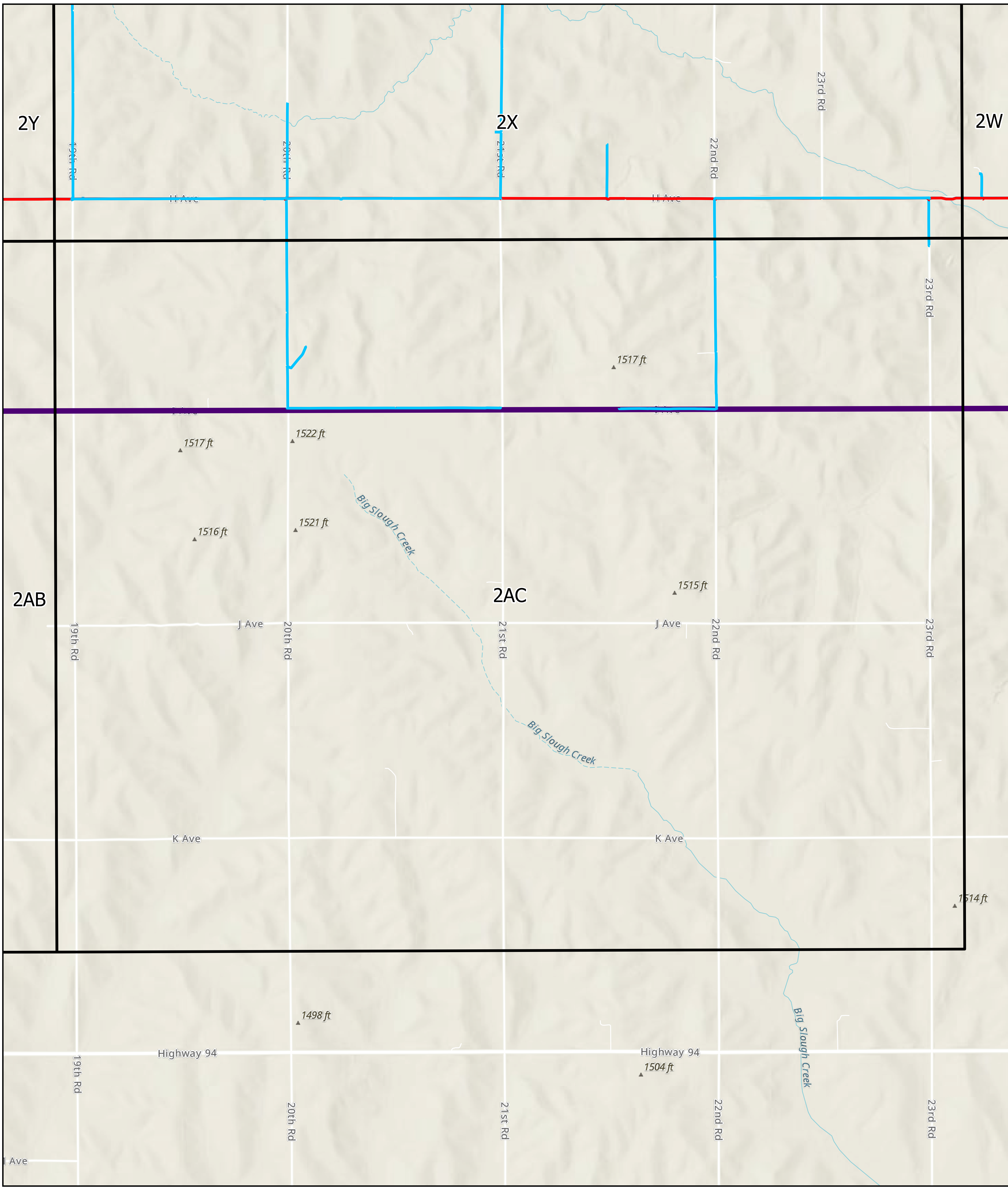
Figure 2: USGS Topographic Map

Proposed Winnebago Tribe
Broadband Installation EA
Nebraska/Iowa

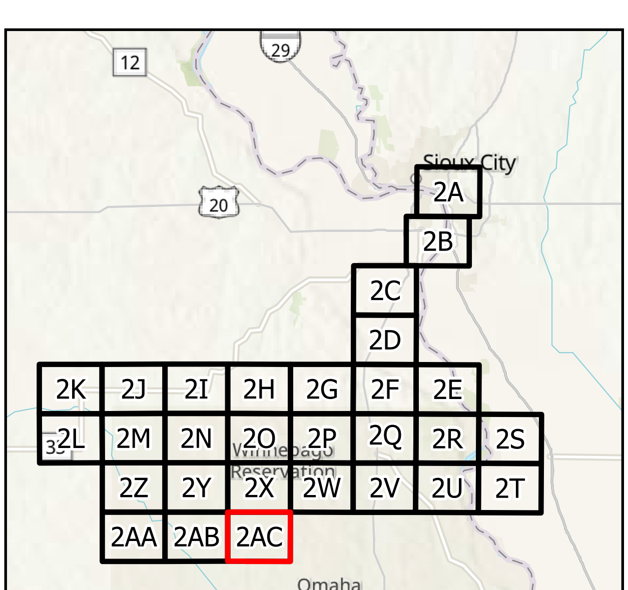
Figure

2Y



Miles
0 0.5 1

Distribution
Trunk
Topographic Boundary



WINNEBAGO TRIBE OF NEBRASKA
Hōcąk Nīsoc Haci

Project No:	021-05175
Date:	20230517
Drawn By:	CAK
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Figure 2: USGS Topographic Map

Proposed Winnebago Tribe
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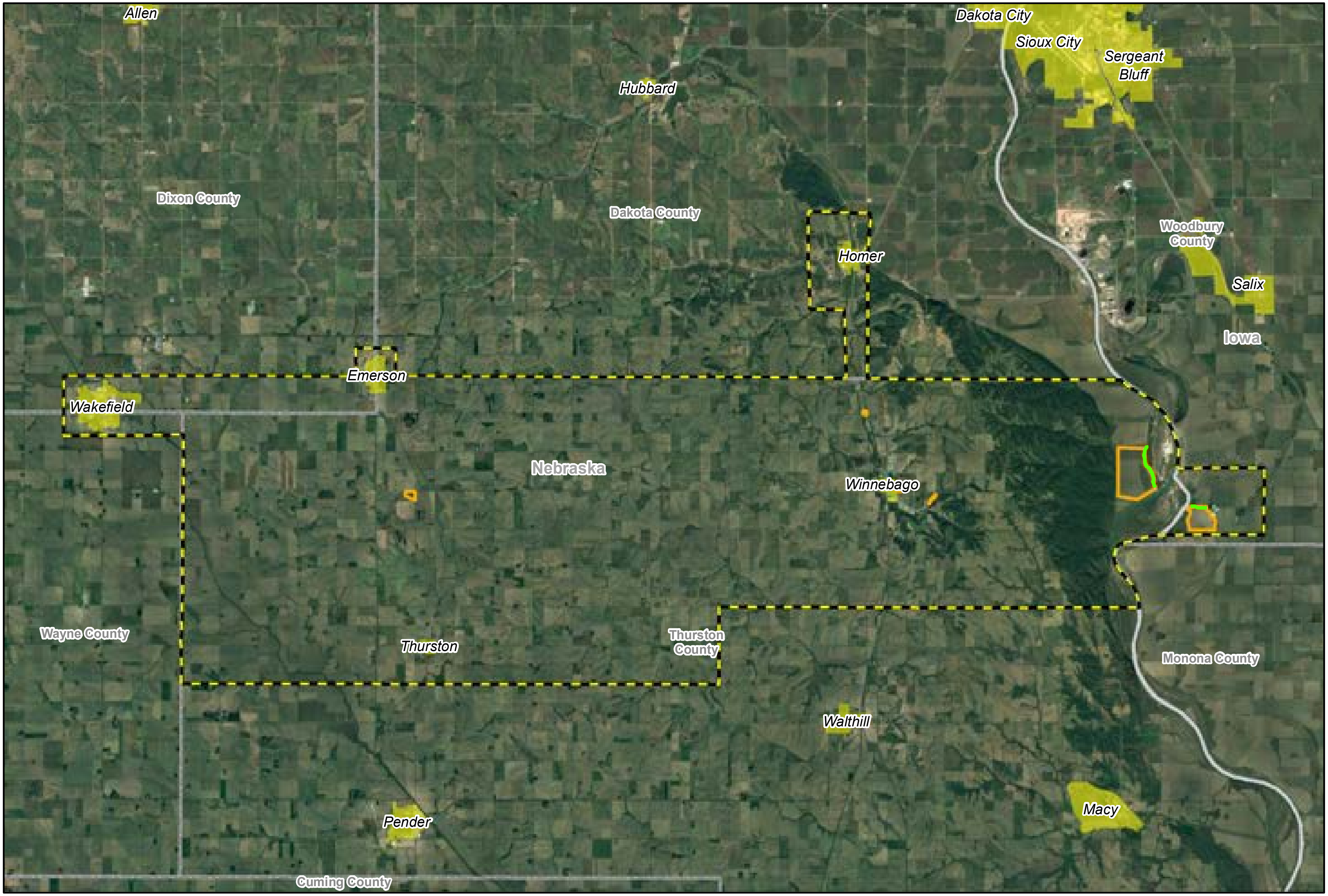
Nebraska/Iowa

Figure

2AC



N

0 4,700 9,400 18,800 ft

1 " = 17,822 '

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Access Road
Study Area
City Limits
Staging Area
State Boundary
County Boundary

Winnebago Tribe Broadband Connectivity Environmental Assessment

Dixon, Thurston, and Wayne Counties, Nebraska

Woodbury County, Iowa

Staging Areas Map

Figure 3

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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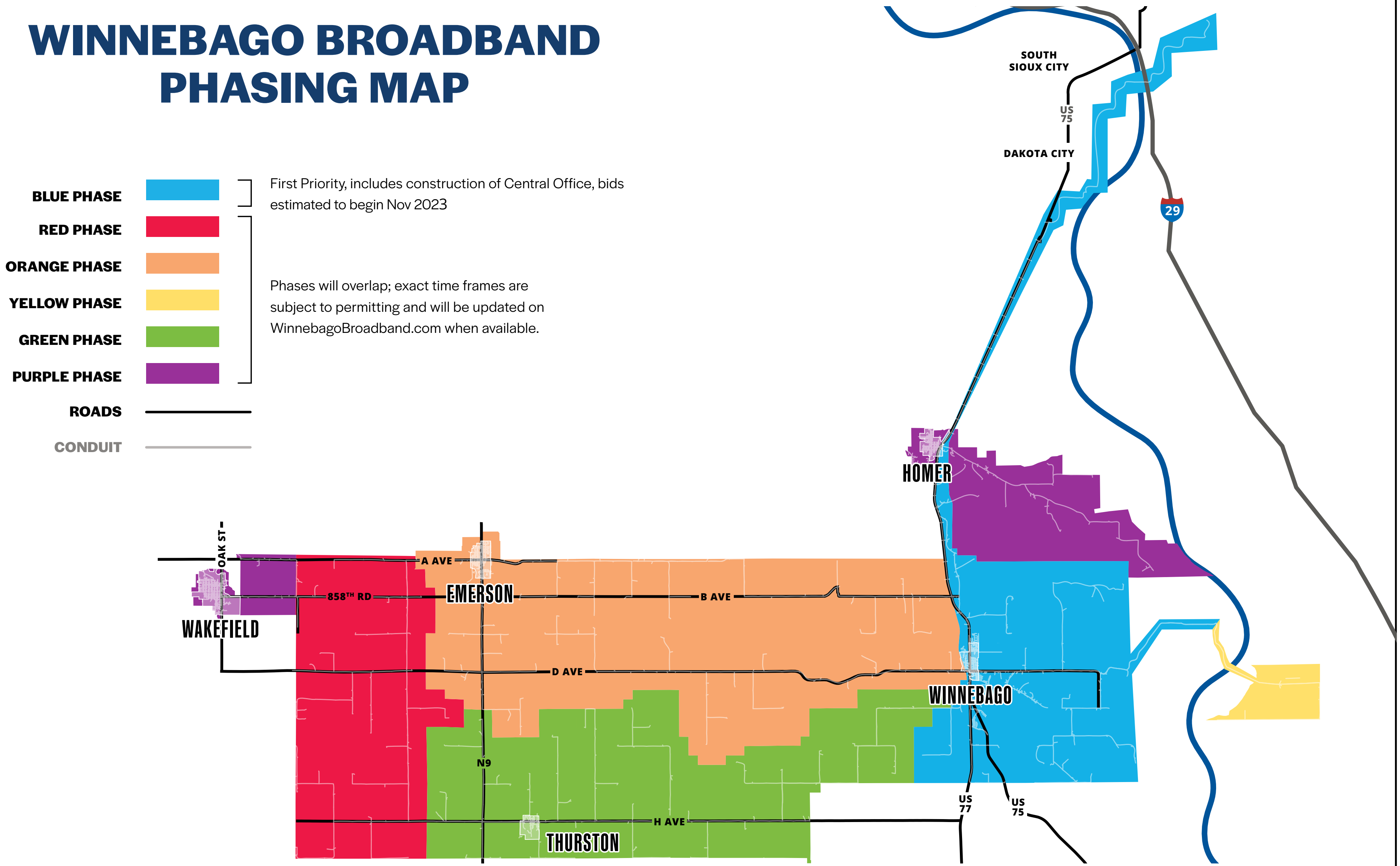
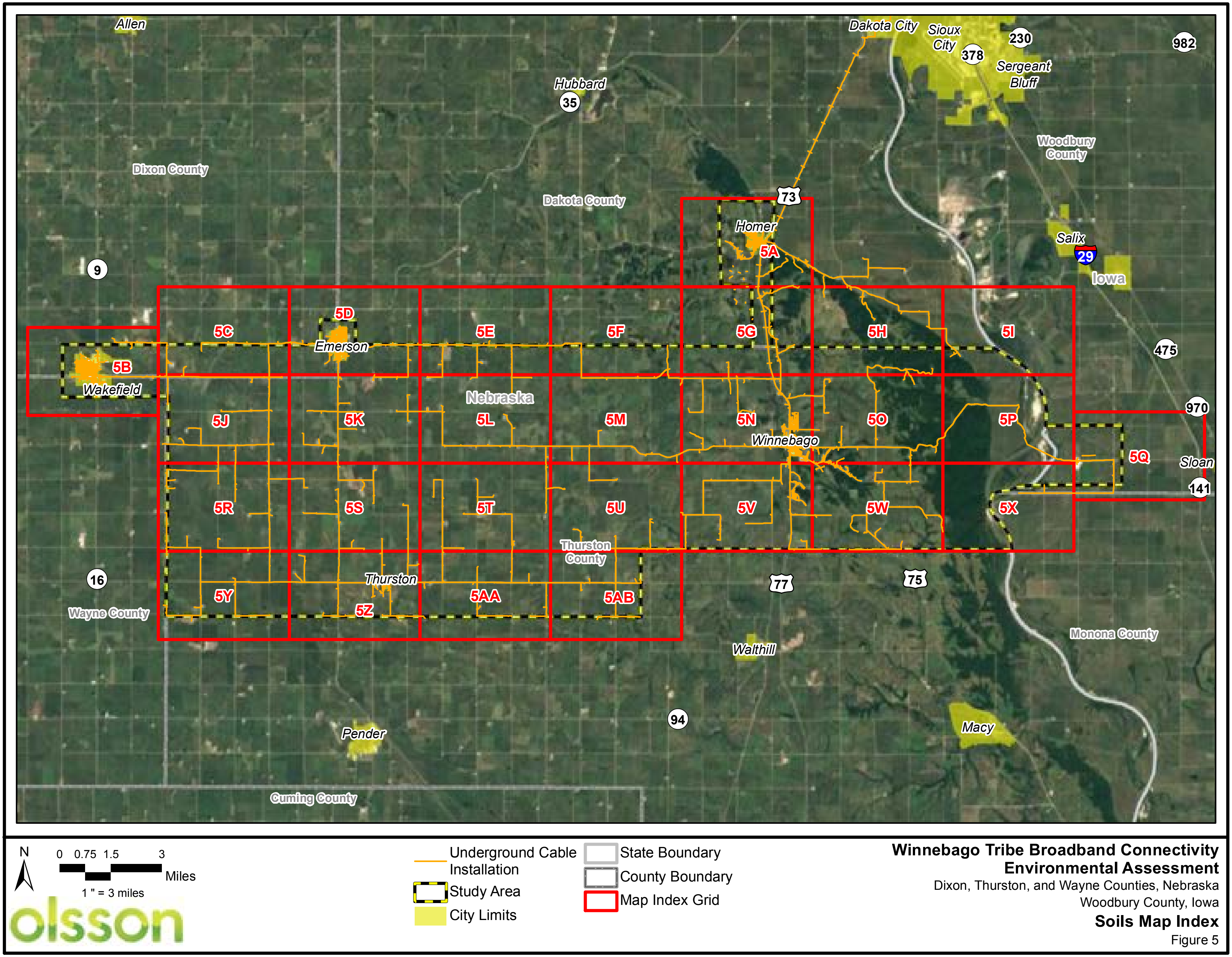
WINNEBAGO BROADBAND PHASING MAP



N

Winnebago Tribe Broadband Connectivity Environmental Assessment
Dixon, Thurston, and Wayne Counties, Nebraska
Woodbury County, Iowa
Phasing Map
Figure 4

WGS 1984 ARC System Zone 11



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Winnebago Tribe Broadband Connectivity Environmental Assessment

Dixon, Thurston, and Wayne Counties, Nebraska
Woodbury County, Iowa

Soils Map Index

Figure 5

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WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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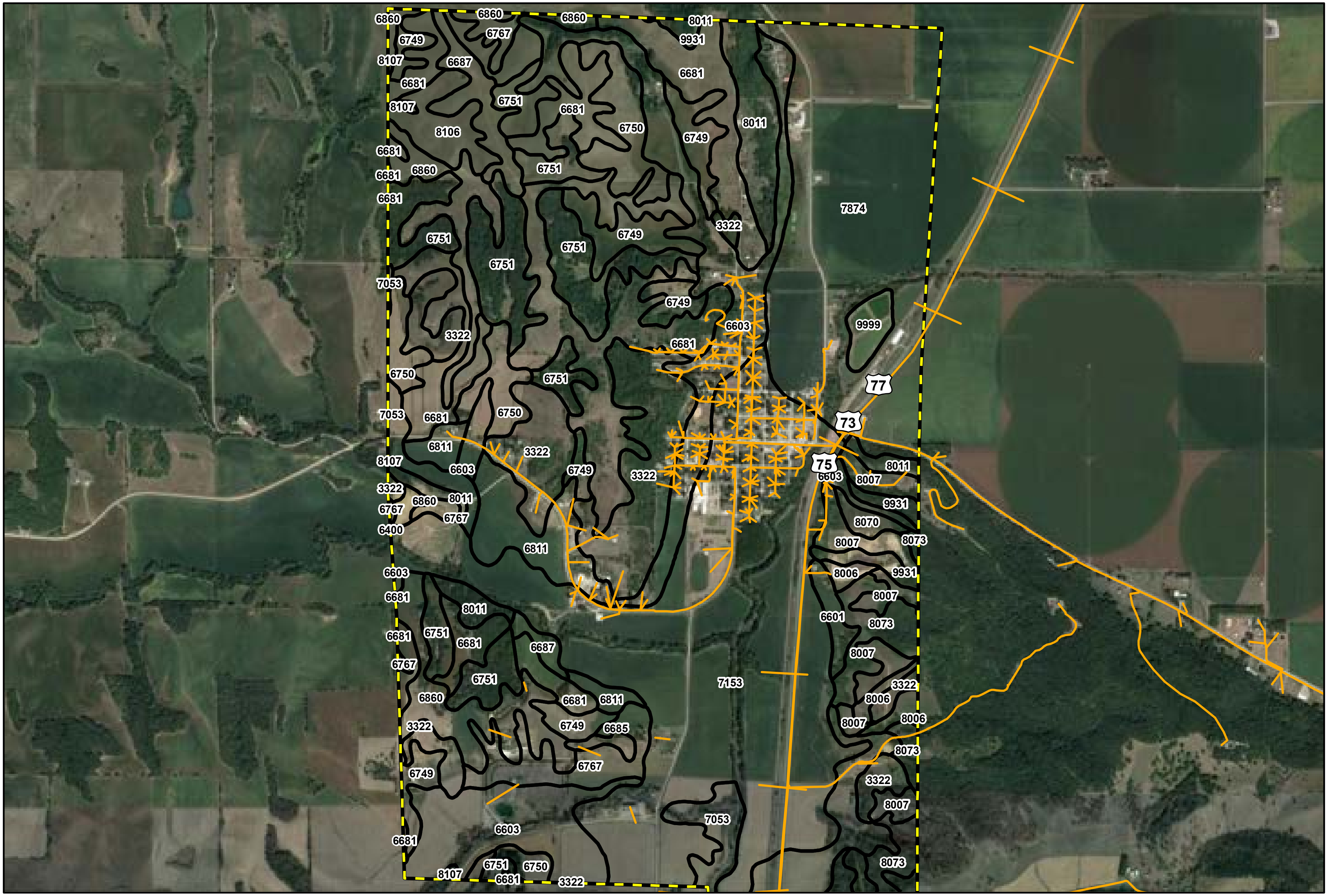

N
0 500 1,000 2,000
Feet
1 " = 2,000 feet

Underground Cable Installation
Study Area
City Limits
SSURGO Soils
State Boundary
County Boundary

Winnebago Tribe Broadband Connectivity
Environmental Assessment
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Soils Map
Figure 5A

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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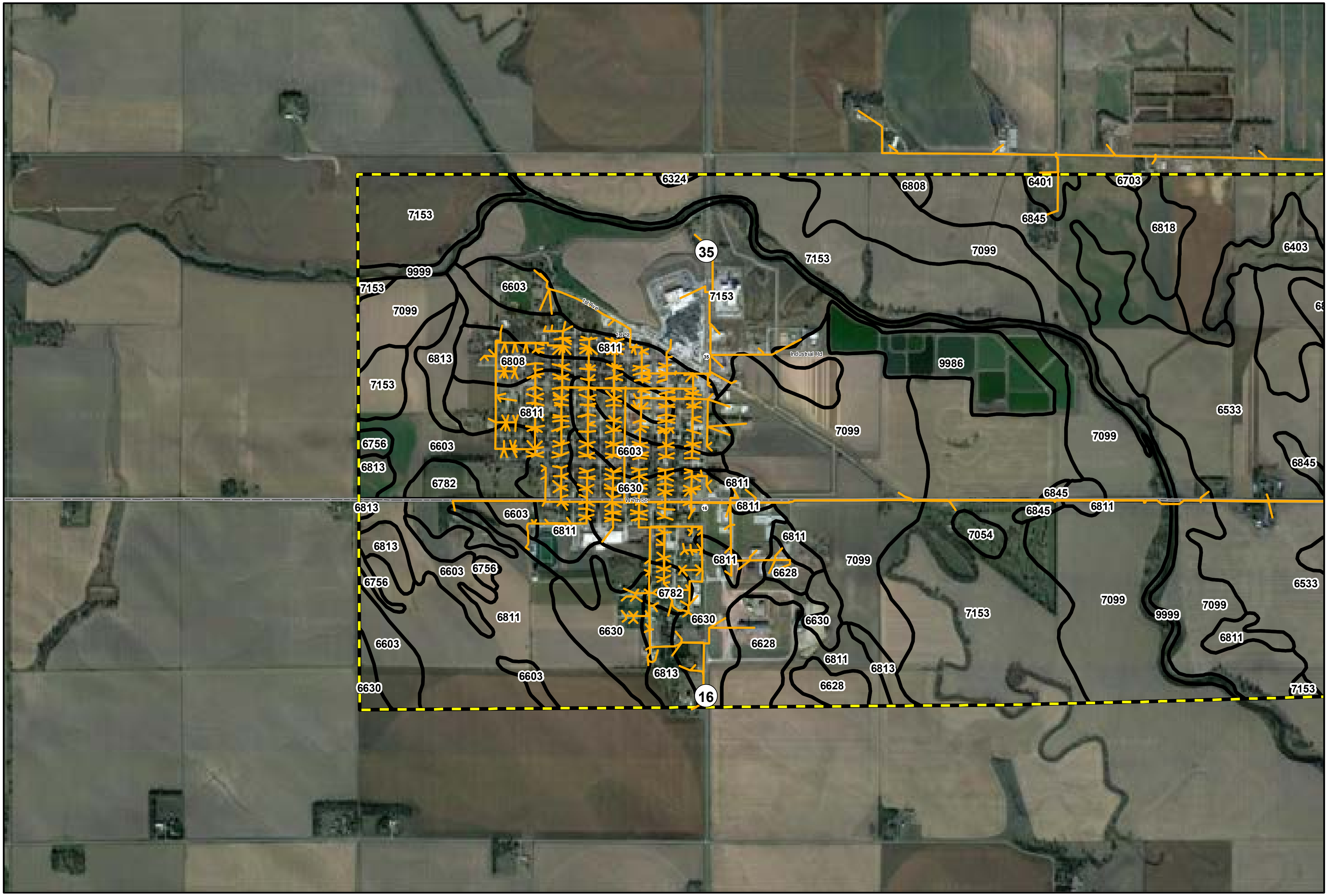

N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

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Underground Cable Installation

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SSURGO Soils

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County Boundary

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Environmental Assessment
Dixon and Wayne Counties, Nebraska
Soils Map
Figure 5B

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

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Figure 5C

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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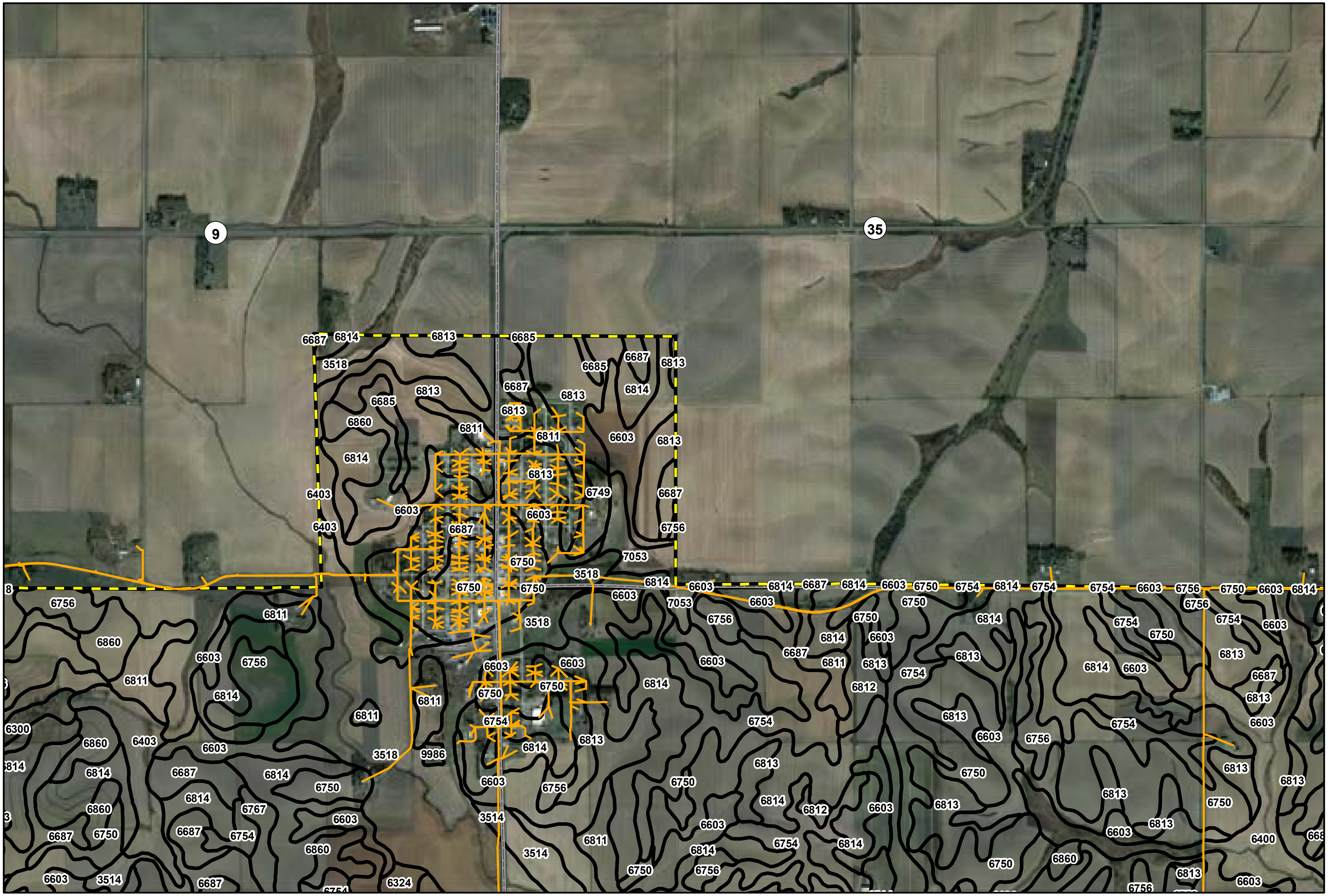

N

0 500 1,000 2,000
Feet
1 " = 2,000 feet

Underground Cable Installation
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Soils Map
Figure 5D

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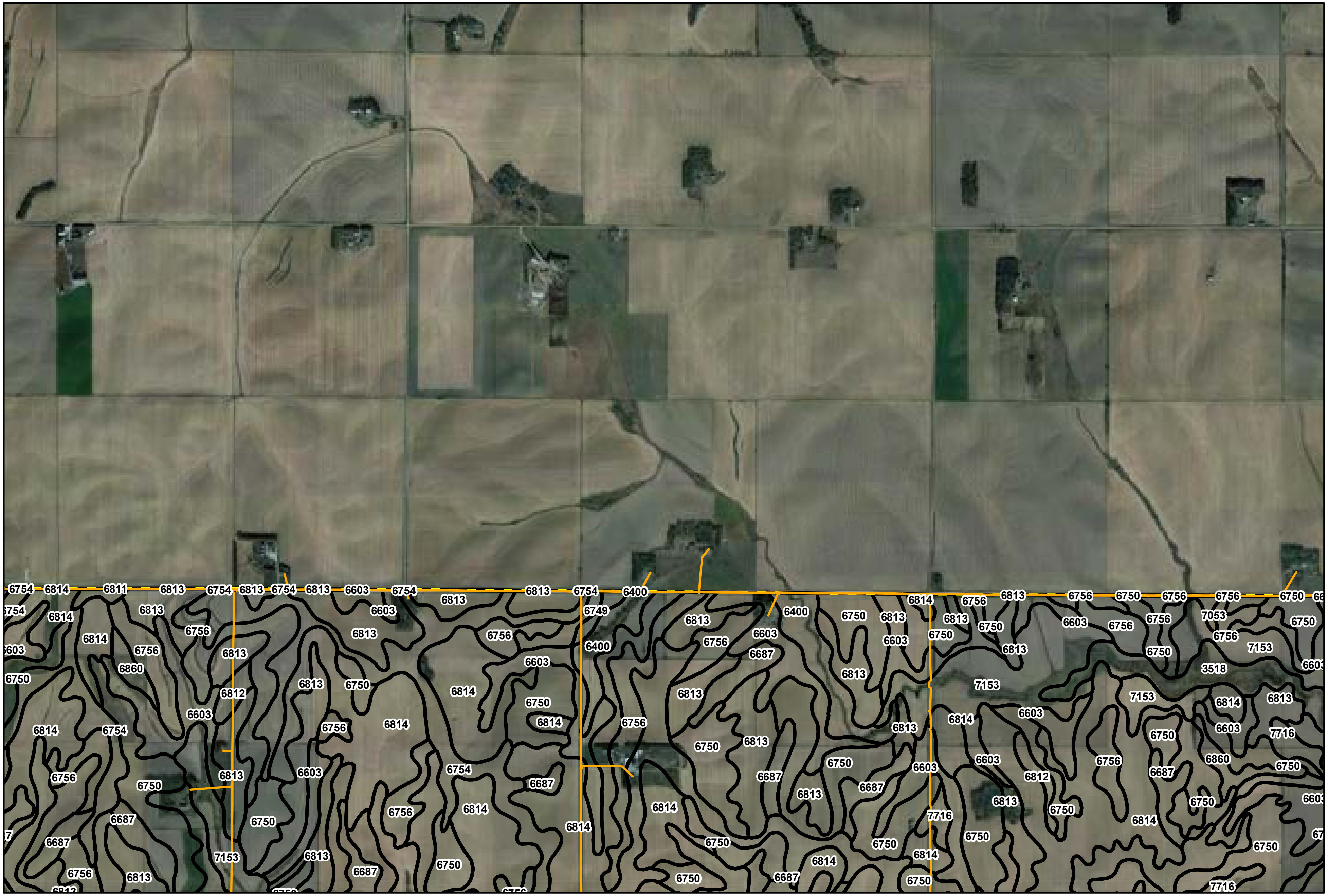
WGS 1984 ARC System Zone 11

Basemap: Google Satellite



N

0 500 1,000 2,000

Feet

1 " = 2,000 feet

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Underground Cable Installation

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Figure 5E

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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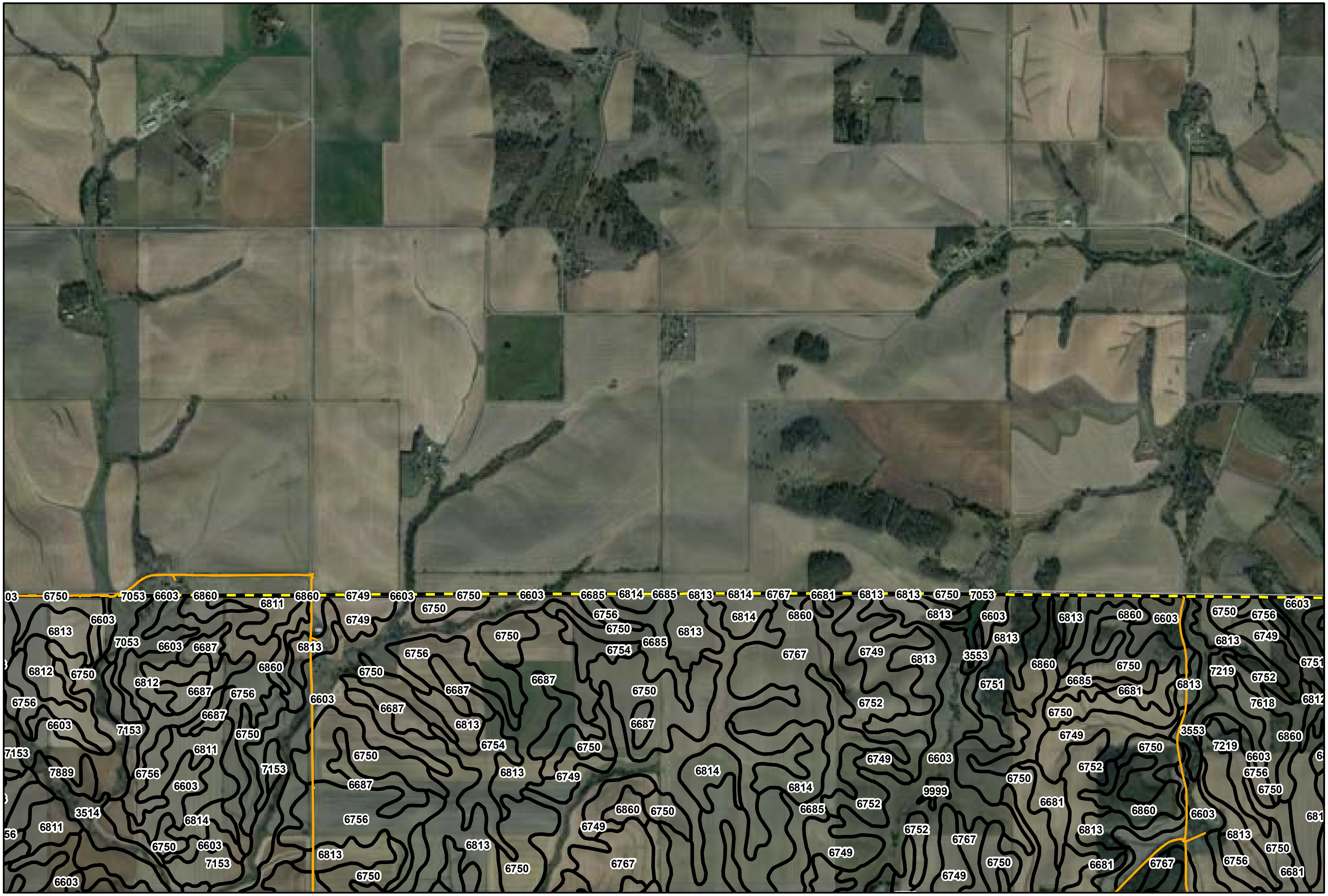

N

0 500 1,000 2,000

Feet

1 " = 2,000 feet

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Figure 5F

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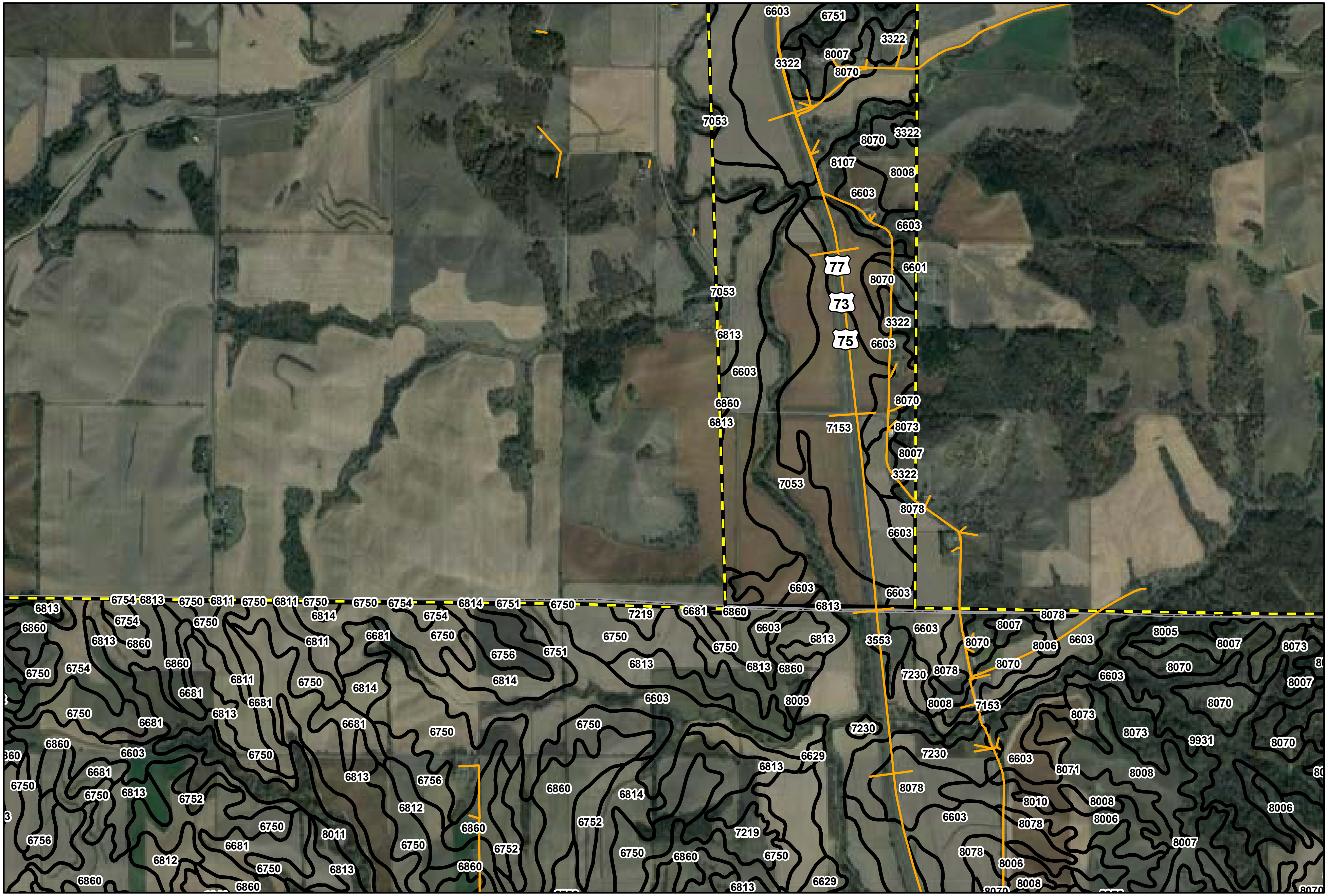
WGS 1984 ARC System Zone 11

Basemap: Google Satellite



N

0 500 1,000 2,000

Feet

1 " = 2,000 feet

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Figure 5G

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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N

0 500 1,000 2,000

Feet

1 " = 2,000 feet

Underground Cable Installation

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Figure 5H

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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N

0 500 1,000 2,000

Feet

1 " = 2,000 feet

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Figure 5I

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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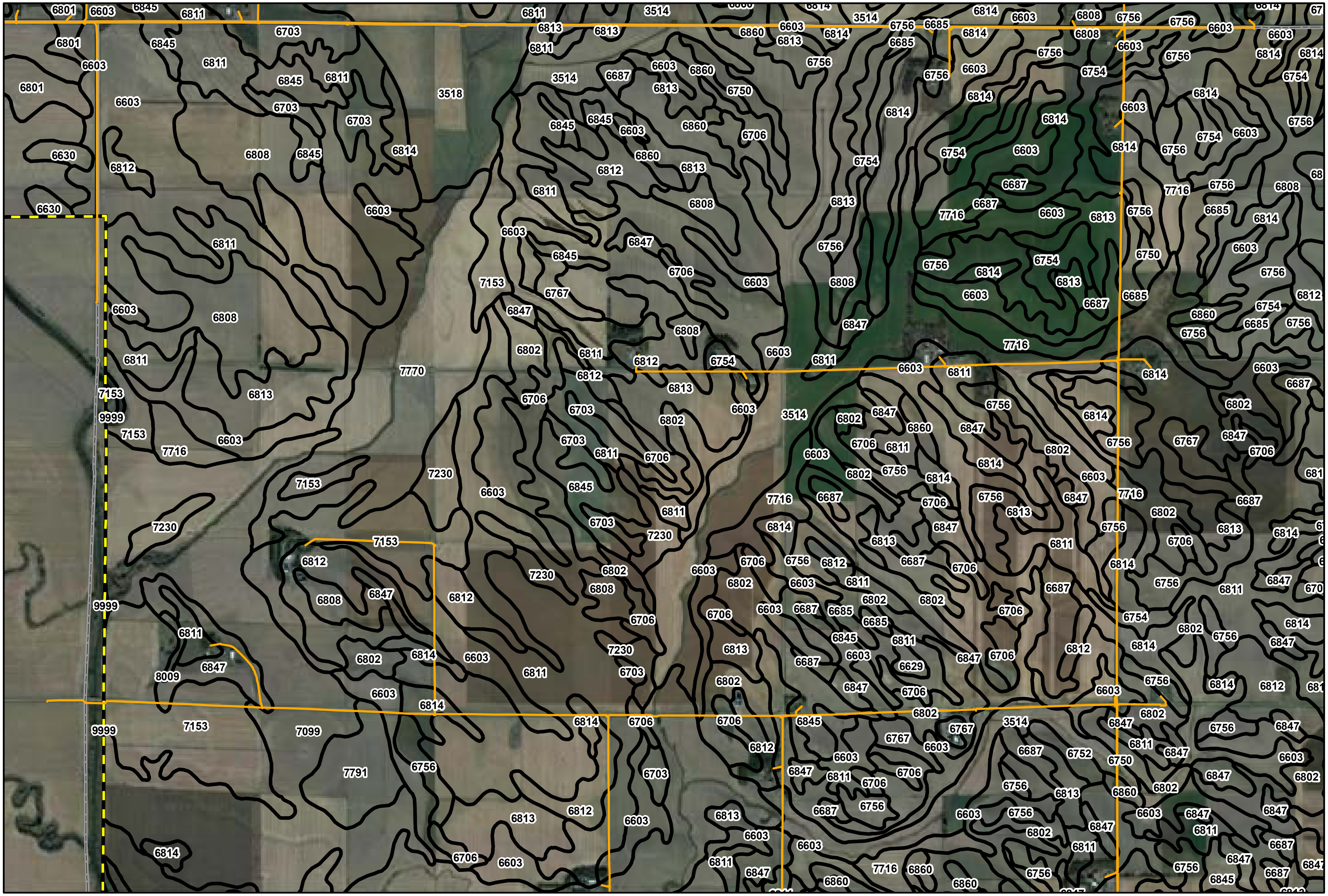

N

0 500 1,000 2,000

Feet

1 " = 2,000 feet

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Underground Cable Installation

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Figure 5J

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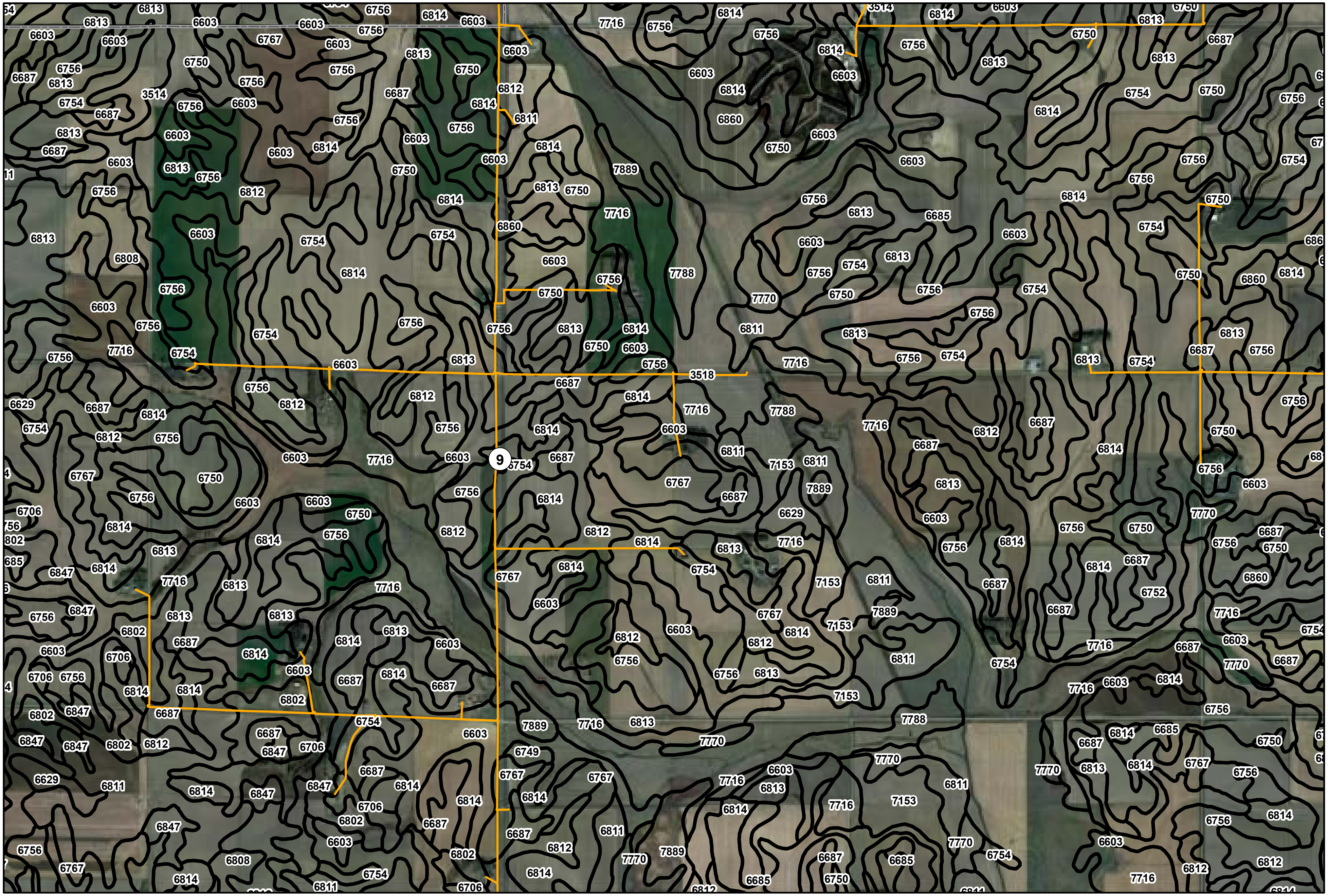
WGS 1984 ARC System Zone 11

Basemap: Google Satellite



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Winnebago Tribe Broadband Connectivity
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Figure 5K

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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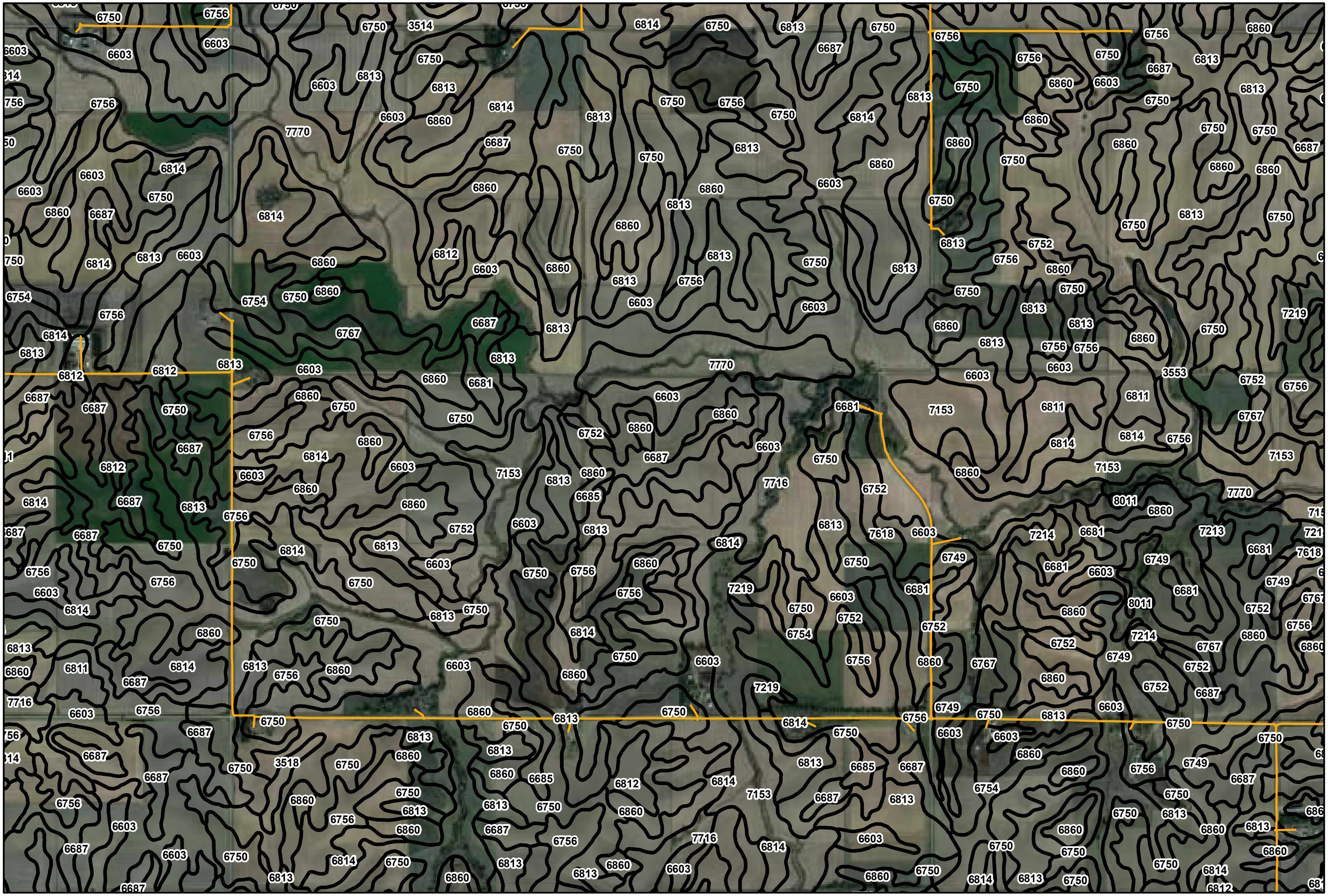

N

0 500 1,000 2,000

Feet

1 " = 2,000 feet

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Figure 5L

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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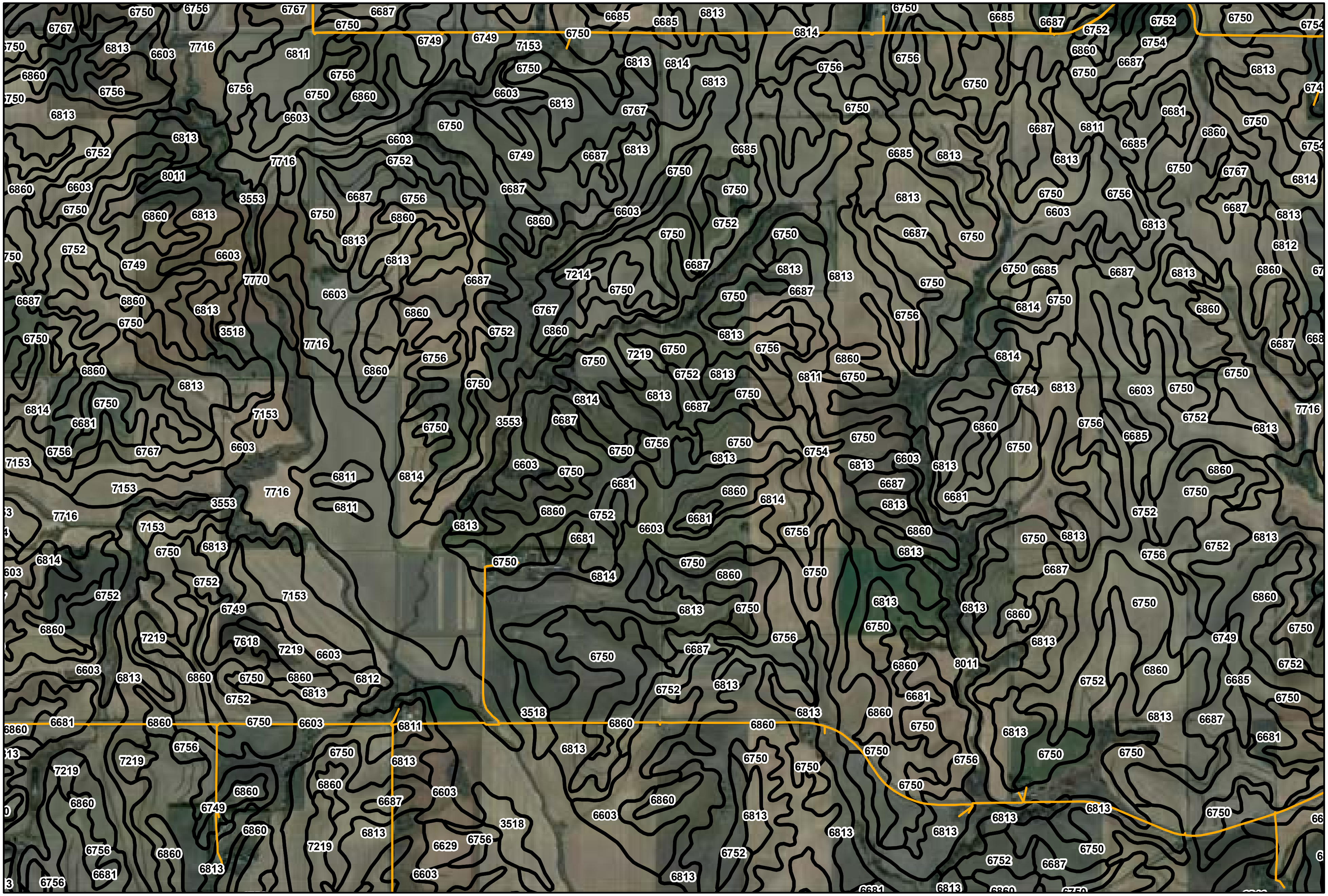

N

0 500 1,000 2,000
Feet
1 " = 2,000 feet

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Underground Cable Installation
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WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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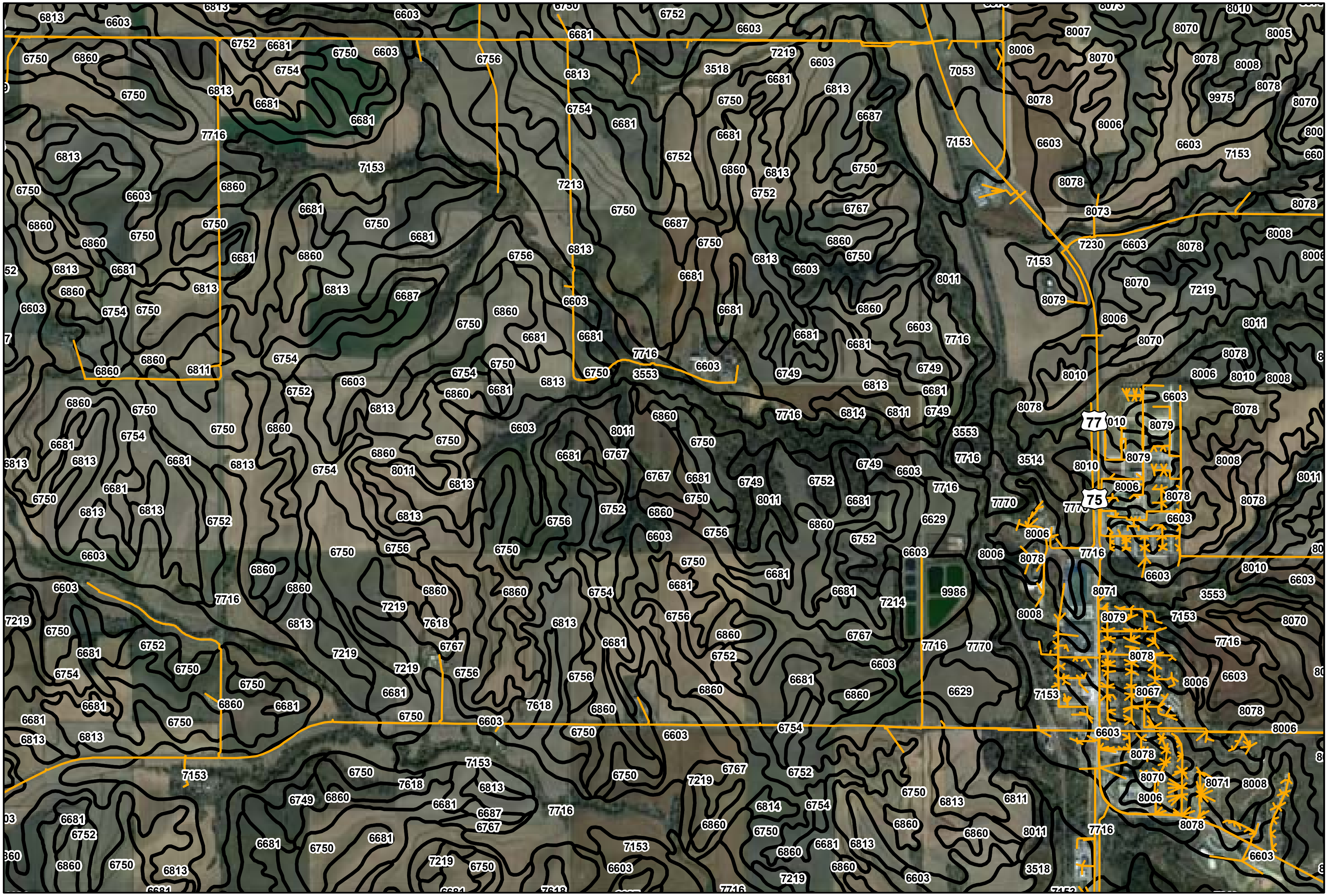

N

0 500 1,000 2,000
Feet
1 " = 2,000 feet

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Underground Cable Installation
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Figure 5N

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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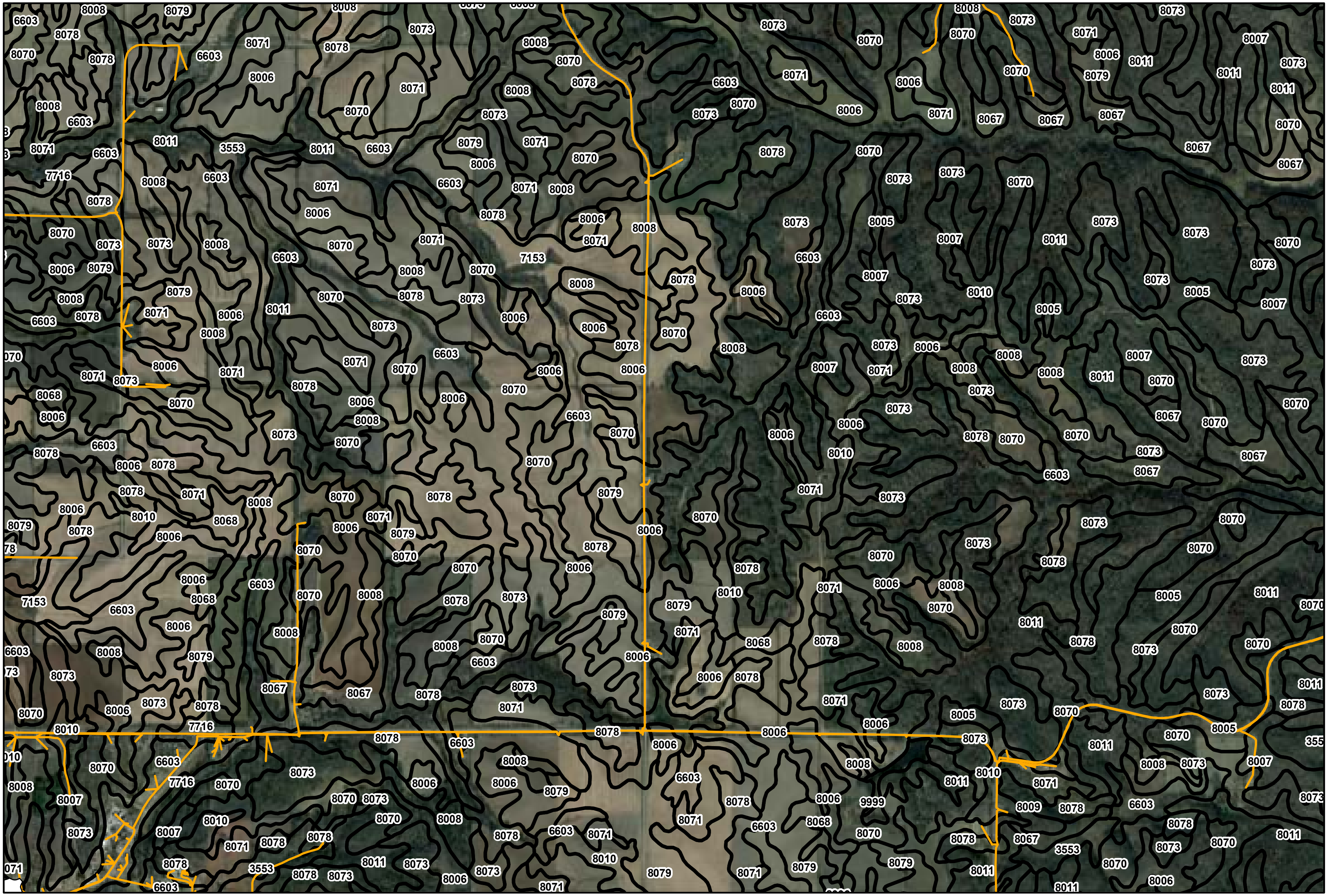

N

0 500 1,000 2,000
Feet

1 " = 2,000 feet

Underground Cable Installation

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WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

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WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

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Underground Cable Installation

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Environmental Assessment
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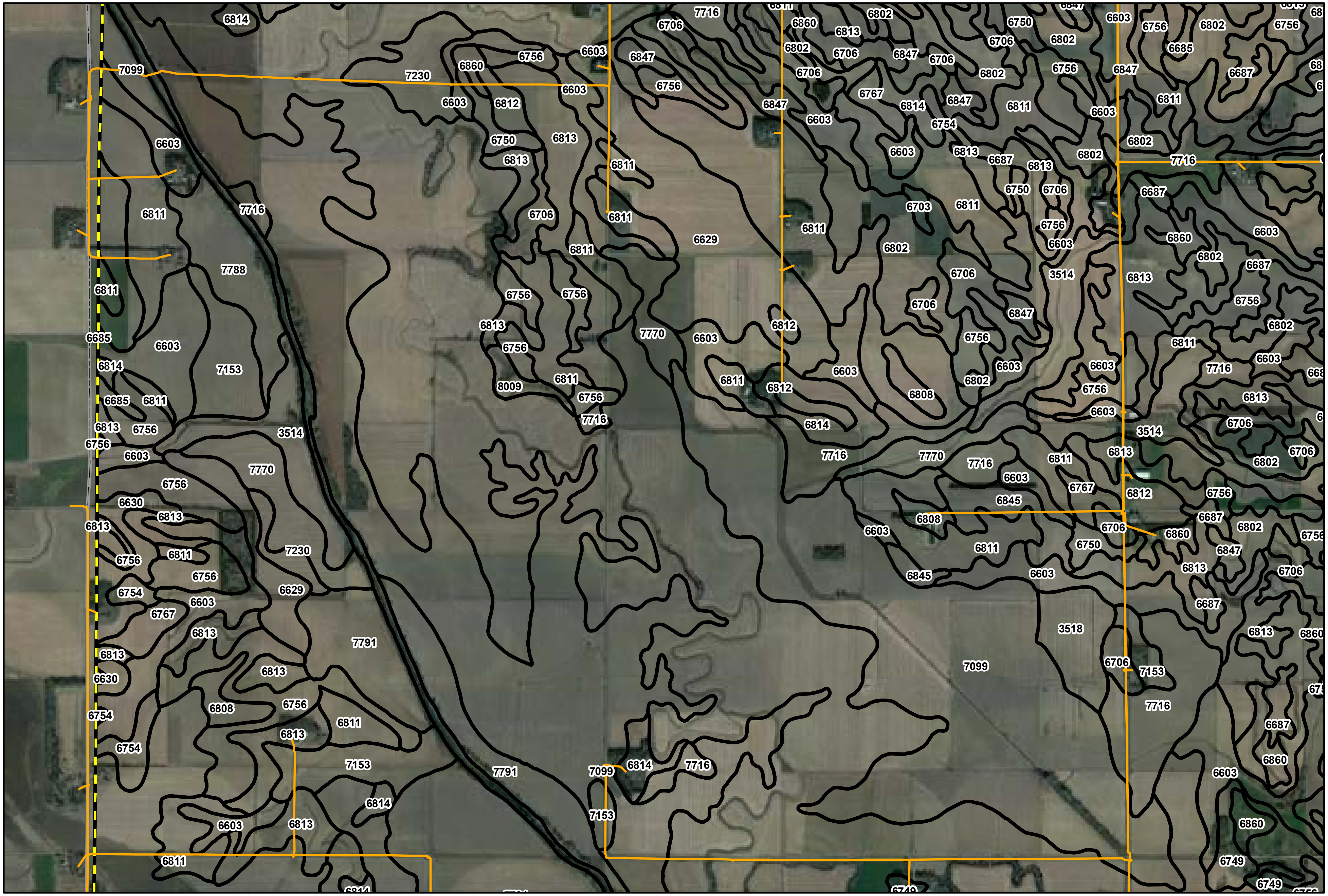
Soils Map
Figure 5Q

WGS 1984 ARC System Zone 11

Basemap: Google Satellite



N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

Underground Cable Installation

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WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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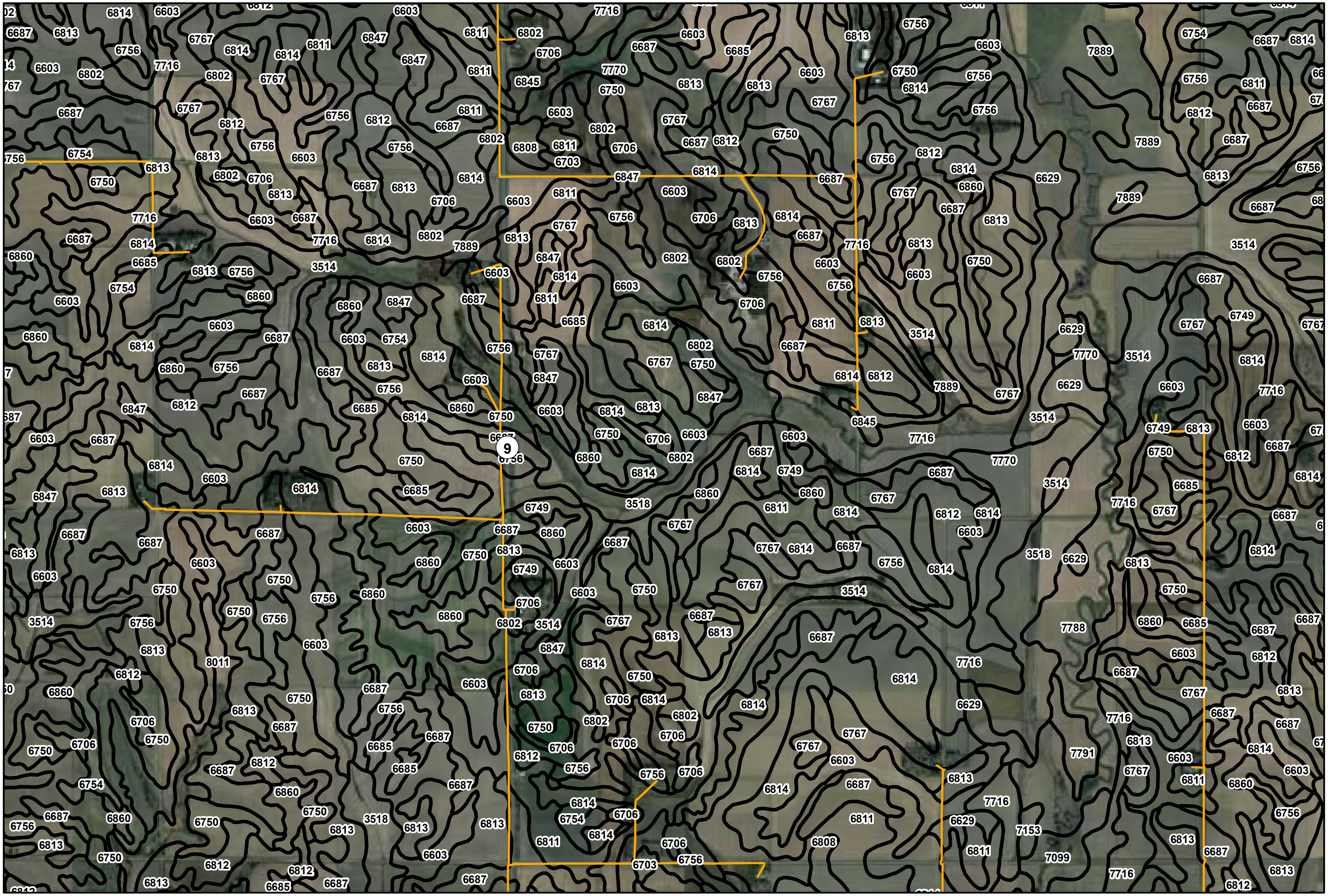

N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

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Underground Cable Installation

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County Boundary

Winnebago Tribe Broadband Connectivity
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Figure 5S

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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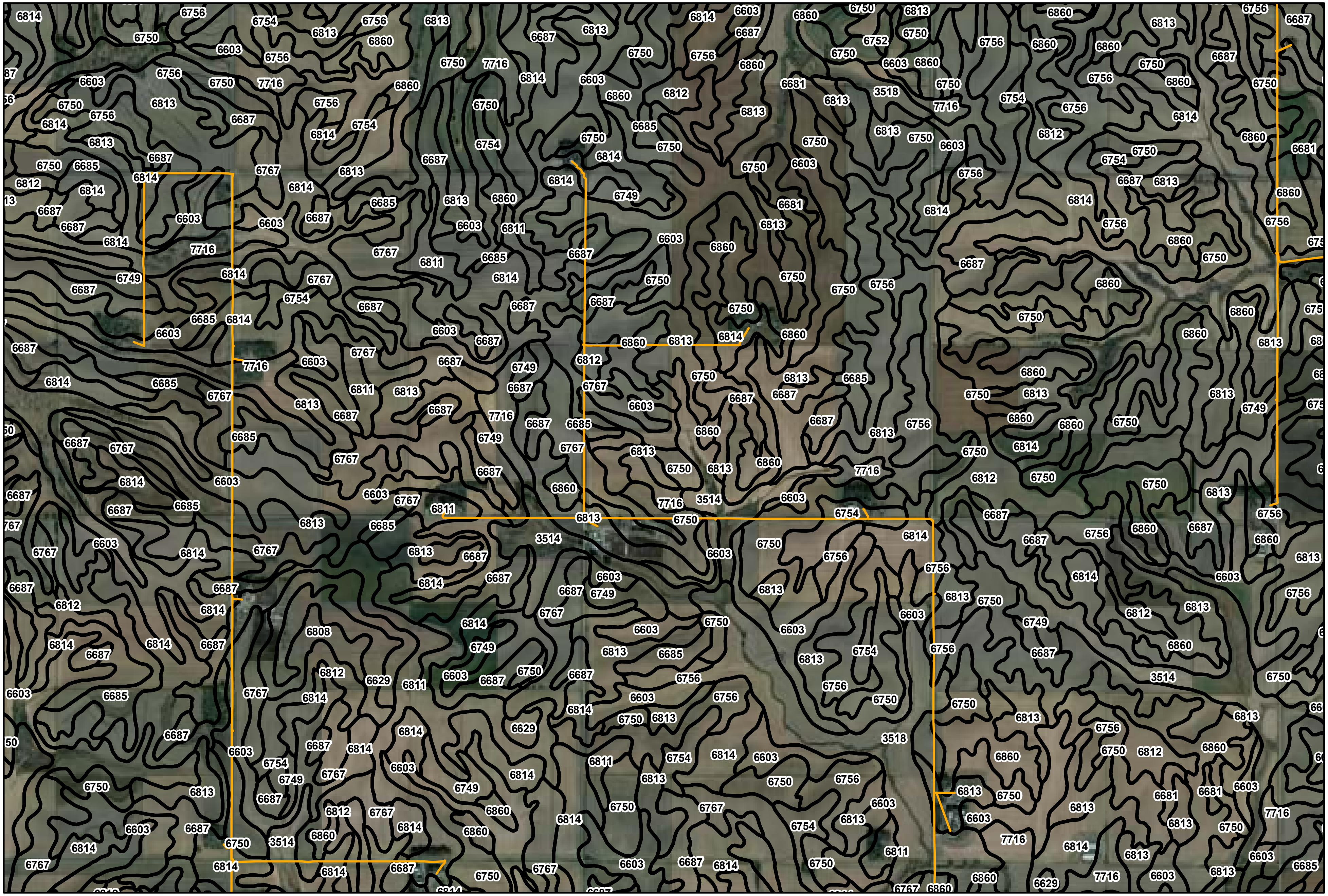

N

0 500 1,000 2,000
Feet

1 " = 2,000 feet

Underground Cable Installation

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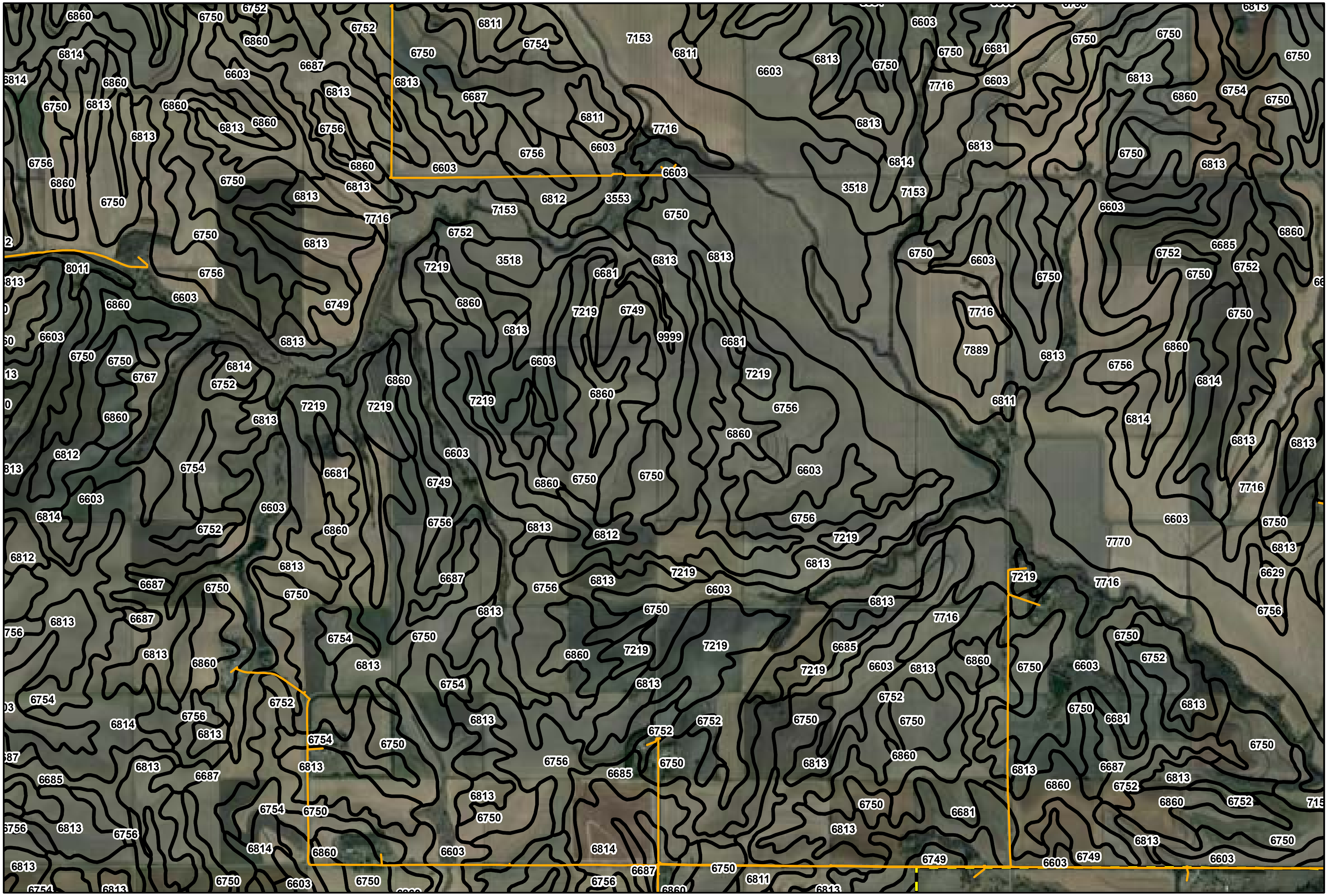
Environmental Assessment
Thurston County, Nebraska
Soils Map
Figure 5T

WGS 1984 ARC System Zone 11

Basemap: Google Satellite



0 500 1,000 2,000
Feet
1 " = 2,000 feet

N

Underground Cable Installation
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Figure 5U

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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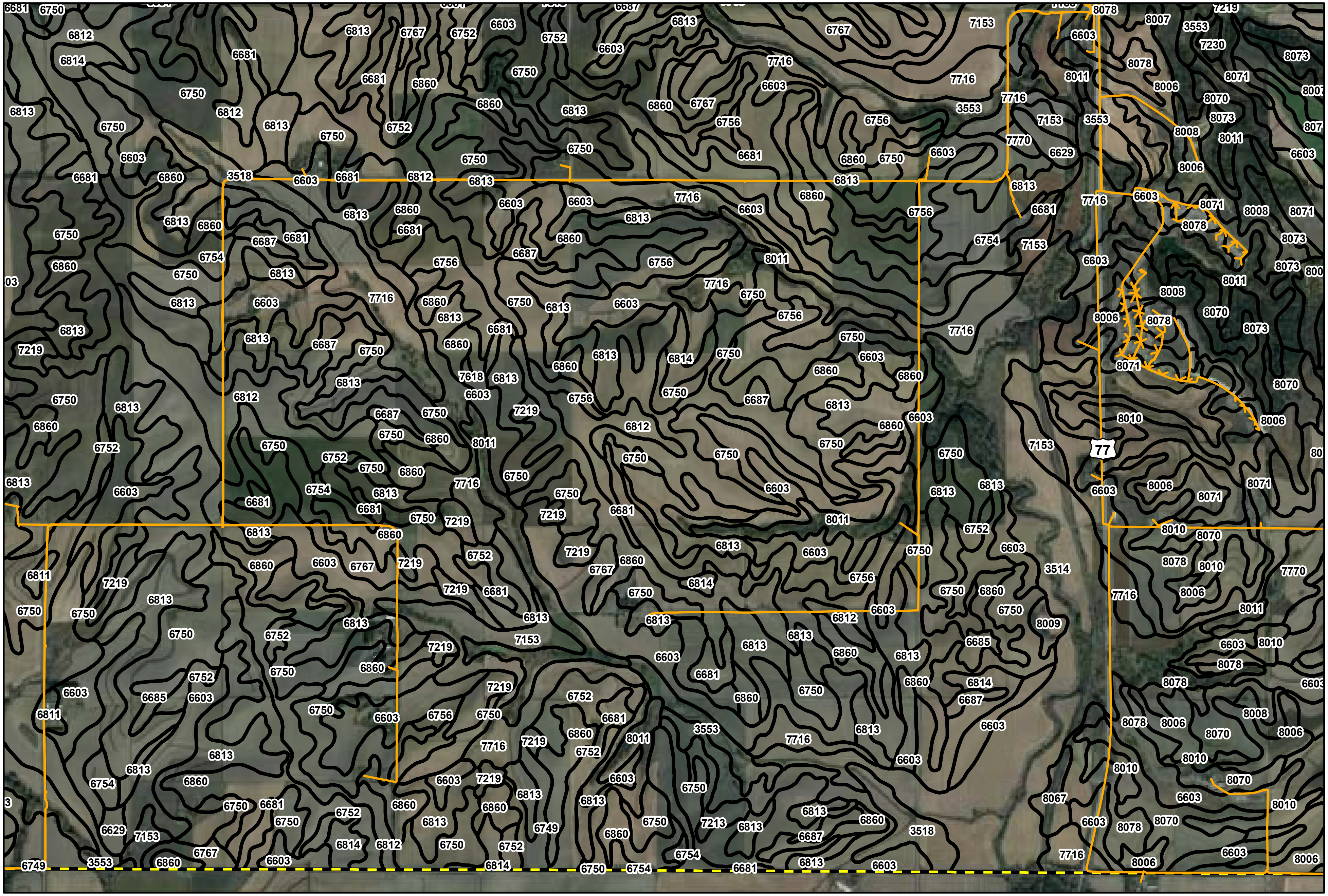


N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

olsson

Underground Cable Installation

Study Area

City Limits

SSURGO Soils

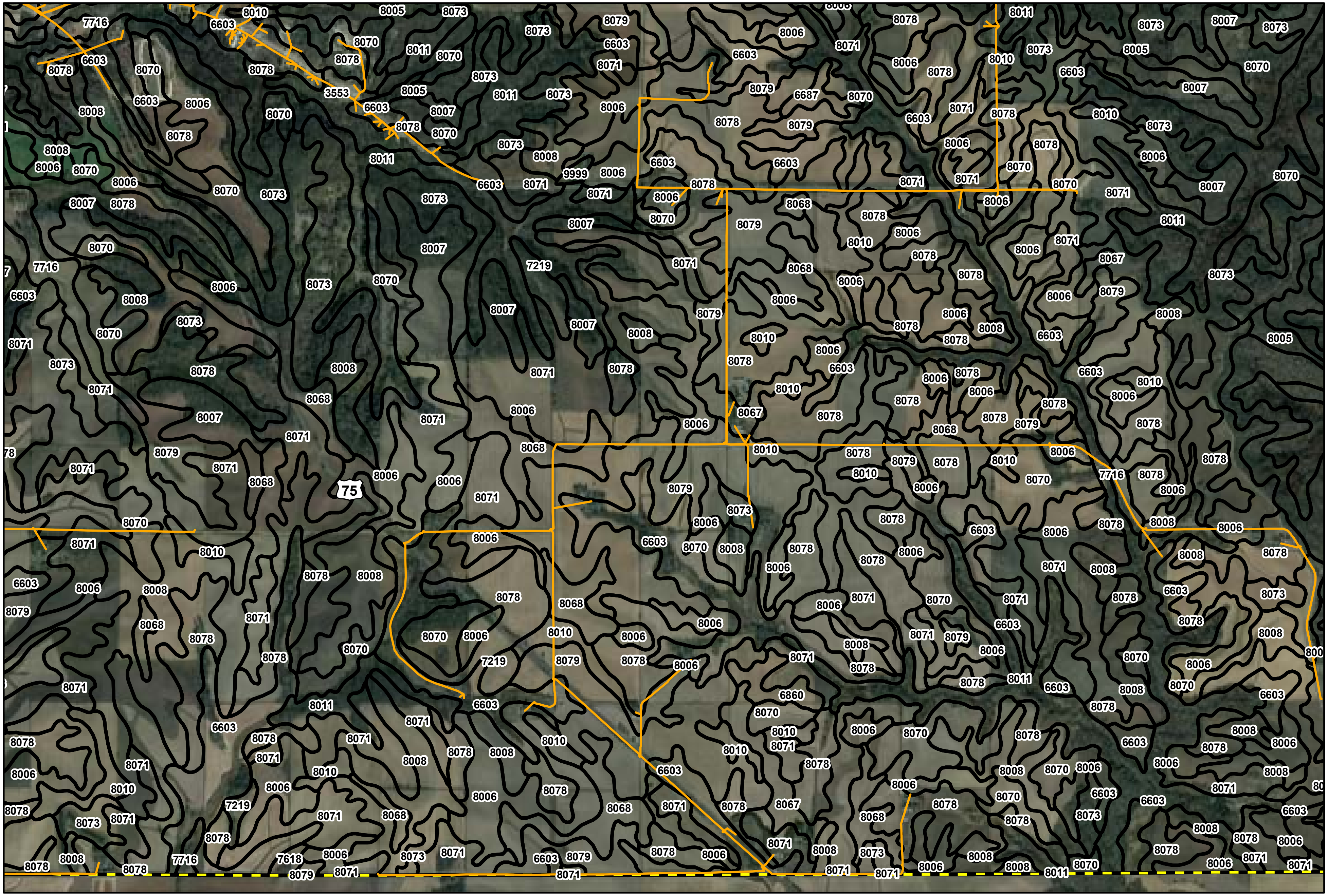
State Boundary

County Boundary

Winnebago Tribe Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
Soils Map
Figure 5V

WGS 1984 ARC System Zone 11

Basemap: Google Satellite



N

0 500 1,000 2,000
Feet
1 " = 2,000 feet

olsson

Underground Cable Installation
Study Area
City Limits
SSURGO Soils
State Boundary
County Boundary

Winnebago Tribe Broadband Connectivity Environmental Assessment
Thurston County, Nebraska
Soils Map
Figure 5W

WGS 1984 ARC System Zone 11
Basemap: Google Satellite

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N
0 500 1,000 2,000
Feet
1 " = 2,000 feet

Underground Cable Installation
Study Area
City Limits
SSURGO Soils
State Boundary
County Boundary

Winnebago Tribe Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
Soils Map
Figure 5X

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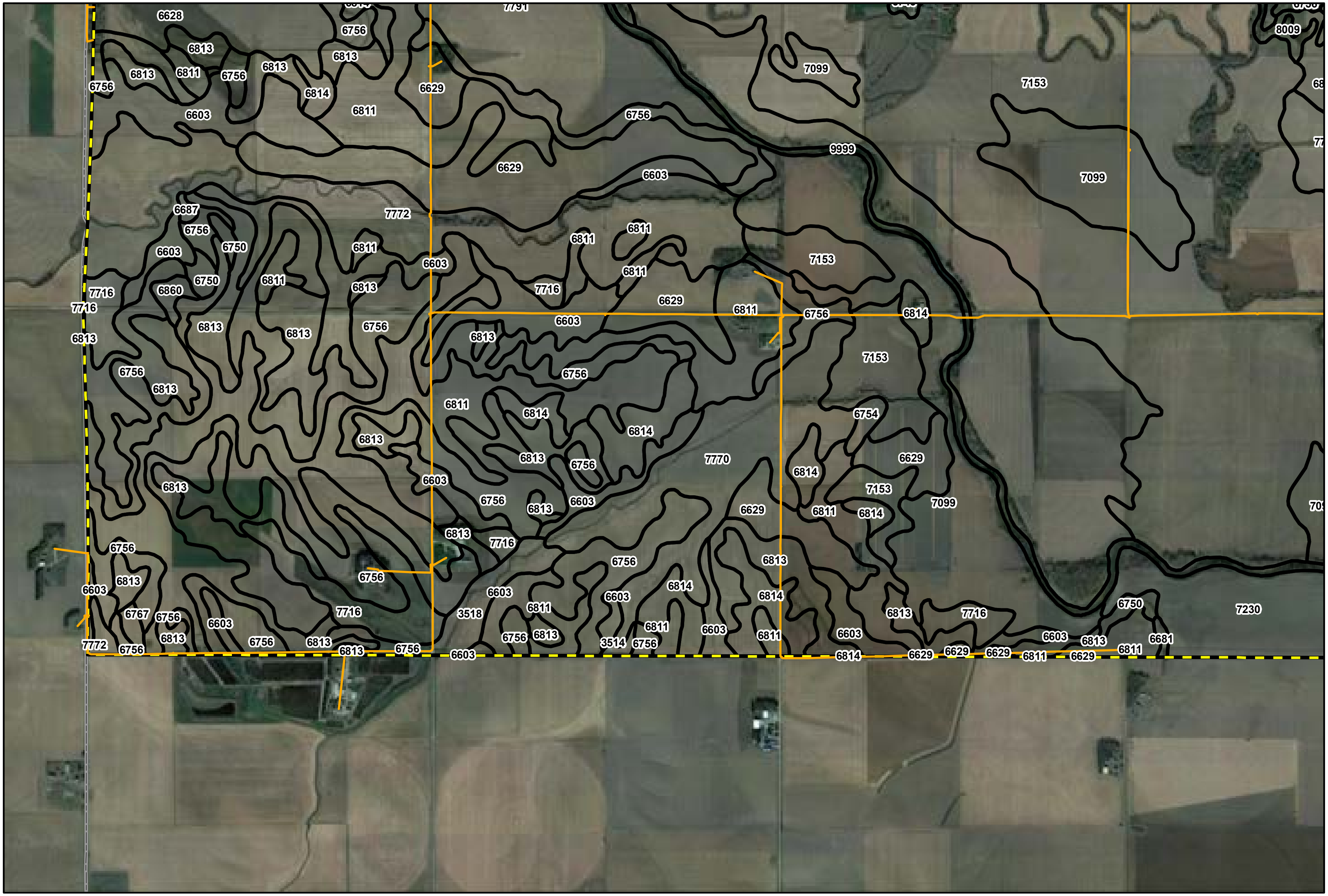
WGS 1984 ARC System Zone 11

Basemap: Google Satellite



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N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

olsson

Underground Cable Installation

Study Area

City Limits

SSURGO Soils

State Boundary

County Boundary

Winnebago Tribe Broadband Connectivity Environmental Assessment

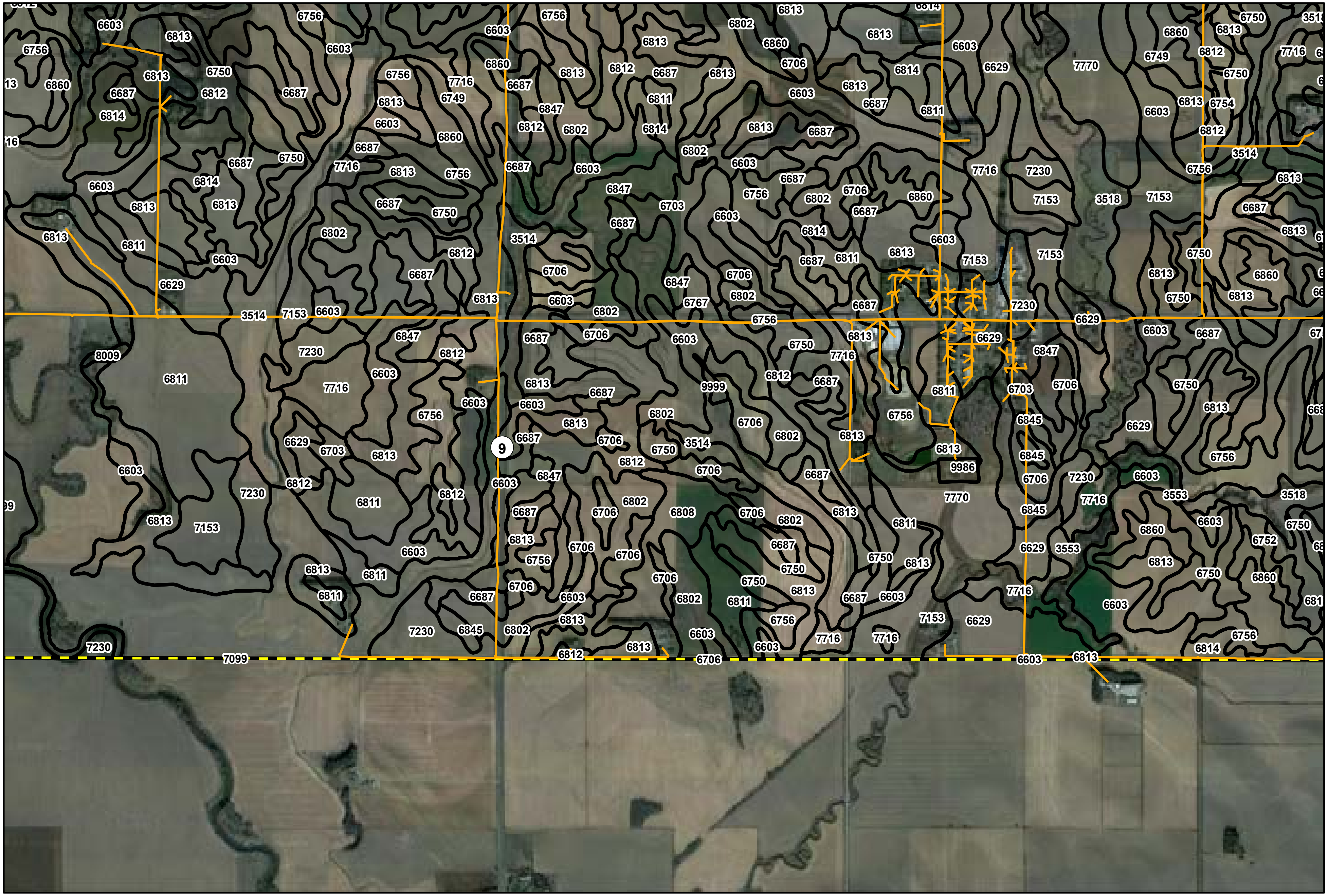
Thurston and Wayne Counties, Nebraska

Soils Map

Figure 5Y

WGS 1984 ARC System Zone 11

Basemap: Google Satellite



Underground Cable Installation

Study Area

City Limits

SSURGO Soils

State Boundary

County Boundary

N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

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Winnebago Tribe Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
Soils Map
Figure 5Z

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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N

0 500 1,000 2,000

Feet

1 " = 2,000 feet

Underground Cable Installation

Study Area

City Limits

SSURGO Soils

State Boundary

County Boundary

Winnebago Tribe Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
Soils Map
Figure 5AA

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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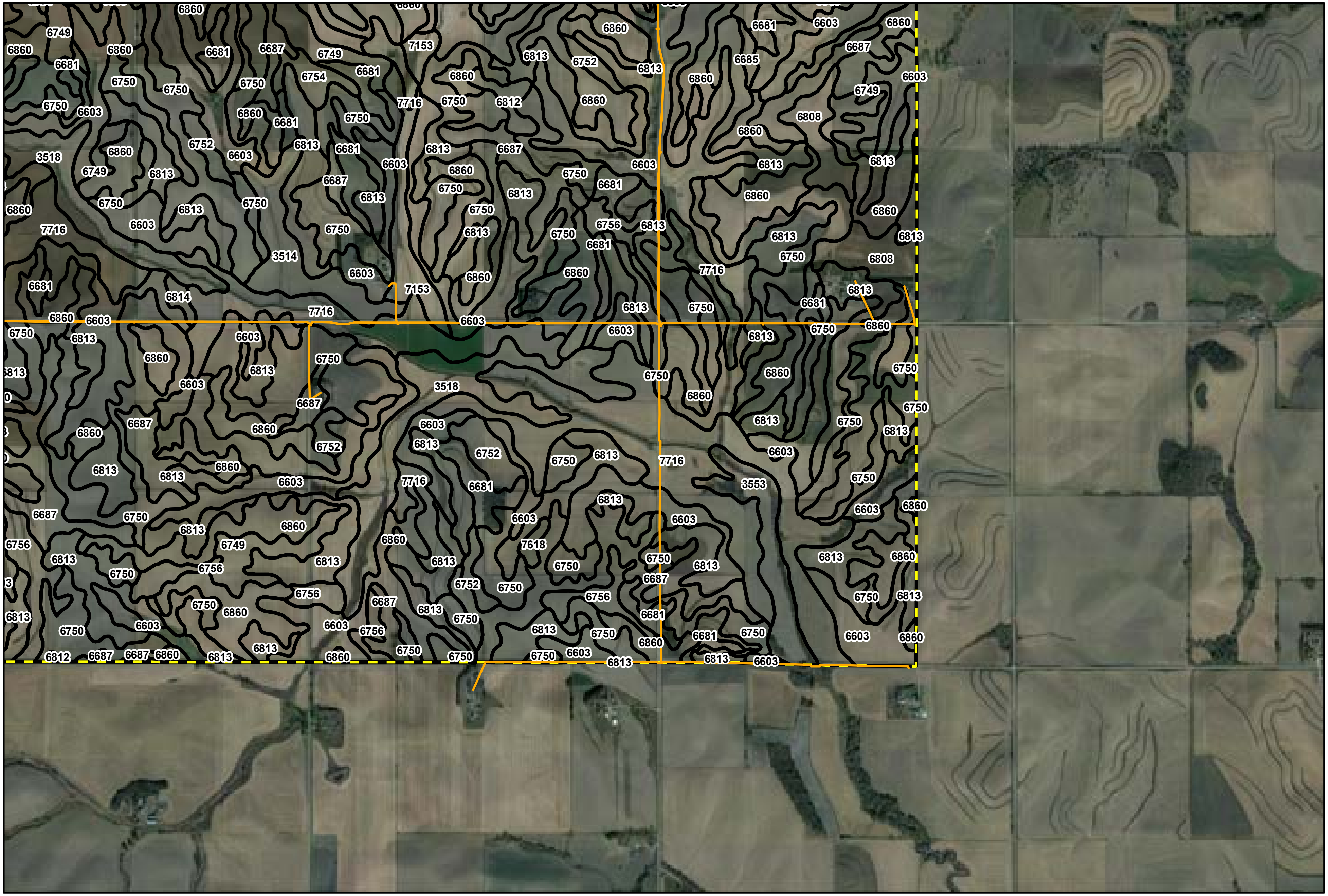


N

0 500 1,000 2,000

Feet

1 " = 2,000 feet

olsson

Underground Cable Installation

Study Area

City Limits

SSURGO Soils

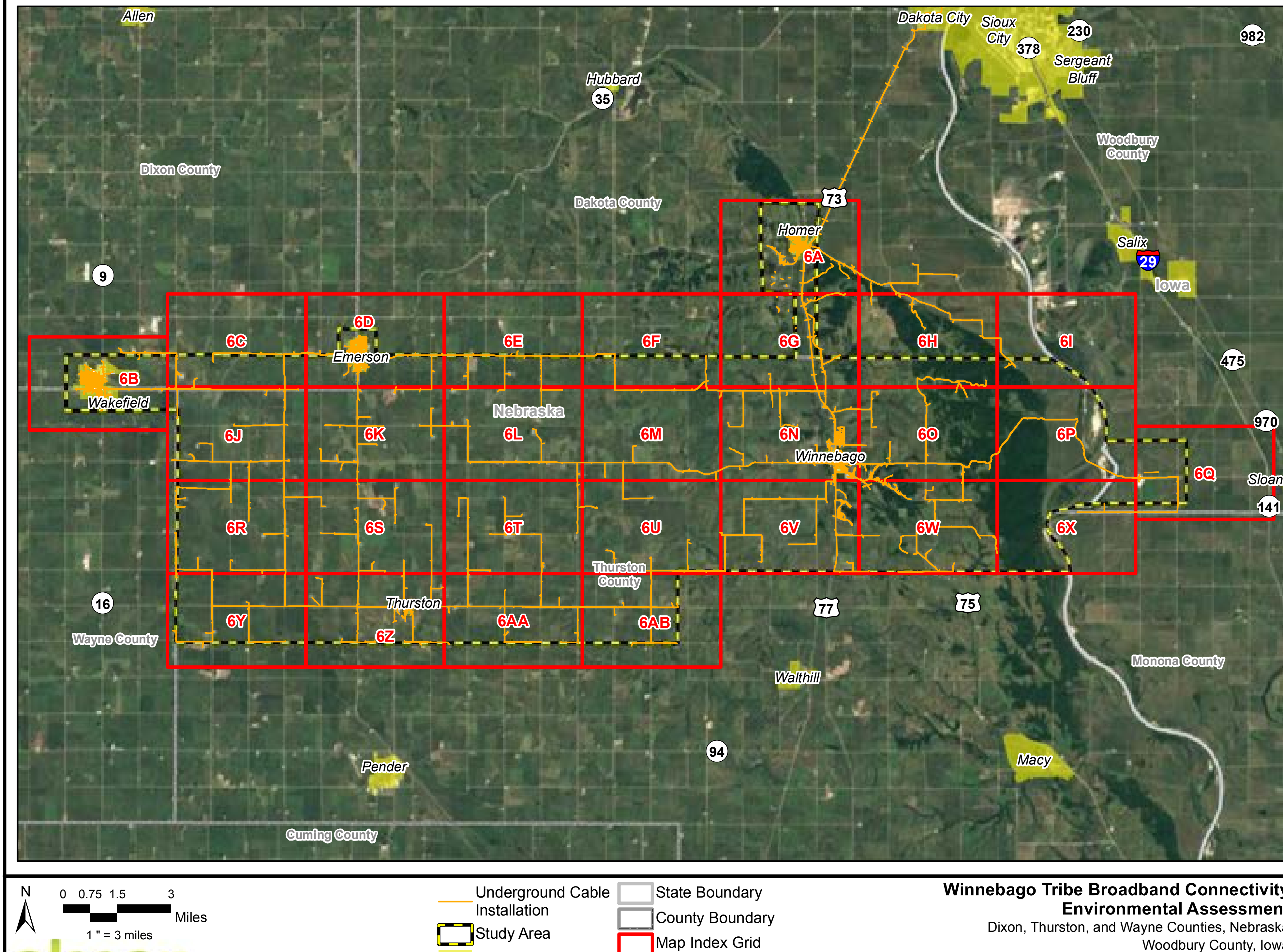
State Boundary

County Boundary

Winnebago Tribe Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
Soils Map
Figure 5AB

WGS 1984 ARC System Zone 11

Basemap: Google Satellite



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Winnebago Tribe Broadband Connectivity Environmental Assessment

Dixon, Thurston, and Wayne Counties, Nebraska
Woodbury County, Iowa

NHD and NWI Index

Figure 6

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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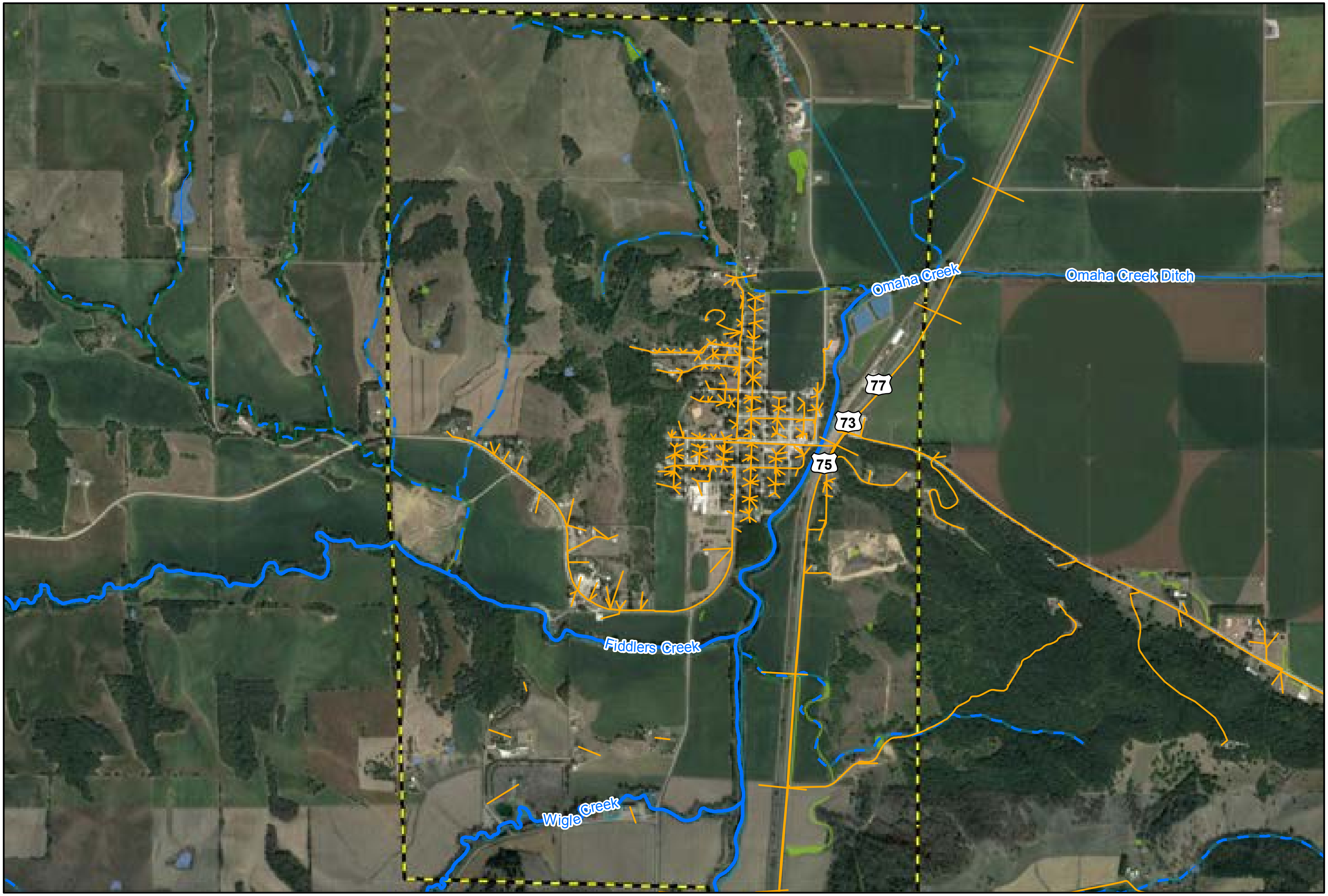

N
0 500 1,000 2,000
Feet
1 " = 2,000 feet

Study Area
City Limits
State Boundary
County Boundary

Stream/River
Ephemeral Stream
Intermittent Stream
Perennial Stream
Other Flowlines

Underground Cable Installation

Wetland Class (NWI)

Freshwater Forested/Shrub Wetland
Freshwater Emergent Wetland
Freshwater Pond
Riverine Habitat
Deepwater Habitat
Other Freshwater Wetland

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Dakota County, Nebraska
NHD and NWI Map
Figure 6A

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

Study Area
City Limits
State Boundary
County Boundary

Stream/River
Ephemeral Stream
Intermittent Stream
Perennial Stream
Other Flowlines

Underground Cable Installation

Wetland Class (NWI)

Freshwater Forested/Shrub Wetland
Freshwater Emergent Wetland
Freshwater Pond
Riverine Habitat
Deepwater Habitat
Other Freshwater Wetland

Winnebago Tribe Broadband Connectivity Environmental Assessment
Dixon and Wayne Counties, Nebraska
NHD and NWI Map
Figure 6B

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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N
0 500 1,000 2,000
Feet
1 " = 2,000 feet

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Study Area
City Limits
State Boundary
County Boundary
Stream/River
Ephemeral Stream
Intermittent Stream
Perennial Stream
Other Flowlines
Underground Cable Installation

Wetland Class (NWI)

Freshwater Forested/Shrub Wetland
Freshwater Emergent Wetland
Freshwater Pond
Riverine Habitat
Deepwater Habitat
Other Freshwater Wetland

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Dixon County, Nebraska
NHD and NWI Map
Figure 6C

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Dakota, Dixon and Thurston
Counties, Nebraska
NHD and NWI Map
Figure 6D

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

olsson

- Study Area
- City Limits
- State Boundary
- County Boundary
- Stream/River
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Other Flowlines
- Underground Cable Installation

Wetland Class (NWI)

- Freshwater Forested/Shrub Wetland
- Freshwater Emergent Wetland
- Freshwater Pond
- Riverine Habitat
- Deepwater Habitat
- Other Freshwater Wetland

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Dakota and Thurston
Counties, Nebraska
NHD and NWI Map
Figure 6E

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

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Study Area
City Limits
State Boundary
County Boundary

Stream/River
Ephemeral Stream
Intermittent Stream
Perennial Stream
Other Flowlines

Underground Cable Installation

Wetland Class (NWI)

Freshwater Forested/Shrub Wetland
Freshwater Emergent Wetland
Freshwater Pond
Riverine Habitat
Deepwater Habitat
Other Freshwater Wetland

Winnebago Tribe Broadband Connectivity Environmental Assessment
Dakota and Thurston Counties, Nebraska
NHD and NWI Map
Figure 6F

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

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Study Area
City Limits
State Boundary
County Boundary

Stream/River
Ephemeral Stream
Intermittent Stream
Perennial Stream
Other Flowlines

Underground Cable Installation

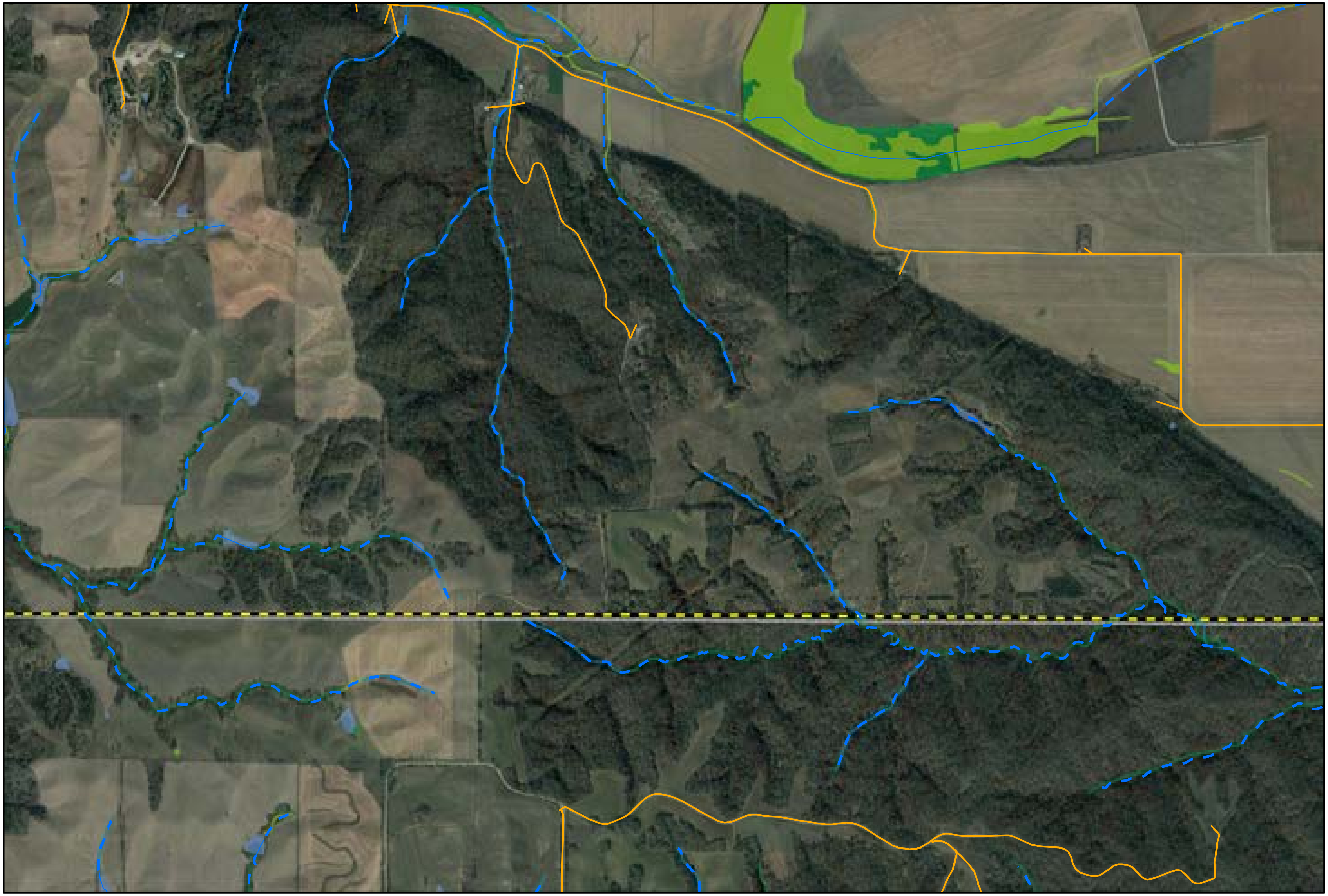
Wetland Class (NWI)

Freshwater Forested/Shrub Wetland
Freshwater Emergent Wetland
Freshwater Pond
Riverine Habitat
Deepwater Habitat
Other Freshwater Wetland

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Dakota and Thurston Counties, Nebraska
NHD and NWI Map
Figure 6G

WGS 1984 ARC System Zone 11

Basemap: Google Satellite



N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

olsson

Study Area
City Limits
State Boundary
County Boundary

Stream/River
Ephemeral Stream
Intermittent Stream
Perennial Stream
Other Flowlines

Underground Cable Installation

Wetland Class (NWI)

Freshwater Forested/Shrub Wetland
Freshwater Emergent Wetland

Freshwater Pond
Riverine Habitat
Deepwater Habitat
Other Freshwater Wetland

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Dakota and Thurston Counties, Nebraska
NHD and NWI Map
Figure 6H

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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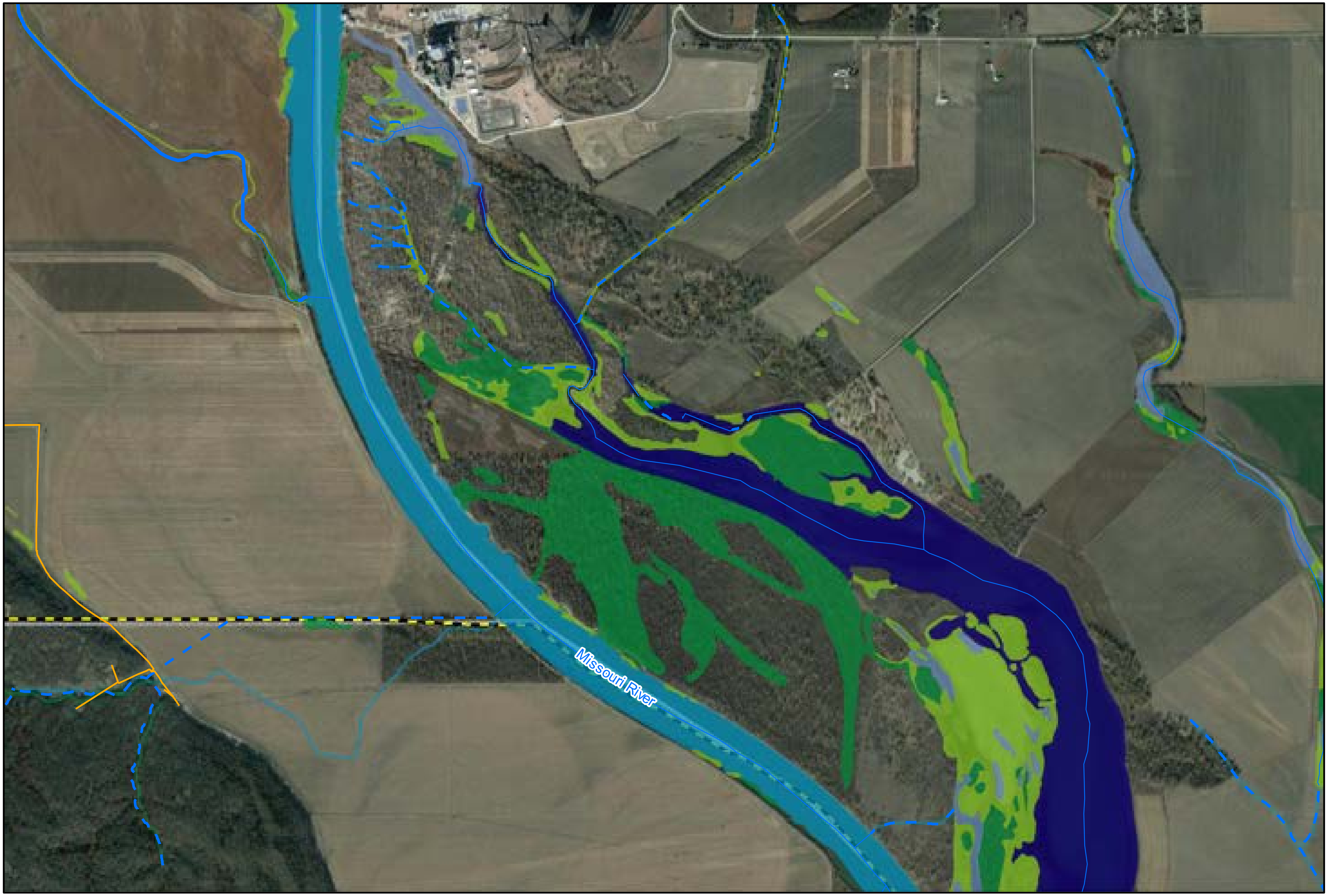

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N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

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Study Area

City Limits

State Boundary

County Boundary

Stream/River

Ephemeral Stream

Intermittent Stream

Perennial Stream

Other Flowlines

Underground Cable Installation

Wetland Class (NWI)

Freshwater Forested/Shrub Wetland

Freshwater Emergent Wetland

Freshwater Pond

Riverine Habitat

Deepwater Habitat

Other Freshwater Wetland

Winnebago Tribe Broadband Connectivity Environmental Assessment

Dakota and Thurston Counties, Nebraska

NHD and NWI Map

Figure 6I

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

olsson

- Study Area
- City Limits
- State Boundary
- County Boundary
- Stream/River
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Other Flowlines
- Underground Cable Installation

Wetland Class (NWI)

- Freshwater Forested/Shrub Wetland
- Freshwater Emergent Wetland
- Freshwater Pond
- Riverine Habitat
- Deepwater Habitat
- Other Freshwater Wetland

Winnebago Tribe Broadband Connectivity Environmental Assessment

Dixon, Thurston and Wayne Counties, Nebraska

NHD and NWI Map

Figure 6J

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

- Study Area
- City Limits
- State Boundary
- County Boundary
- Stream/River
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Other Flowlines
- Underground Cable Installation

Wetland Class (NWI)

- Freshwater Forested/Shrub Wetland
- Freshwater Emergent Wetland
- Freshwater Pond
- Riverine Habitat
- Deepwater Habitat
- Other Freshwater Wetland

Winnebago Tribe Broadband Connectivity Environmental Assessment

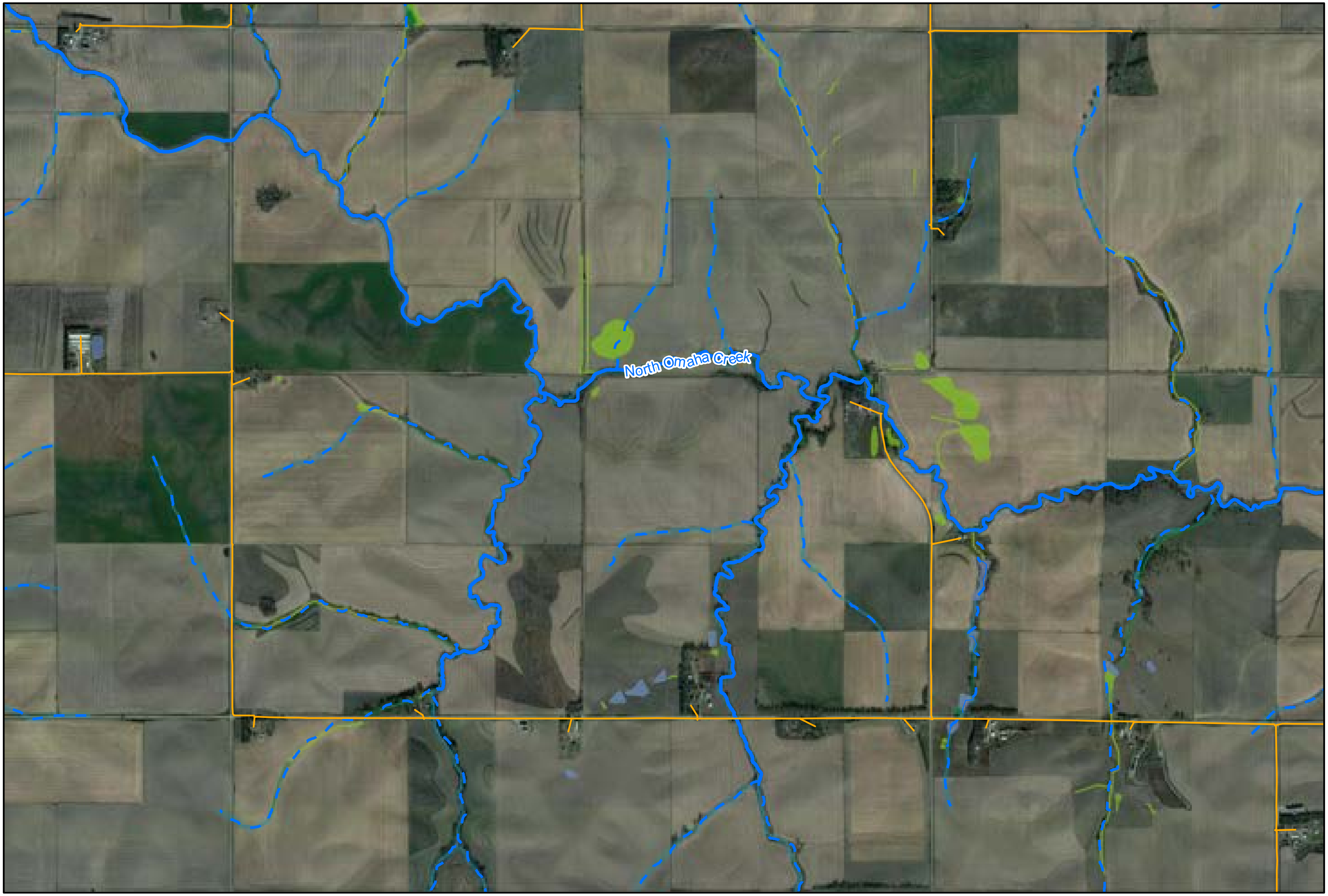
Dixon and Thurston Counties, Nebraska

NHD and NWI Map

Figure 6K

WGS 1984 ARC System Zone 11

Basemap: Google Satellite



N

0 500 1,000 2,000
Feet
1 " = 2,000 feet

olsson

Study Area
City Limits
State Boundary
County Boundary
Stream/River
Ephemeral Stream
Intermittent Stream
Perennial Stream
Other Flowlines
Underground Cable Installation

Wetland Class (NWI)

Freshwater Forested/Shrub Wetland
Freshwater Emergent Wetland
Freshwater Pond
Riverine Habitat
Deepwater Habitat
Other Freshwater Wetland

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
NHD and NWI Map
Figure 6L

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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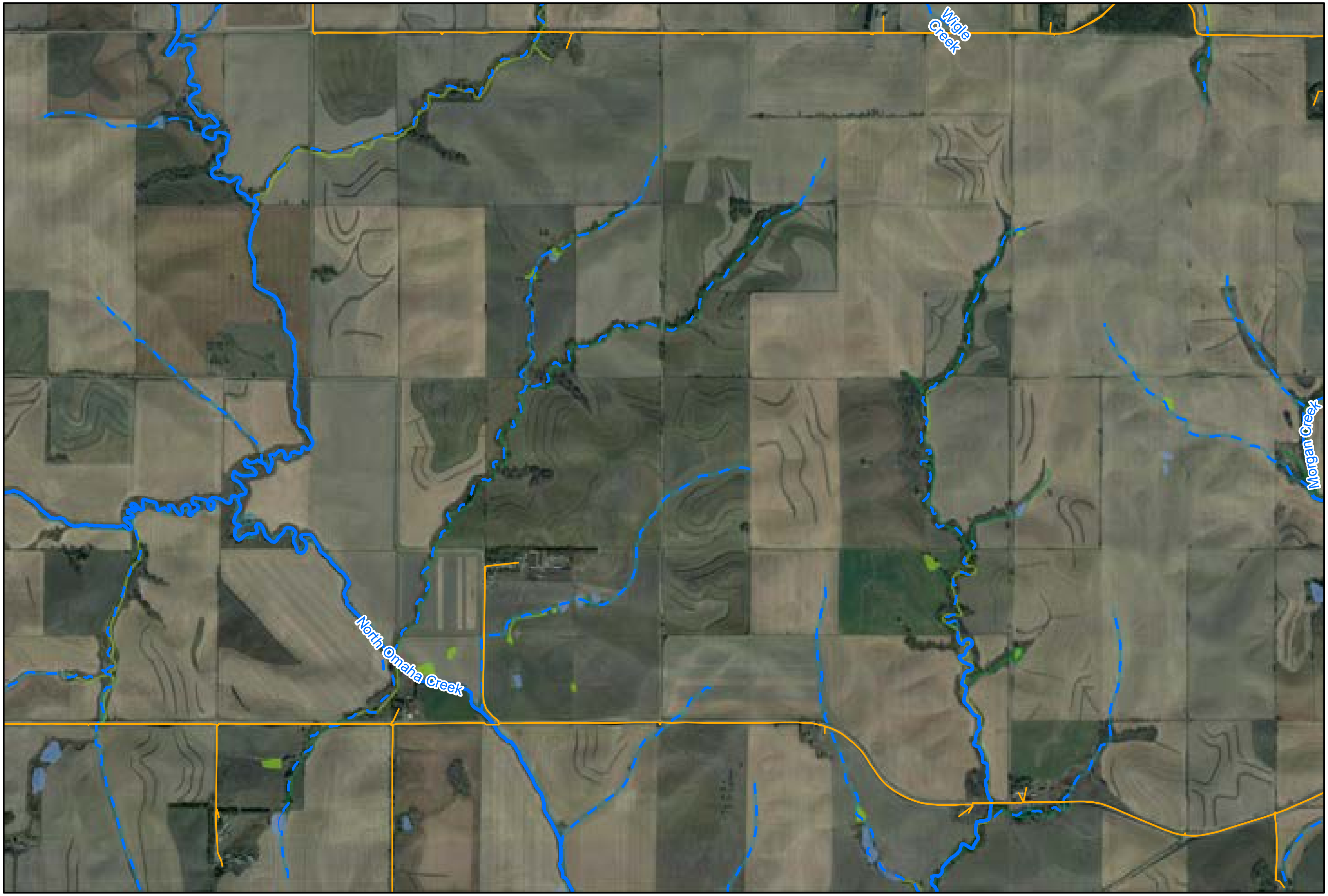

N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

Study Area
City Limits
State Boundary
County Boundary

Stream/River
Ephemeral Stream
Intermittent Stream
Perennial Stream
Other Flowlines

Underground Cable Installation

Wetland Class (NWI)

Freshwater Forested/Shrub Wetland
Freshwater Emergent Wetland
Freshwater Pond
Riverine Habitat
Deepwater Habitat
Other Freshwater Wetland

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
NHD and NWI Map
Figure 6M

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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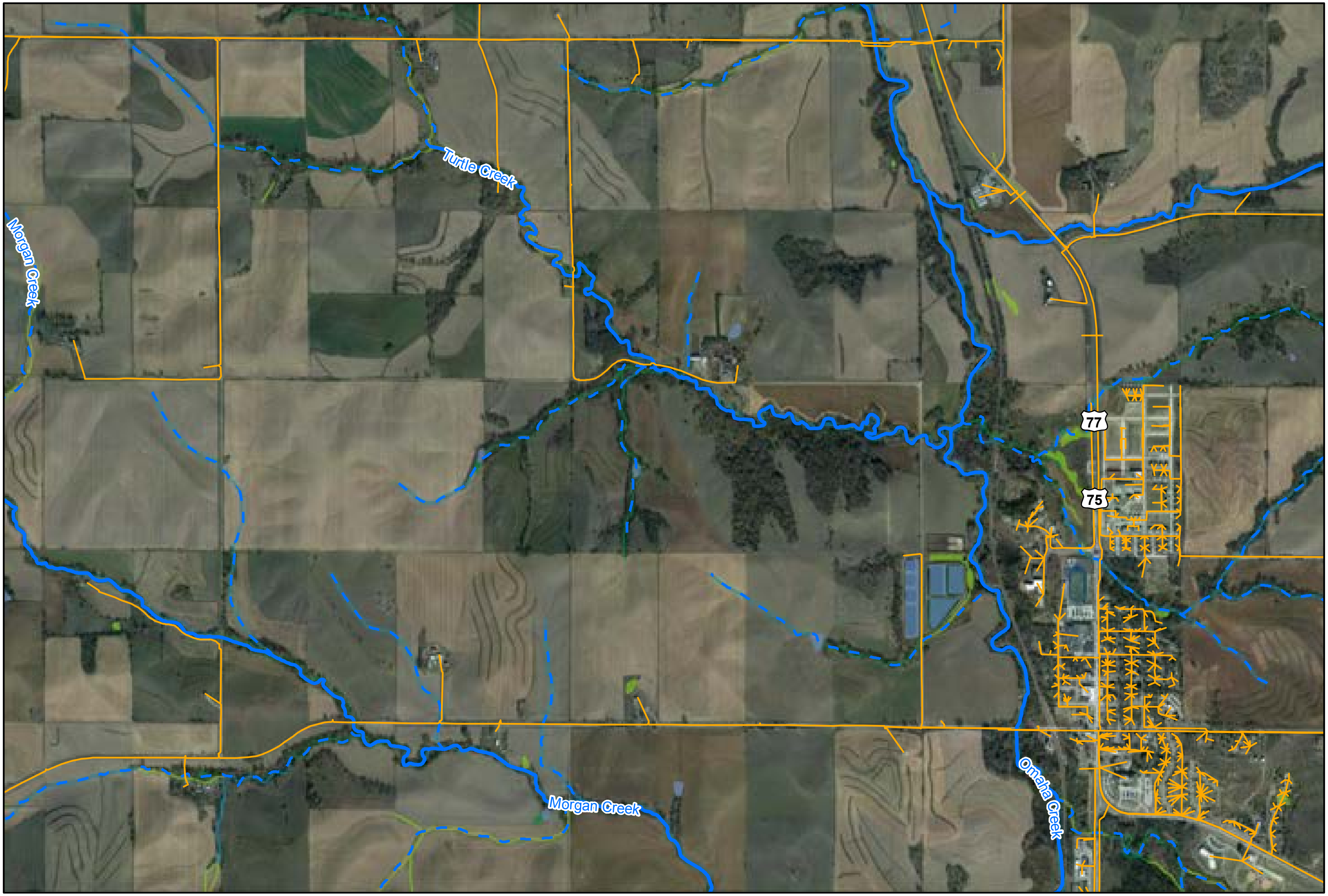

N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

Study Area
City Limits
State Boundary
County Boundary

Stream/River
Ephemeral Stream
Intermittent Stream
Perennial Stream
Other Flowlines

Underground Cable Installation

Wetland Class (NWI)

Freshwater Forested/Shrub Wetland
Freshwater Emergent Wetland
Freshwater Pond
Riverine Habitat
Deepwater Habitat
Other Freshwater Wetland

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
NHD and NWI Map
Figure 6N

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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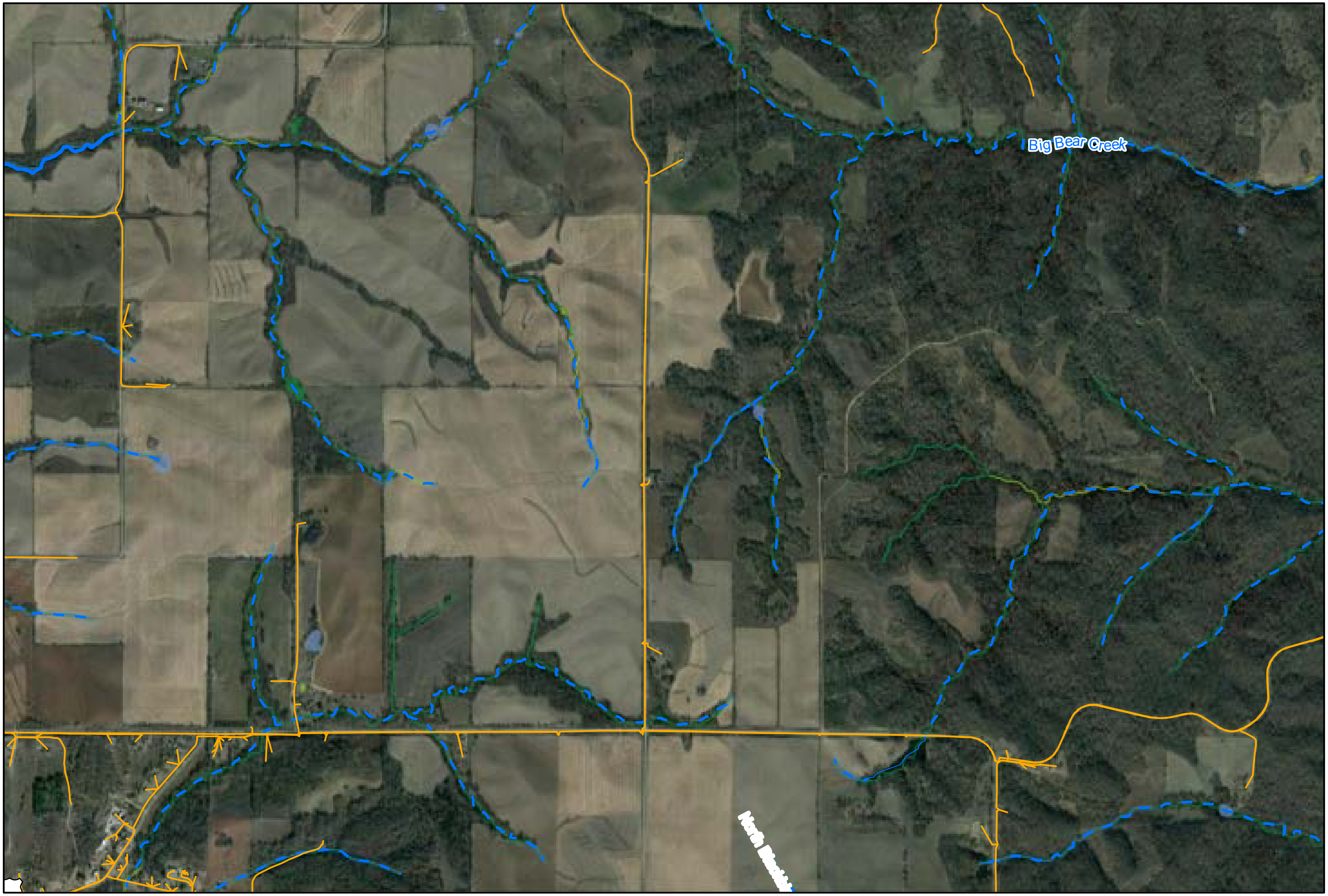

N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

olsson

Study Area

City Limits

State Boundary

County Boundary

Stream/River

Ephemeral Stream

Intermittent Stream

Perennial Stream

Other Flowlines

Underground Cable Installation

Wetland Class (NWI)

Freshwater Forested/Shrub Wetland

Freshwater Emergent Wetland

Freshwater Pond

Riverine Habitat

Deepwater Habitat

Other Freshwater Wetland

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
NHD and NWI Map
Figure 6O

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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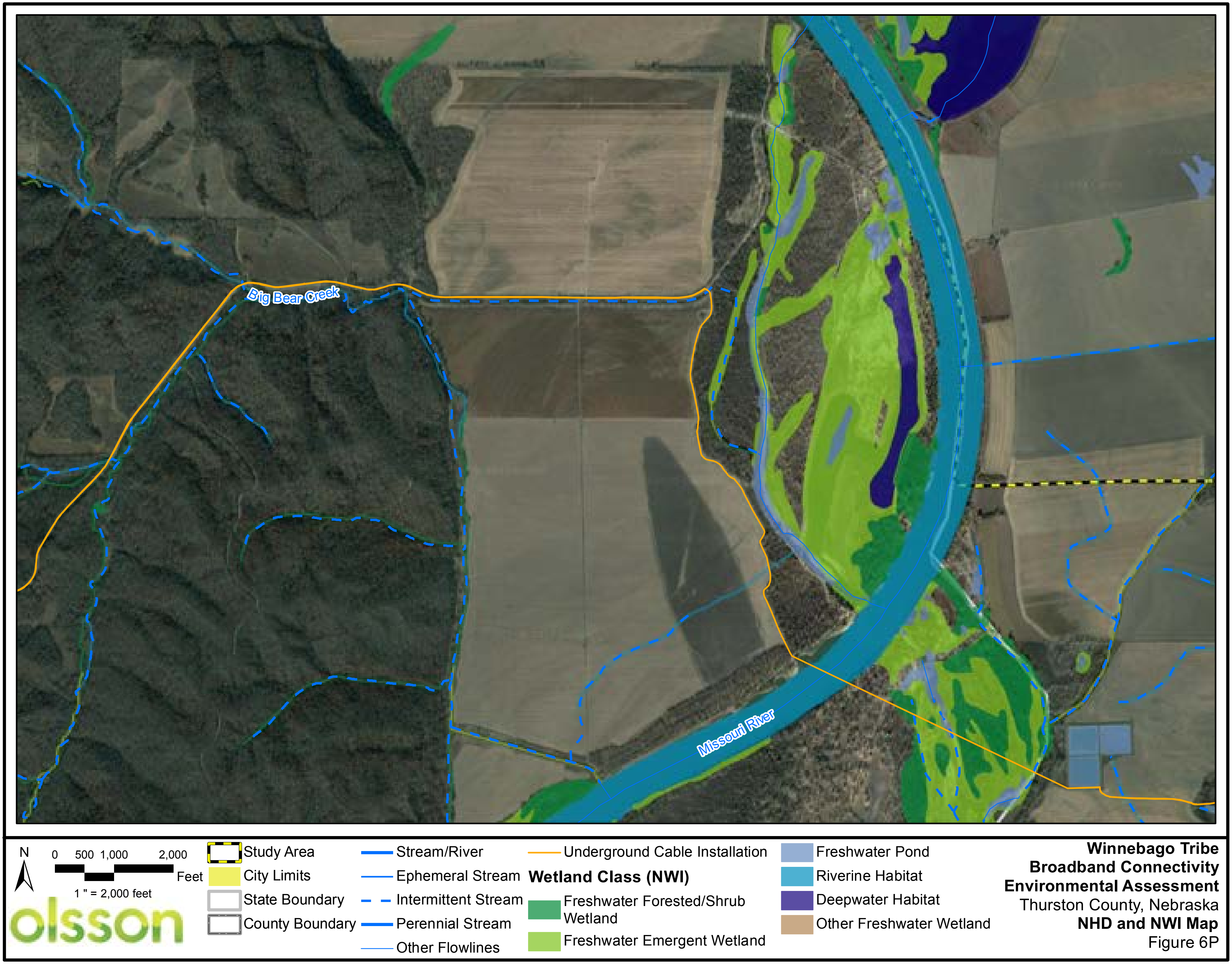

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
NHD and NWI Map
Figure 6P

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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N

0 500 1,000 2,000
Feet
1 " = 2,000 feet

olsson

Study Area
City Limits
State Boundary
County Boundary

Stream/River
Ephemeral Stream
Intermittent Stream
Perennial Stream
Other Flowlines

Underground Cable Installation

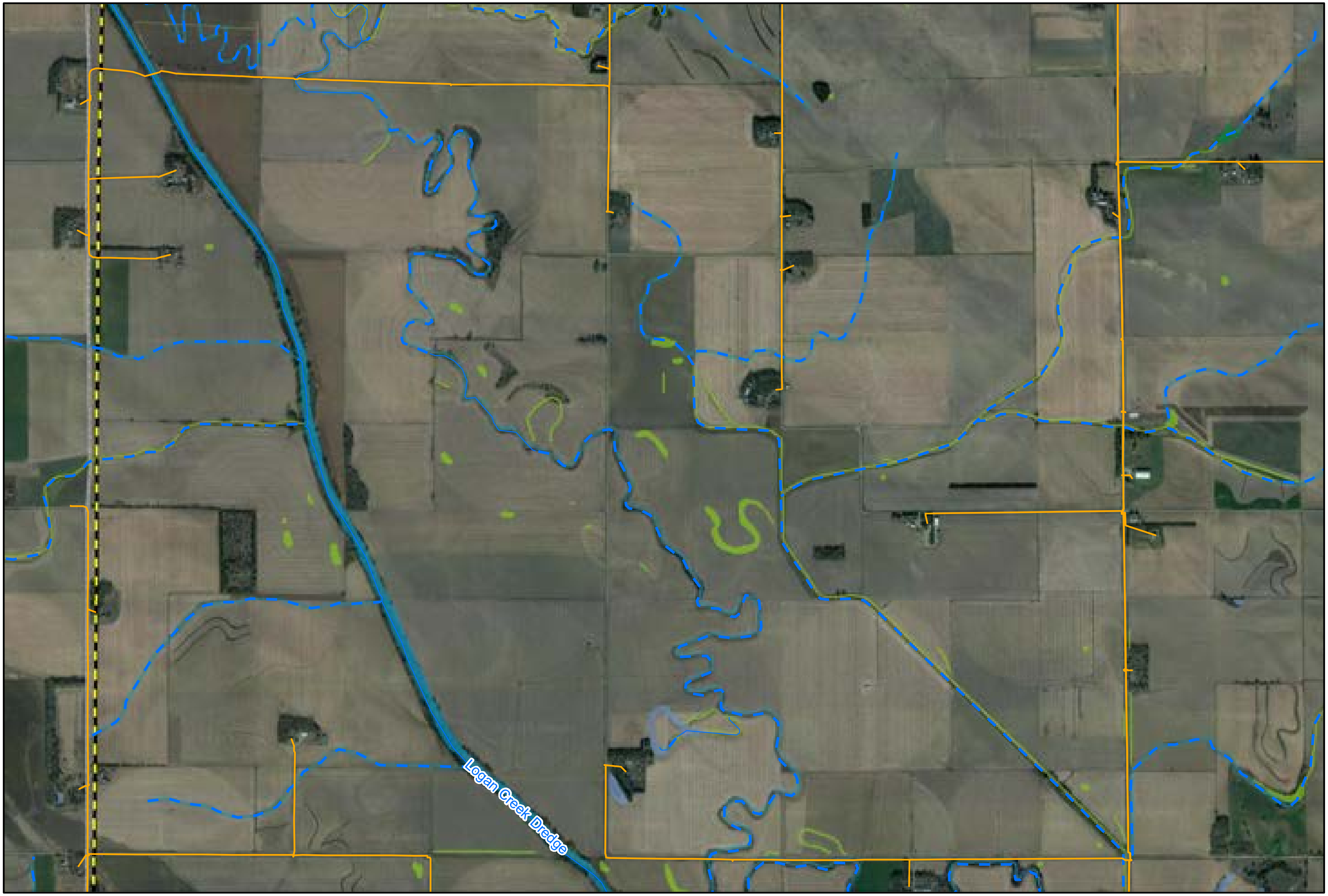
Wetland Class (NWI)

Freshwater Forested/Shrub Wetland
Freshwater Emergent Wetland
Freshwater Pond
Riverine Habitat
Deepwater Habitat
Other Freshwater Wetland

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Woodbury County, Iowa
NHD and NWI Map
Figure 6Q

WGS 1984 ARC System Zone 11

Basemap: Google Satellite



N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

olsson

Study Area
City Limits
State Boundary
County Boundary

Stream/River
Ephemeral Stream
Intermittent Stream
Perennial Stream
Other Flowlines

Underground Cable Installation

Wetland Class (NWI)

Freshwater Forested/Shrub Wetland
Freshwater Emergent Wetland
Freshwater Pond
Riverine Habitat
Deepwater Habitat
Other Freshwater Wetland

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston and Wayne
Counties, Nebraska
NHD and NWI Map
Figure 6R

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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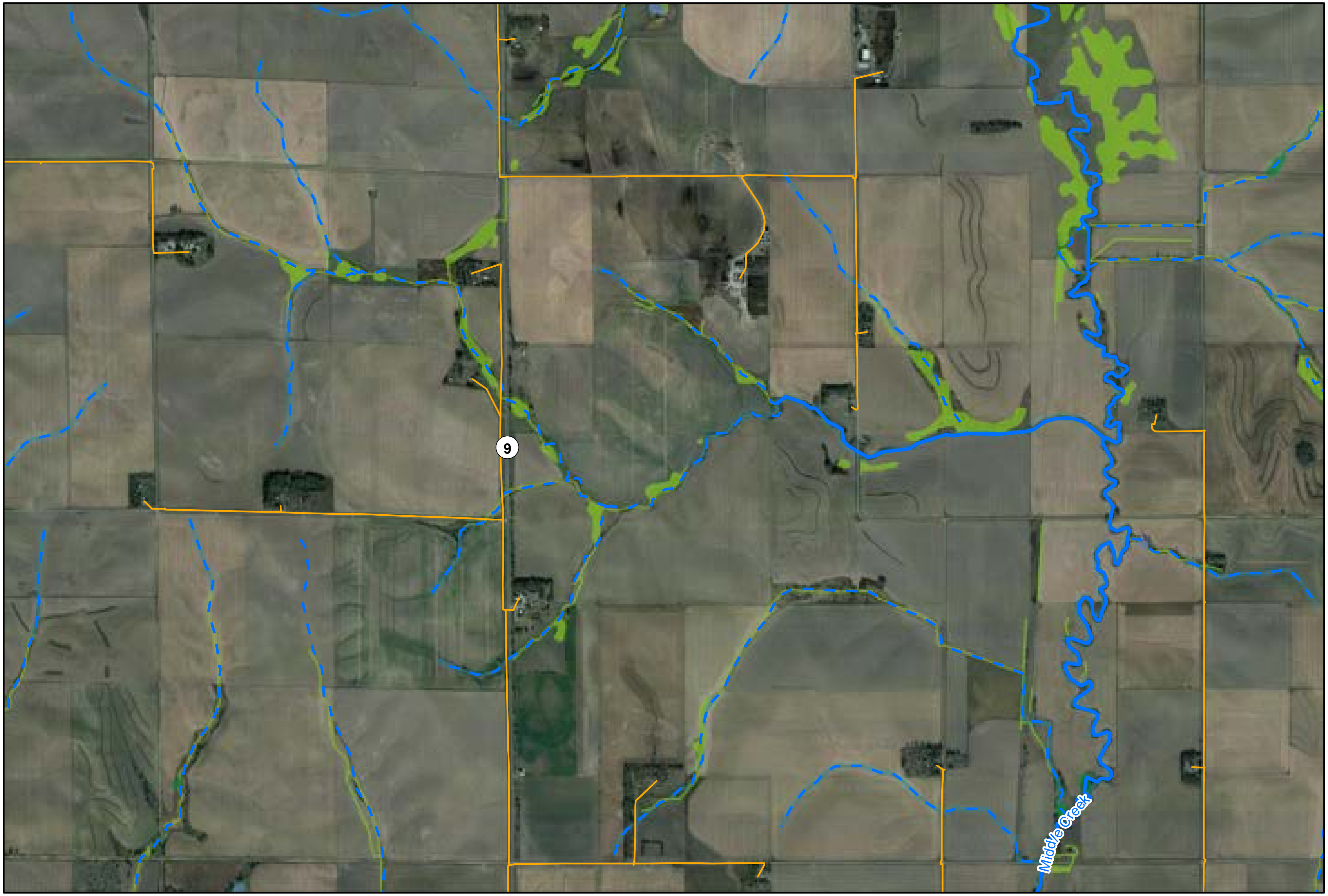

N

0 500 1,000 2,000
Feet

1 " = 2,000 feet

Study Area
City Limits
State Boundary
County Boundary

Stream/River
Ephemeral Stream
Intermittent Stream
Perennial Stream
Other Flowlines

Underground Cable Installation

Wetland Class (NWI)

Freshwater Forested/Shrub Wetland
Freshwater Emergent Wetland
Freshwater Pond
Riverine Habitat
Deepwater Habitat
Other Freshwater Wetland

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
NHD and NWI Map
Figure 6S

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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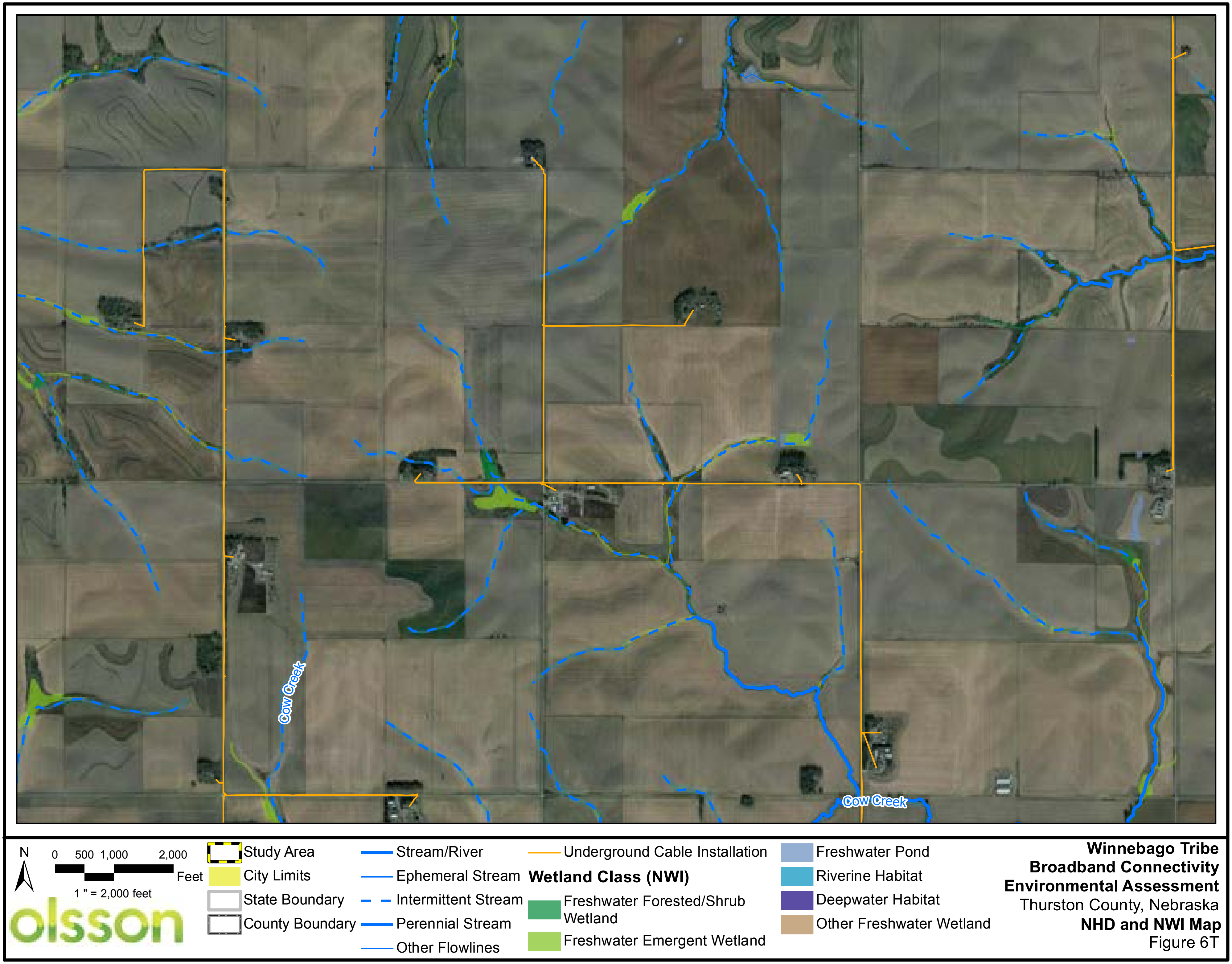

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WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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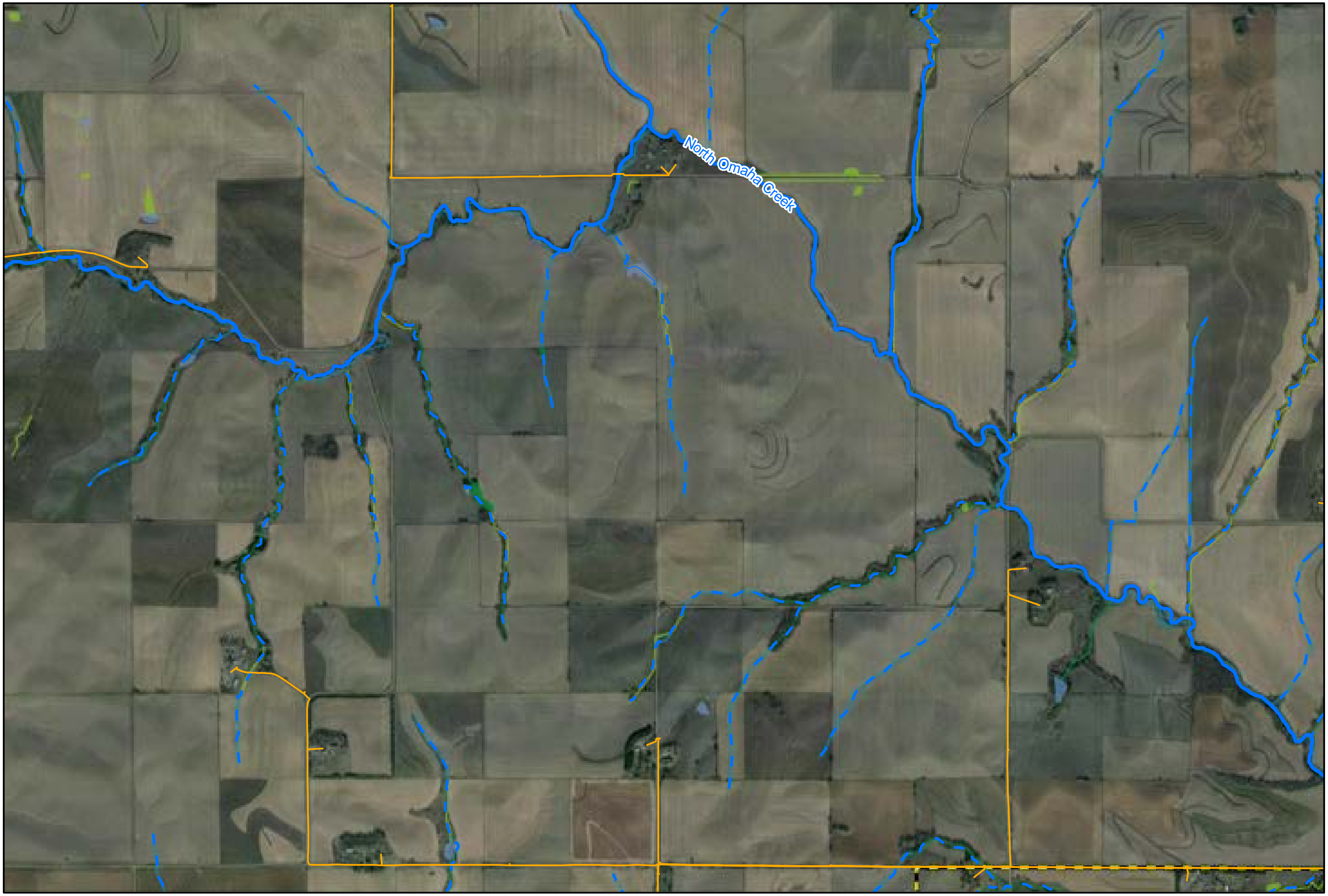

N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

olsson

- Study Area
- City Limits
- State Boundary
- County Boundary
- Stream/River
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Other Flowlines
- Underground Cable Installation

Wetland Class (NWI)

- Freshwater Forested/Shrub Wetland
- Freshwater Emergent Wetland
- Freshwater Pond
- Riverine Habitat
- Deepwater Habitat
- Other Freshwater Wetland

Winnebago Tribe Broadband Connectivity Environmental Assessment

Thurston County, Nebraska

NHD and NWI Map

Figure 6U

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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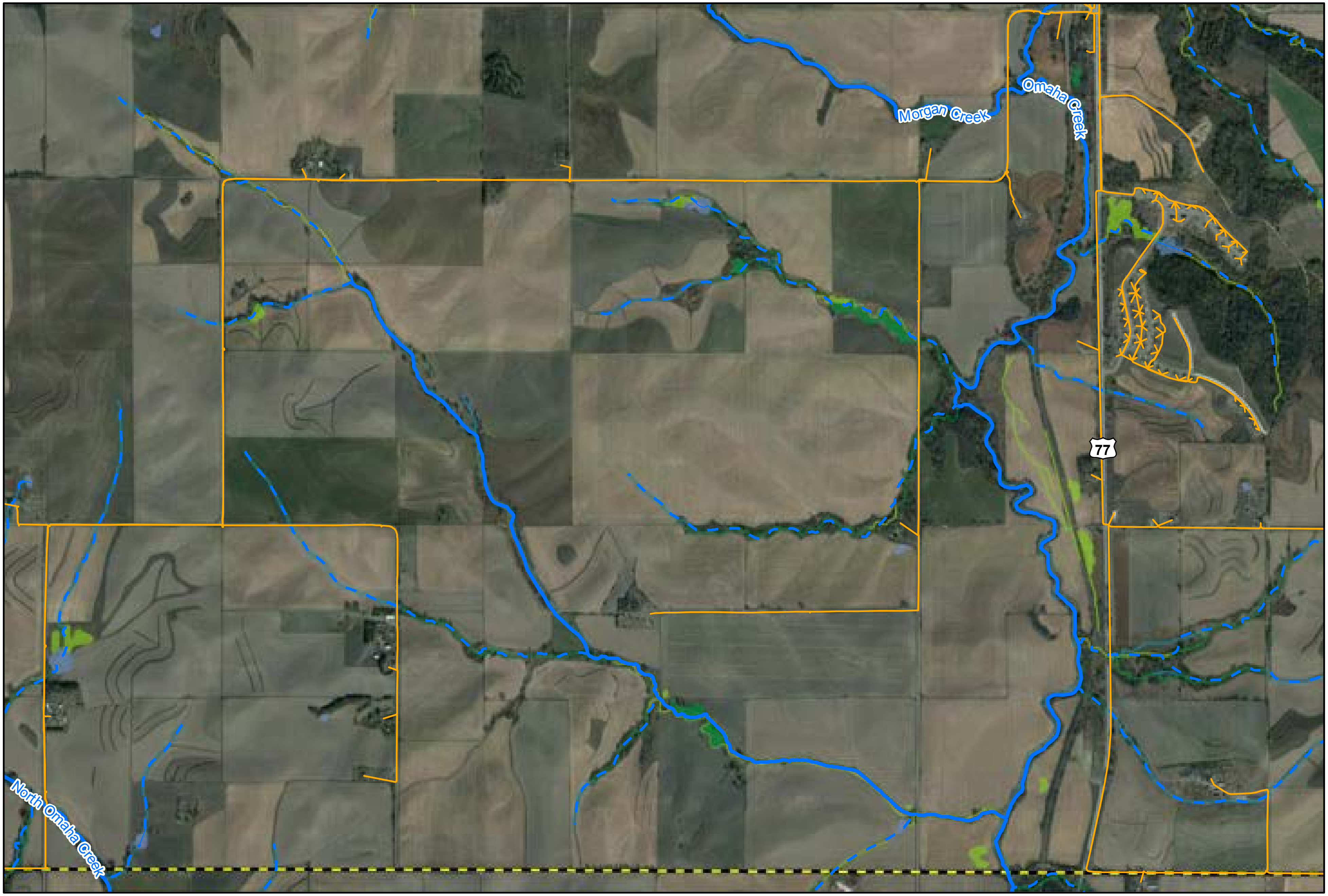


N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

olsson

Study Area
City Limits
State Boundary
County Boundary

Stream/River
Ephemeral Stream
Intermittent Stream
Perennial Stream
Other Flowlines

Underground Cable Installation

Wetland Class (NWI)

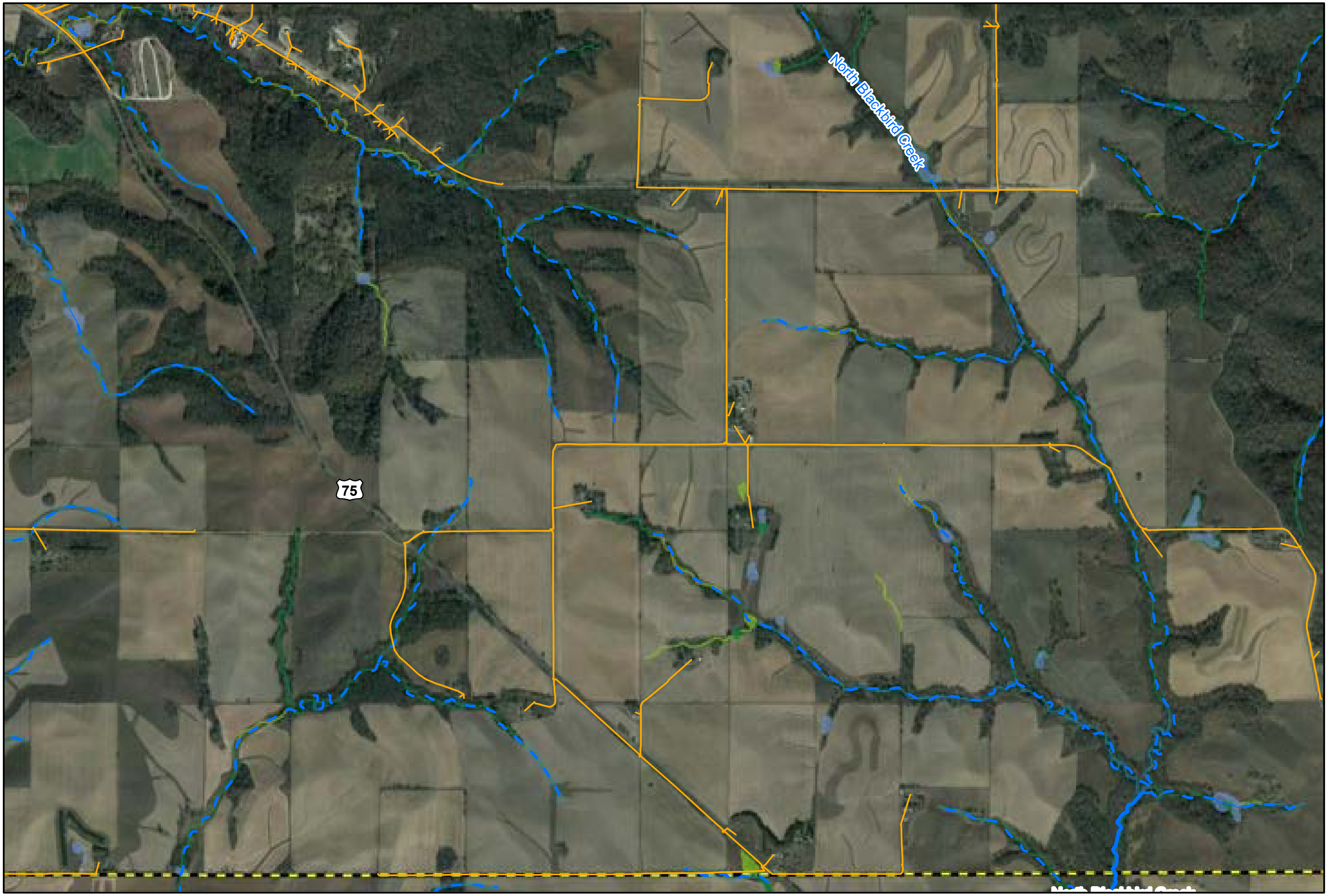
Freshwater Forested/Shrub Wetland
Freshwater Emergent Wetland

Freshwater Pond
Riverine Habitat
Deepwater Habitat
Other Freshwater Wetland

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
NHD and NWI Map
Figure 6V

WGS 1984 ARC System Zone 11

Basemap: Google Satellite



N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

olsson

Study Area
City Limits
State Boundary
County Boundary

Stream/River
Ephemeral Stream
Intermittent Stream
Perennial Stream
Other Flowlines

Underground Cable Installation

Wetland Class (NWI)

Freshwater Forested/Shrub Wetland
Freshwater Emergent Wetland

Freshwater Pond
Riverine Habitat
Deepwater Habitat
Other Freshwater Wetland

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
NHD and NWI Map
Figure 6W

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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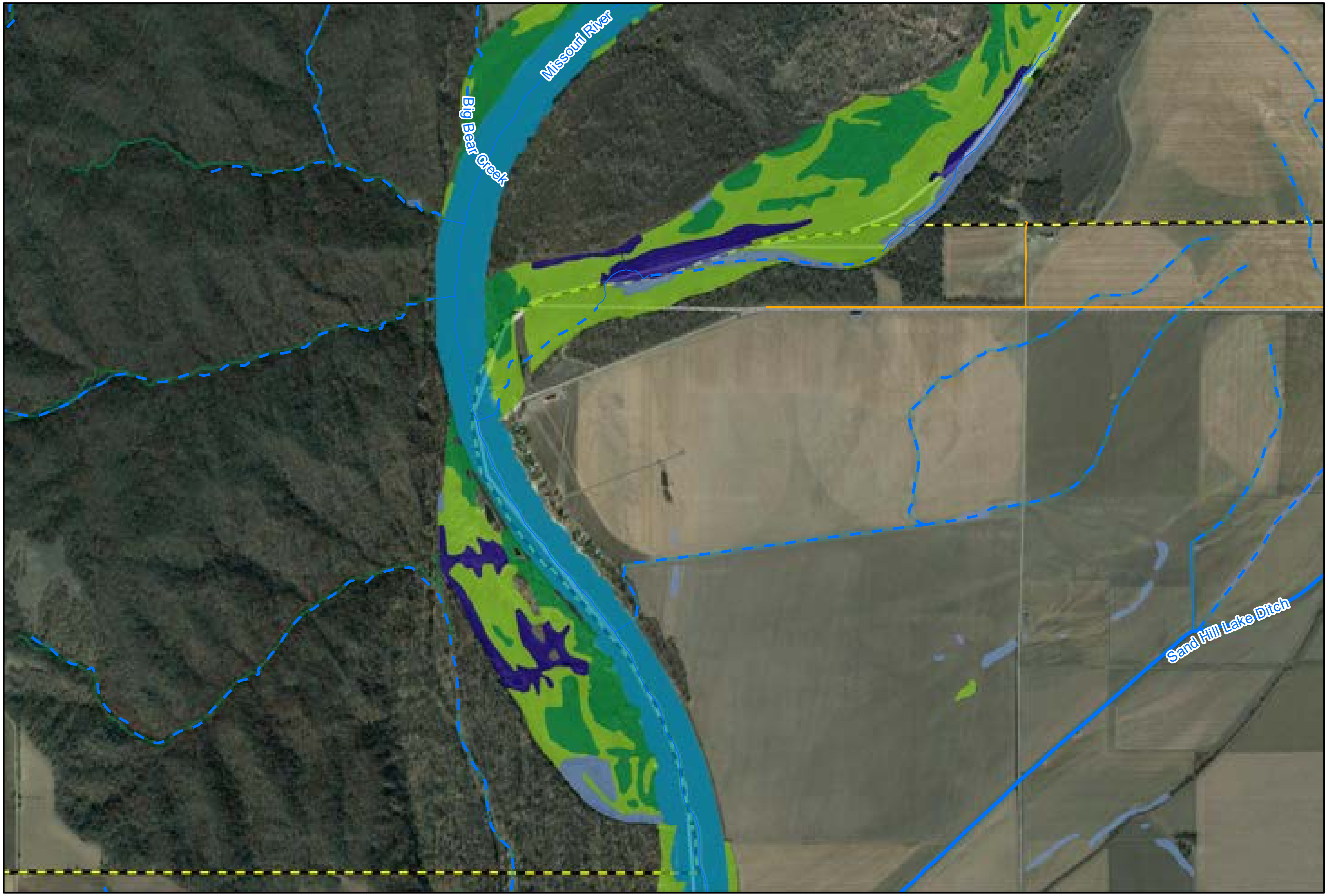

N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

olsson

- Study Area
- City Limits
- State Boundary
- County Boundary
- Stream/River
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Other Flowlines
- Underground Cable Installation

Wetland Class (NWI)

- Freshwater Forested/Shrub Wetland
- Freshwater Emergent Wetland
- Freshwater Pond
- Riverine Habitat
- Deepwater Habitat
- Other Freshwater Wetland

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
NHD and NWI Map
Figure 6X

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

olsson

Study Area
City Limits
State Boundary
County Boundary

Stream/River
Ephemeral Stream
Intermittent Stream
Perennial Stream
Other Flowlines

Underground Cable Installation

Wetland Class (NWI)

Freshwater Forested/Shrub Wetland
Freshwater Emergent Wetland
Freshwater Pond
Riverine Habitat
Deepwater Habitat
Other Freshwater Wetland

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston and Wayne
Counties, Nebraska
NHD and NWI Map
Figure 6Y

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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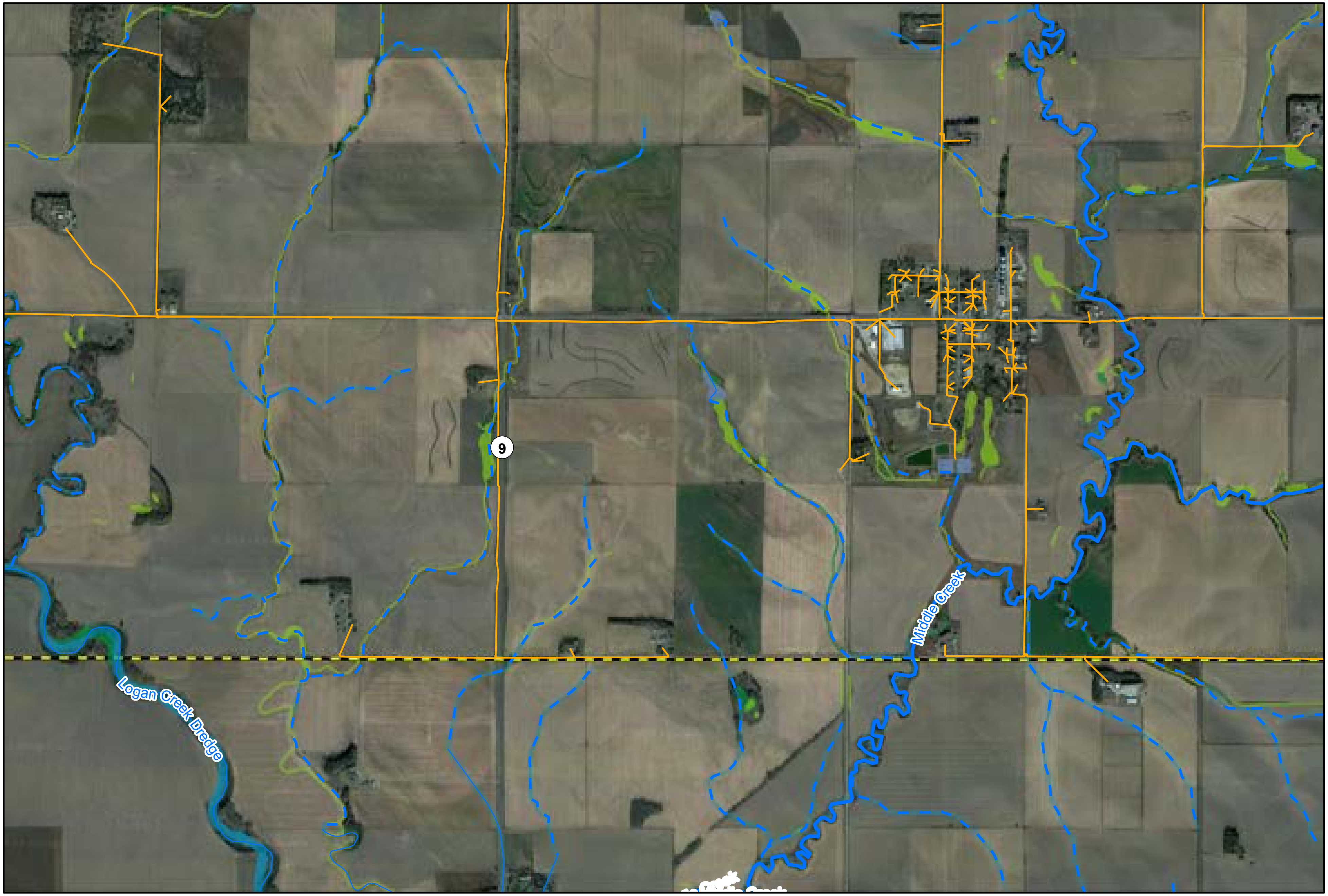

N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

olsson

Study Area
City Limits
State Boundary
County Boundary

Stream/River
Ephemeral Stream
Intermittent Stream
Perennial Stream
Other Flowlines

Underground Cable Installation

Wetland Class (NWI)

Freshwater Forested/Shrub Wetland
Freshwater Emergent Wetland
Freshwater Pond
Riverine Habitat
Deepwater Habitat
Other Freshwater Wetland

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
NHD and NWI Map
Figure 6Z

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

N

0 500 1,000 2,000
Feet
1 " = 2,000 feet

olsson

Study Area
City Limits
State Boundary
County Boundary

Stream/River
Ephemeral Stream
Intermittent Stream
Perennial Stream
Other Flowlines

Underground Cable Installation

Wetland Class (NWI)

Freshwater Forested/Shrub Wetland
Freshwater Emergent Wetland
Freshwater Pond
Riverine Habitat
Deepwater Habitat
Other Freshwater Wetland

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
NHD and NWI Map
Figure 6AA

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

olsson

Study Area
City Limits
State Boundary
County Boundary

Stream/River
Ephemeral Stream
Intermittent Stream
Perennial Stream
Other Flowlines

Underground Cable Installation

Wetland Class (NWI)

Freshwater Forested/Shrub Wetland
Freshwater Emergent Wetland
Freshwater Pond
Riverine Habitat
Deepwater Habitat
Other Freshwater Wetland

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
NHD and NWI Map
Figure 6AB

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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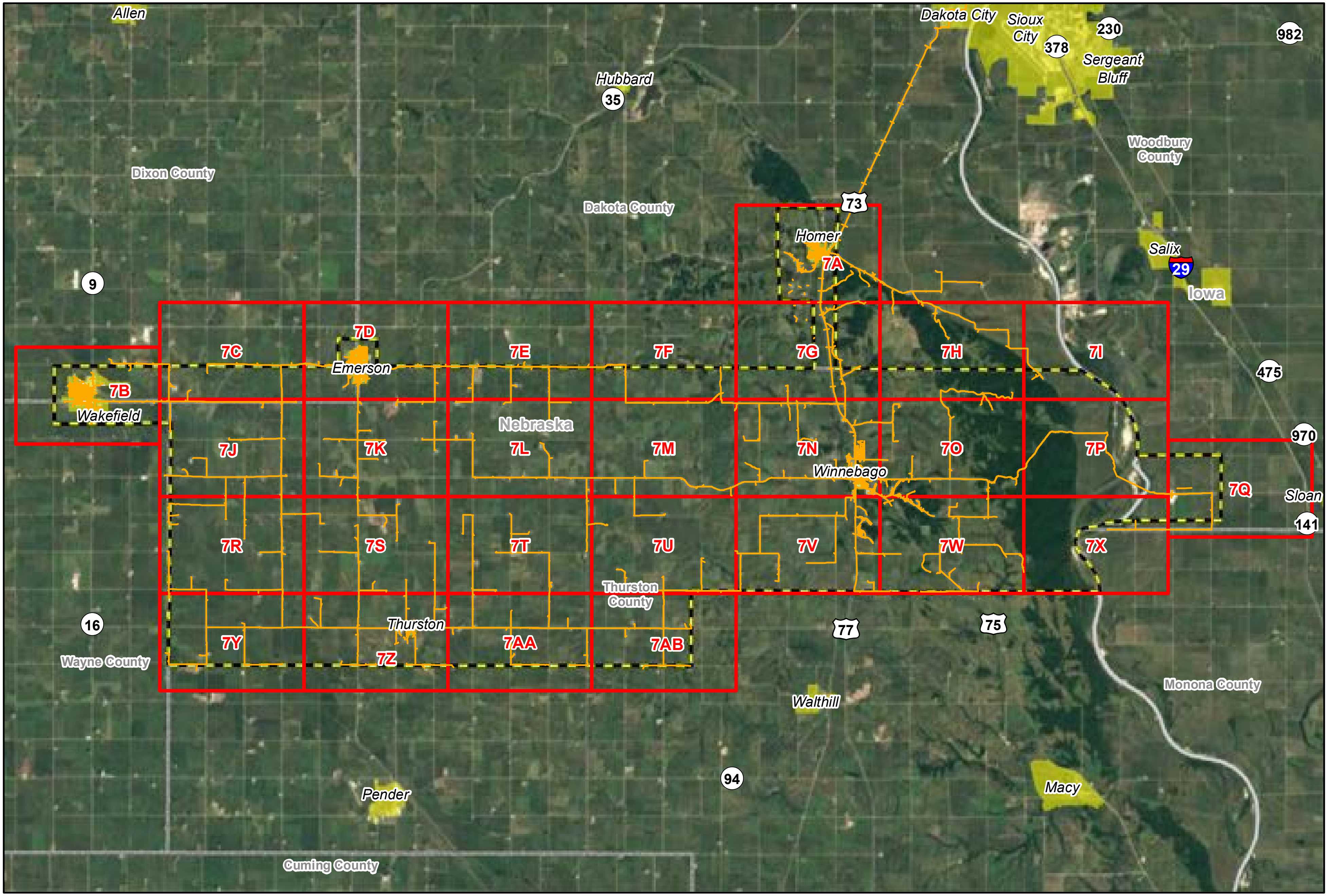

N
0 0.75 1.5 3
Miles
1 " = 3 miles

olsson

Underground Cable Installation
Study Area
City Limits
State Boundary
County Boundary
Map Index Grid

Winnebago Tribe Broadband Connectivity Environmental Assessment
Dixon, Thurston, and Wayne Counties, Nebraska
Woodbury County, Iowa

Floodplain Map Index
Figure 7

WGS 1984 ARC System Zone 11
Basemap: Google Satellite

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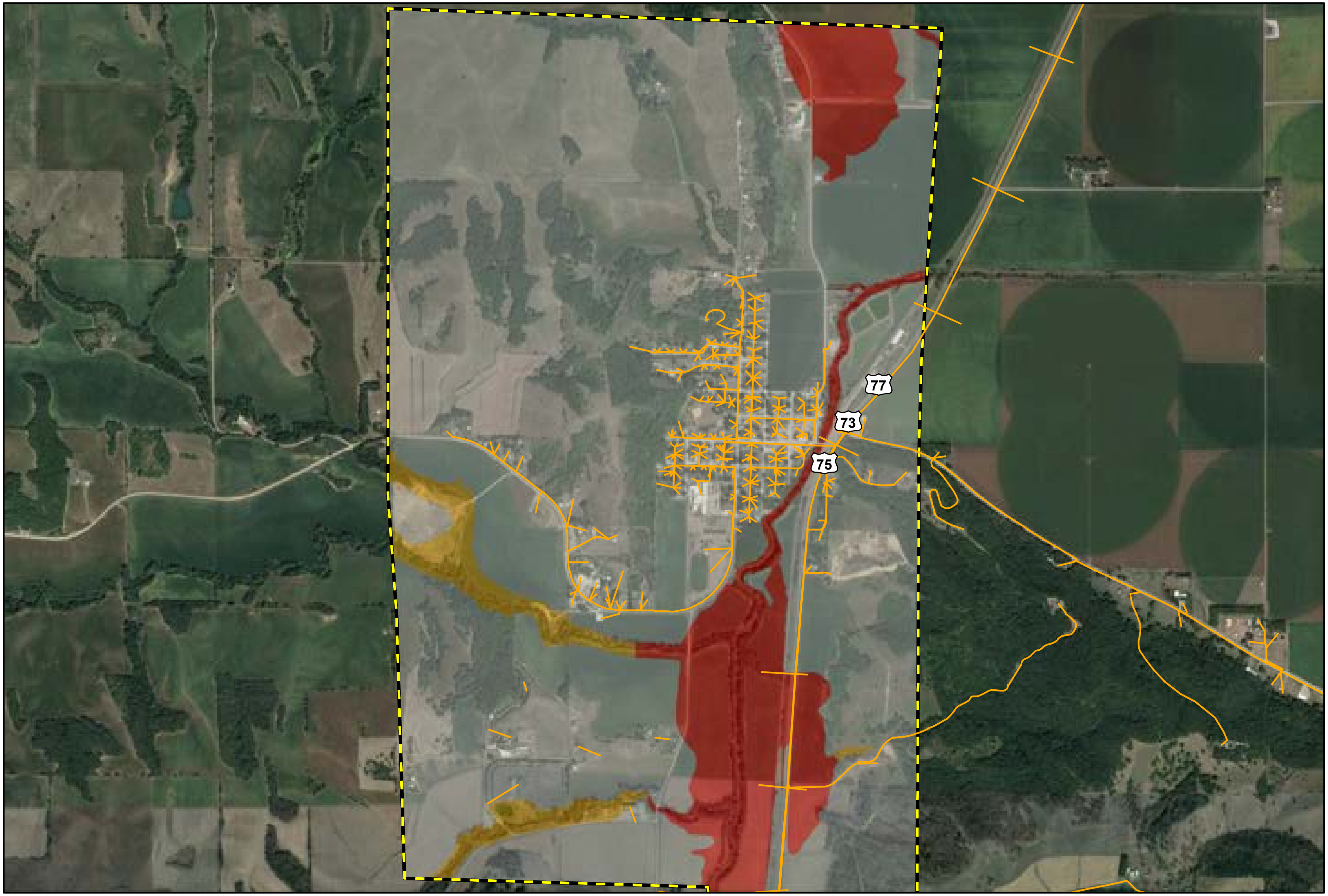

N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

olsson

Study Area
State Boundary
County Boundary
Underground Cable Installation
FEMA Floodzone A, 100-Year Floodplain
FEMA Floodzone AE, 100-Year Floodplain
FEMA Floodzone X, 500-Year Floodplain
Area Not Included

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Dakota County, Nebraska
Floodplain Map
Figure 7A

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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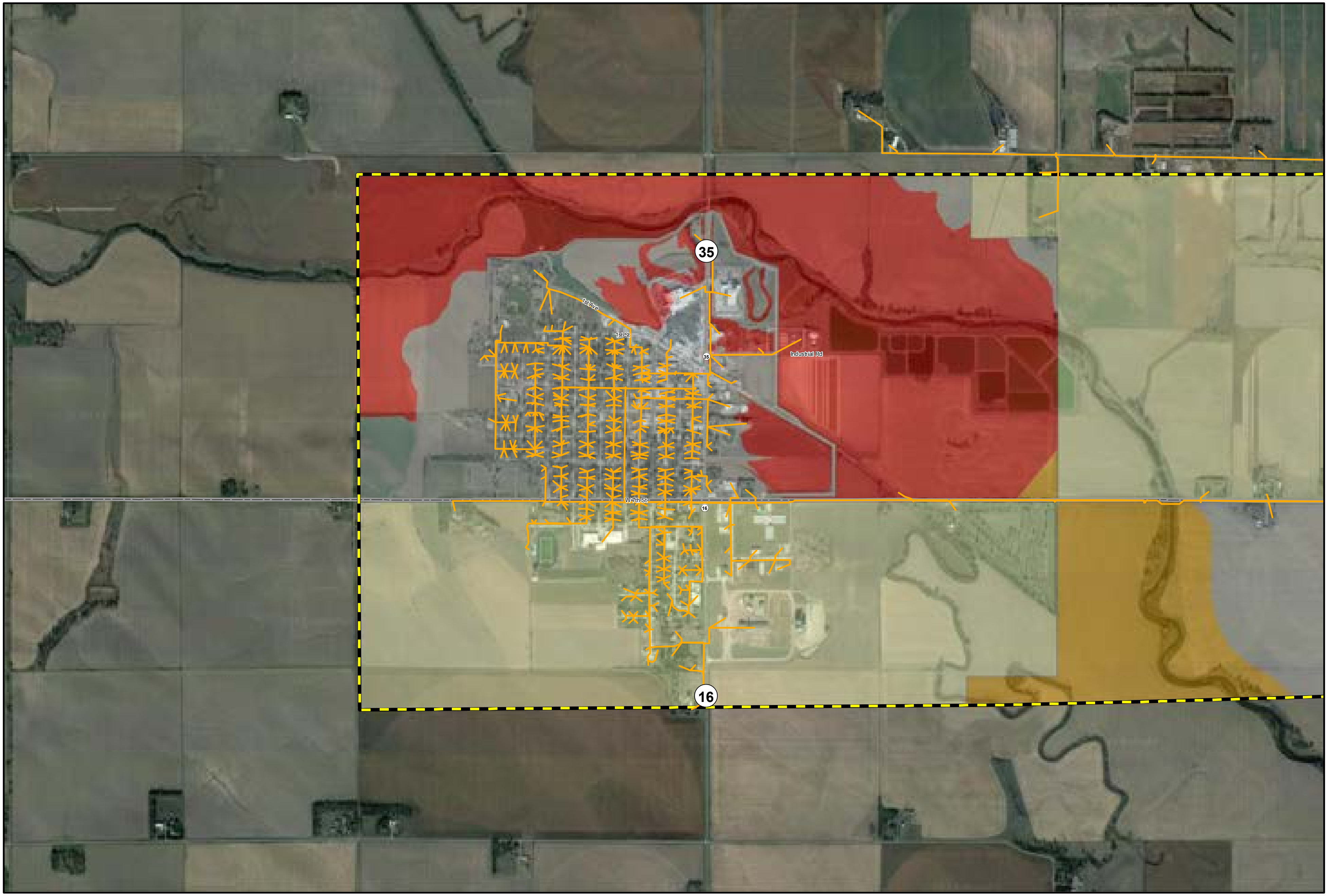

N

0 500 1,000 2,000

Feet

1 " = 2,000 feet

olsson

Study Area

State Boundary

County Boundary

Underground Cable Installation

FEMA Floodzone A, 100-Year Floodplain

FEMA Floodzone AE, 100-Year Floodplain

FEMA Floodzone X, 500-Year Floodplain

Area Not Included

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Dixon and Wayne Counties, Nebraska
Floodplain Map
Figure 7B

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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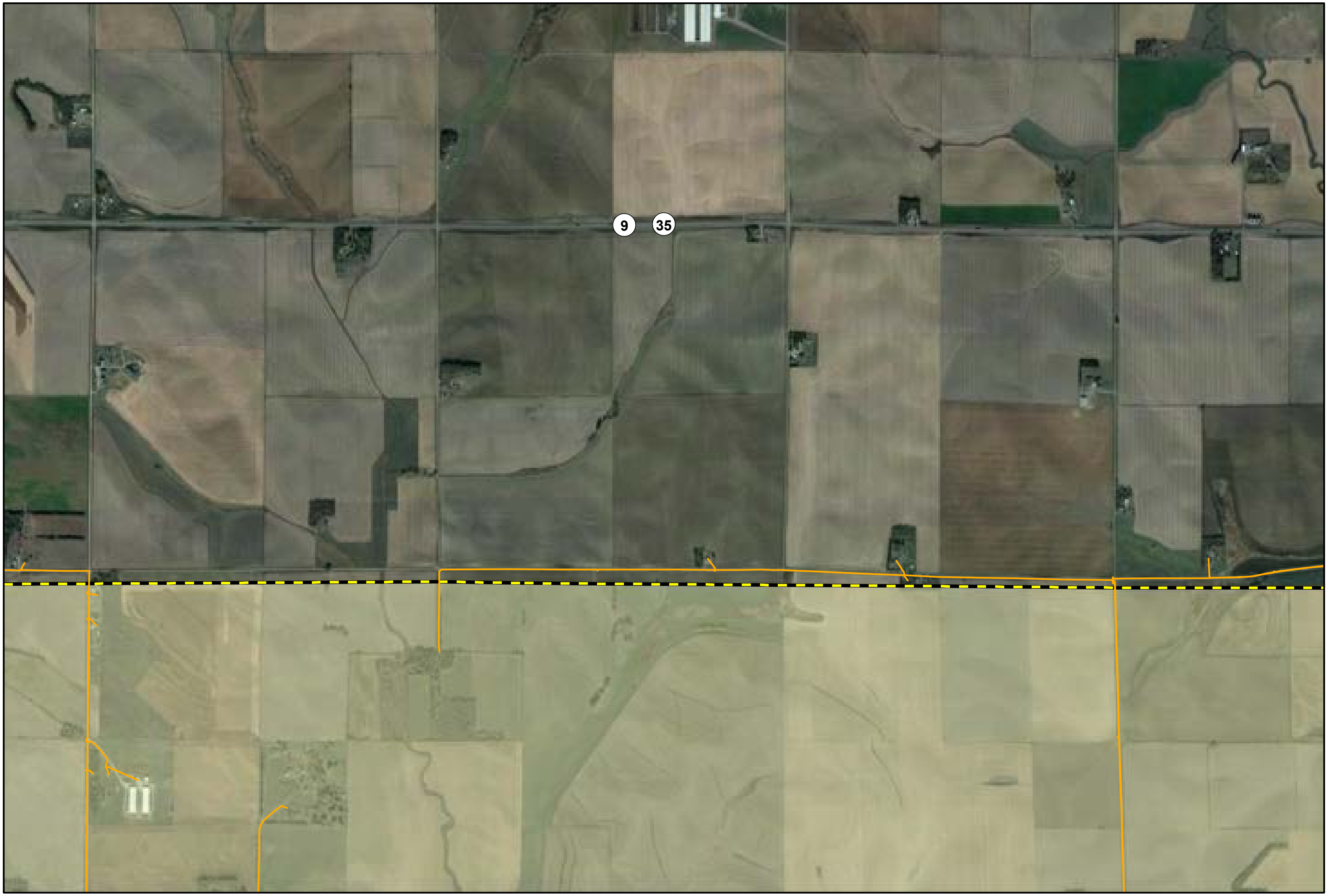


N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

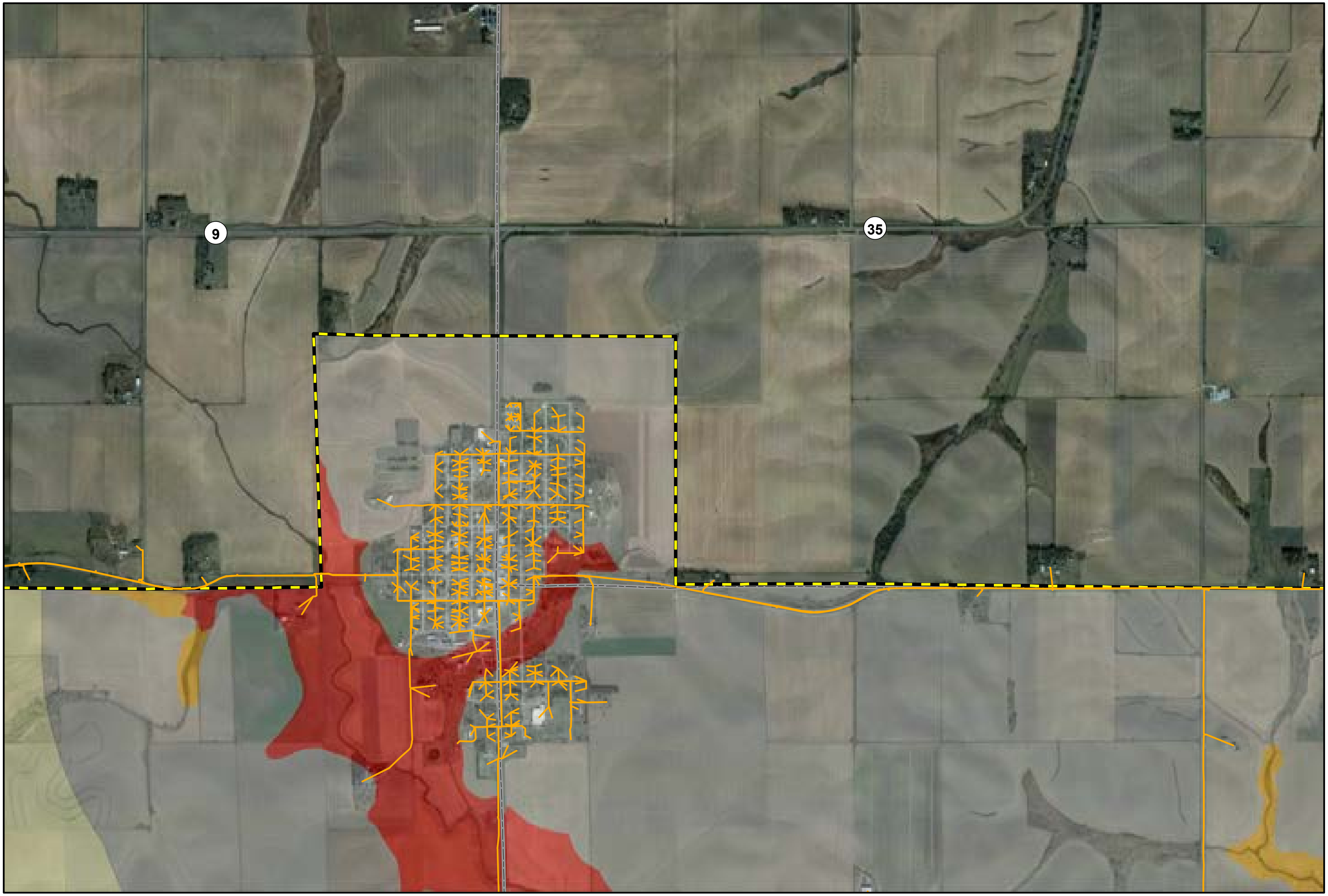
olsson

Study Area
State Boundary
County Boundary
Underground Cable Installation
FEMA Floodzone A, 100-Year Floodplain
FEMA Floodzone AE, 100-Year Floodplain
FEMA Floodzone X, 500-Year Floodplain
Area Not Included

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Dixon County, Nebraska
Floodplain Map
Figure 7C

WGS 1984 ARC System Zone 11

Basemap: Google Satellite



N

0 500 1,000 2,000

Feet

1 " = 2,000 feet

olsson

Study Area

State Boundary

County Boundary

Underground Cable Installation

FEMA Floodzone A, 100-Year Floodplain

FEMA Floodzone AE, 100-Year Floodplain

FEMA Floodzone X, 500-Year Floodplain

Area Not Included

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Dakota, Dixon, and Thurston Counties, Nebraska
Floodplain Map
Figure 7D

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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N

0 500 1,000 2,000

Feet

1 " = 2,000 feet

olsson

Study Area

State Boundary

County Boundary

Underground Cable Installation

FEMA Floodzone A, 100-Year Floodplain

FEMA Floodzone AE, 100-Year Floodplain

FEMA Floodzone X, 500-Year Floodplain

Area Not Included

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Dakota and Thurston Counties, Nebraska
Floodplain Map
Figure 7E

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

Study Area
State Boundary
County Boundary
Underground Cable Installation
FEMA Floodzone A, 100-Year Floodplain
FEMA Floodzone AE, 100-Year Floodplain
FEMA Floodzone X, 500-Year Floodplain
Area Not Included

N
0 500 1,000 2,000
Feet
1 " = 2,000 feet

olsson

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Dakota and Thurston Counties, Nebraska
Floodplain Map
Figure 7F

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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Study Area
State Boundary
County Boundary
Underground Cable Installation
FEMA Floodzone A, 100-Year Floodplain
FEMA Floodzone AE, 100-Year Floodplain
FEMA Floodzone X, 500-Year Floodplain
Area Not Included

N
0 500 1,000 2,000
Feet
1 " = 2,000 feet

olsson

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Dakota and Thurston Counties, Nebraska
Floodplain Map
Figure 7G

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Dakota and Thurston Counties, Nebraska
Floodplain Map
Figure 7H

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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N

0 500 1,000 2,000

Feet

1 " = 2,000 feet

olsson

Study Area
State Boundary
County Boundary
Underground Cable Installation

FEMA Floodzone A, 100-Year Floodplain
FEMA Floodzone AE, 100-Year Floodplain
FEMA Floodzone X, 500-Year Floodplain
Area Not Included

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Dakota and Thurston Counties, Nebraska
Floodplain Map
Figure 7I

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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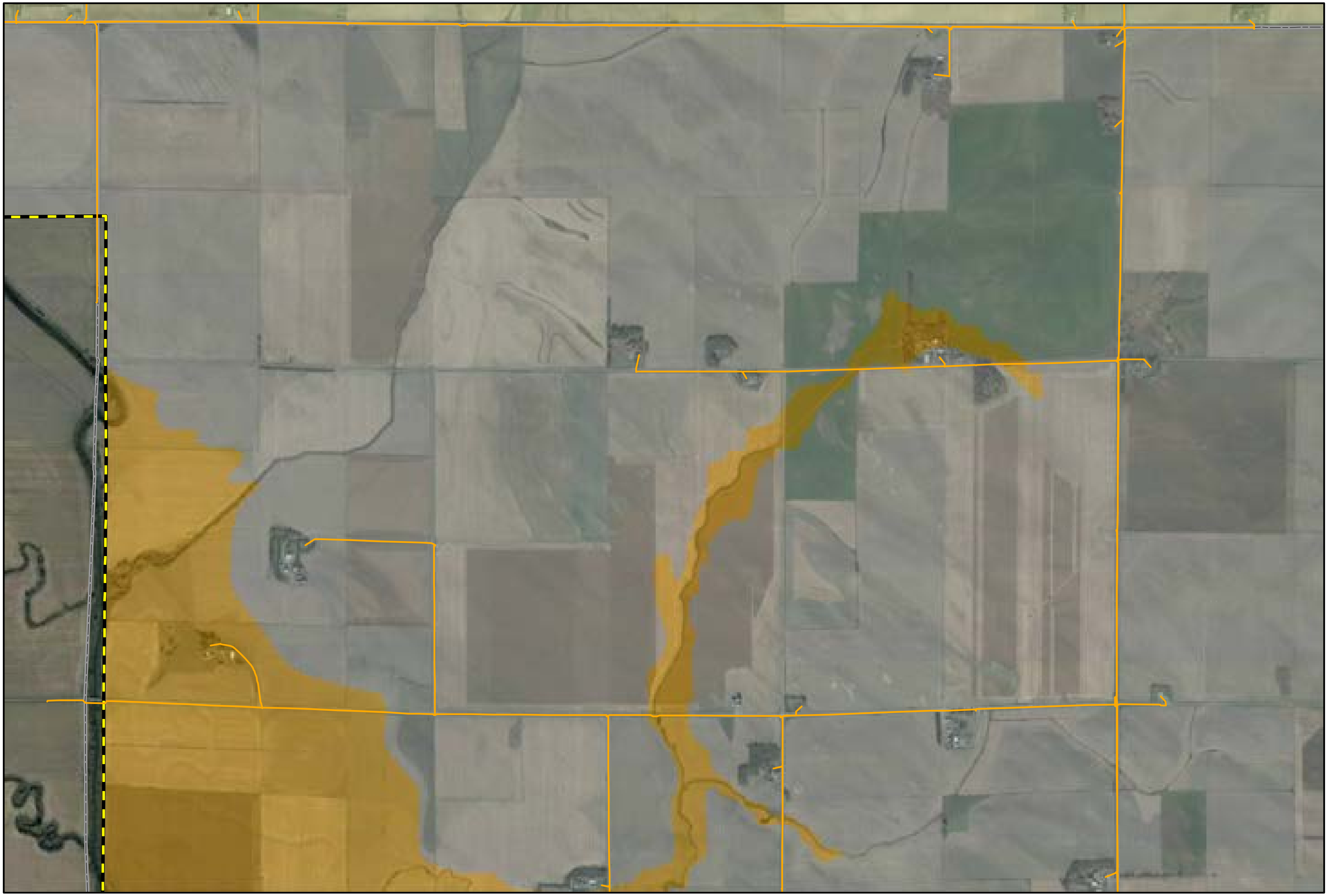

N

0 500 1,000 2,000

Feet

1 " = 2,000 feet

Study Area

State Boundary

County Boundary

Underground Cable Installation

FEMA Floodzone A, 100-Year Floodplain

FEMA Floodzone AE, 100-Year Floodplain

FEMA Floodzone X, 500-Year Floodplain

Area Not Included

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Dixon, Thurston, and Wayne Counties, Nebraska
Floodplain Map
Figure 7J

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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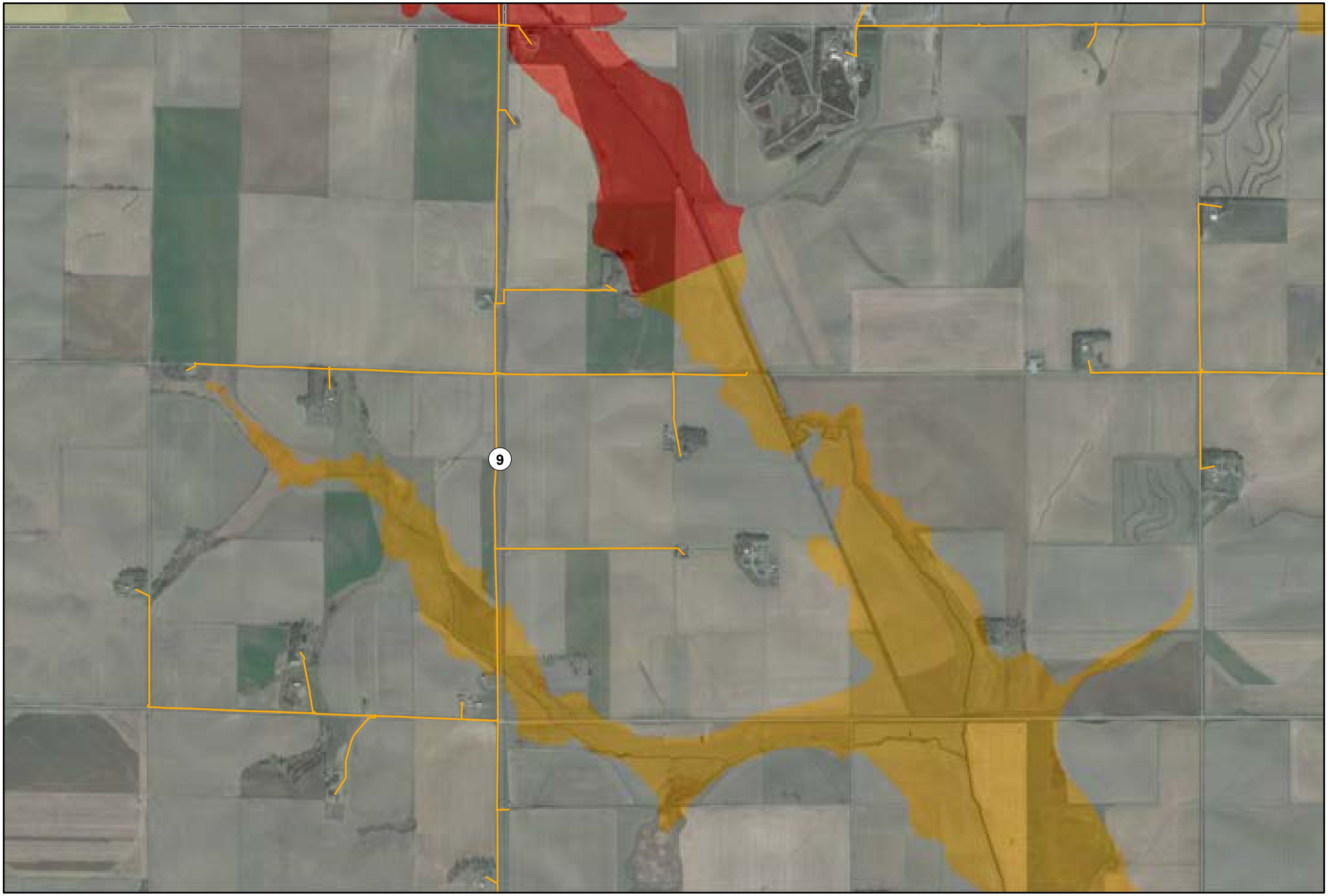

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N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

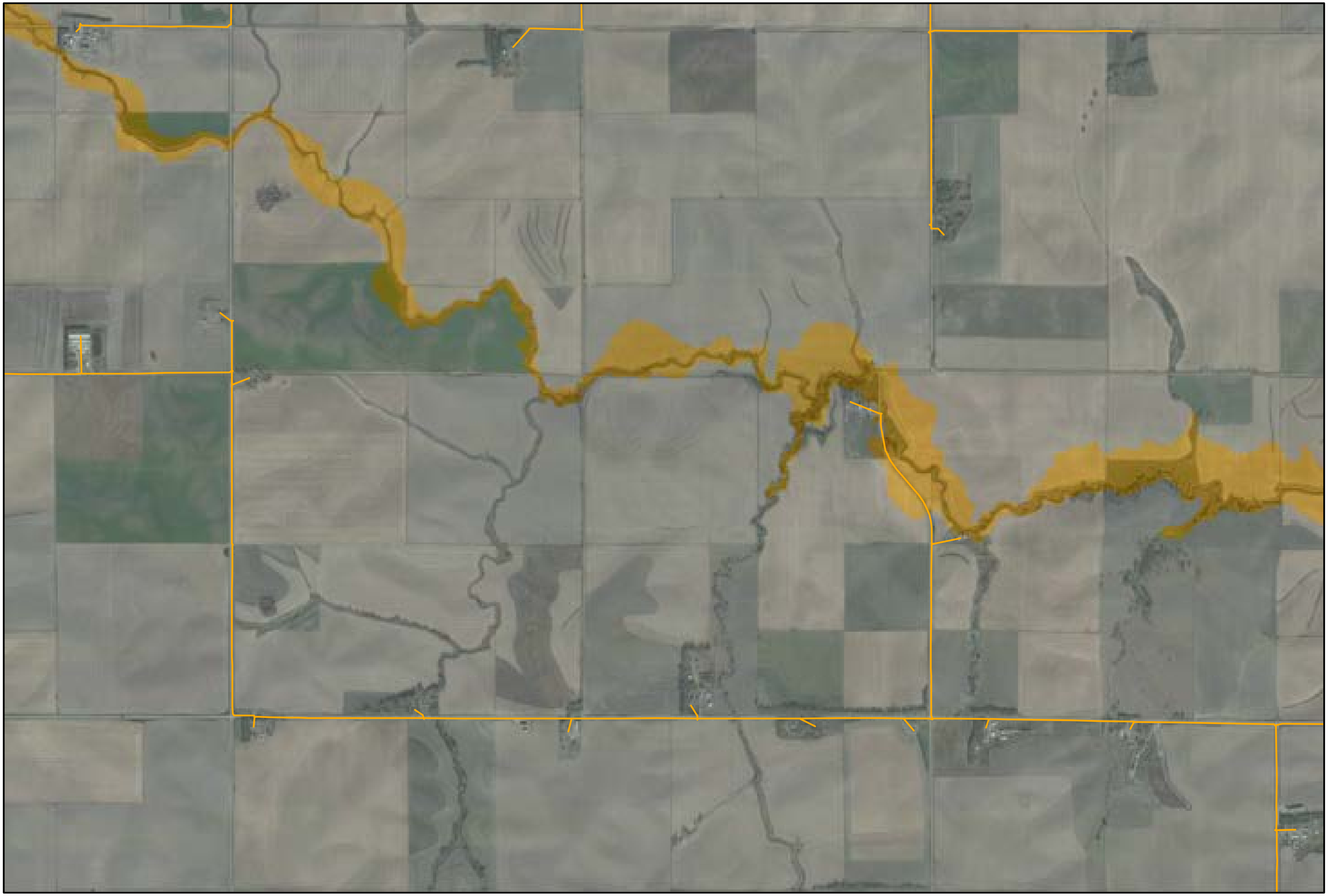
olsson

Study Area
State Boundary
County Boundary
Underground Cable Installation
FEMA Floodzone A, 100-Year Floodplain
FEMA Floodzone AE, 100-Year Floodplain
FEMA Floodzone X, 500-Year Floodplain
Area Not Included

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Dixon and Thurston Counties, Nebraska
Floodplain Map
Figure 7K

WGS 1984 ARC System Zone 11

Basemap: Google Satellite



N

0 500 1,000 2,000

Feet

1 " = 2,000 feet

olsson

Study Area
State Boundary
County Boundary
Underground Cable Installation

FEMA Floodzone A, 100-Year Floodplain
FEMA Floodzone AE, 100-Year Floodplain
FEMA Floodzone X, 500-Year Floodplain
Area Not Included

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
Floodplain Map
Figure 7L

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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N

0 500 1,000 2,000
Feet
1 " = 2,000 feet

olsson

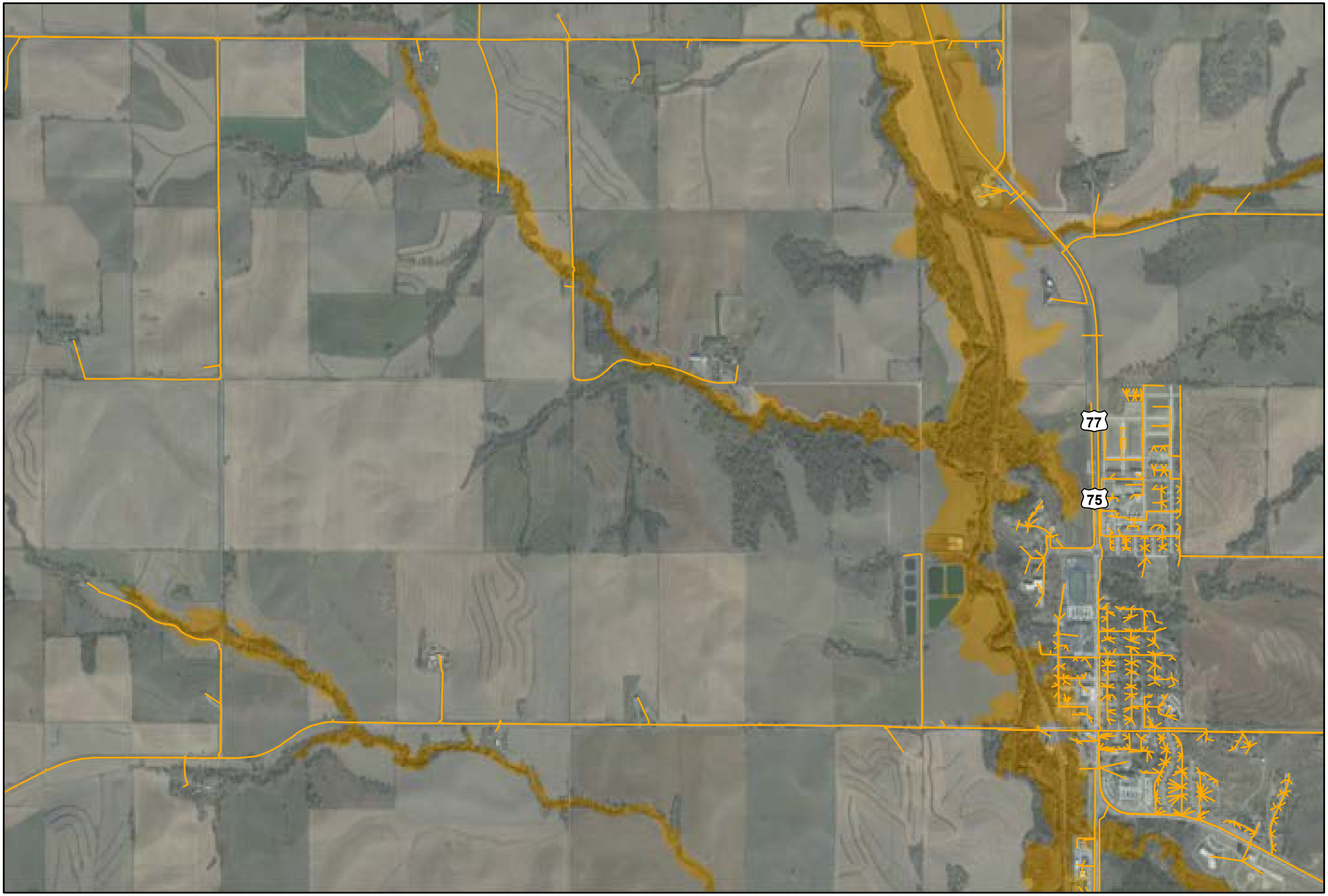
Study Area
State Boundary
County Boundary
Underground Cable Installation

FEMA Floodzone A, 100-Year Floodplain
FEMA Floodzone AE, 100-Year Floodplain
FEMA Floodzone X, 500-Year Floodplain
Area Not Included

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
Floodplain Map
Figure 7M

WGS 1984 ARC System Zone 11

Basemap: Google Satellite



N

0 500 1,000 2,000

Feet

1 " = 2,000 feet

olsson

Study Area

State Boundary

County Boundary

Underground Cable Installation

FEMA Floodzone A, 100-Year Floodplain

FEMA Floodzone AE, 100-Year Floodplain

FEMA Floodzone X, 500-Year Floodplain

Area Not Included

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
Floodplain Map
Figure 7N

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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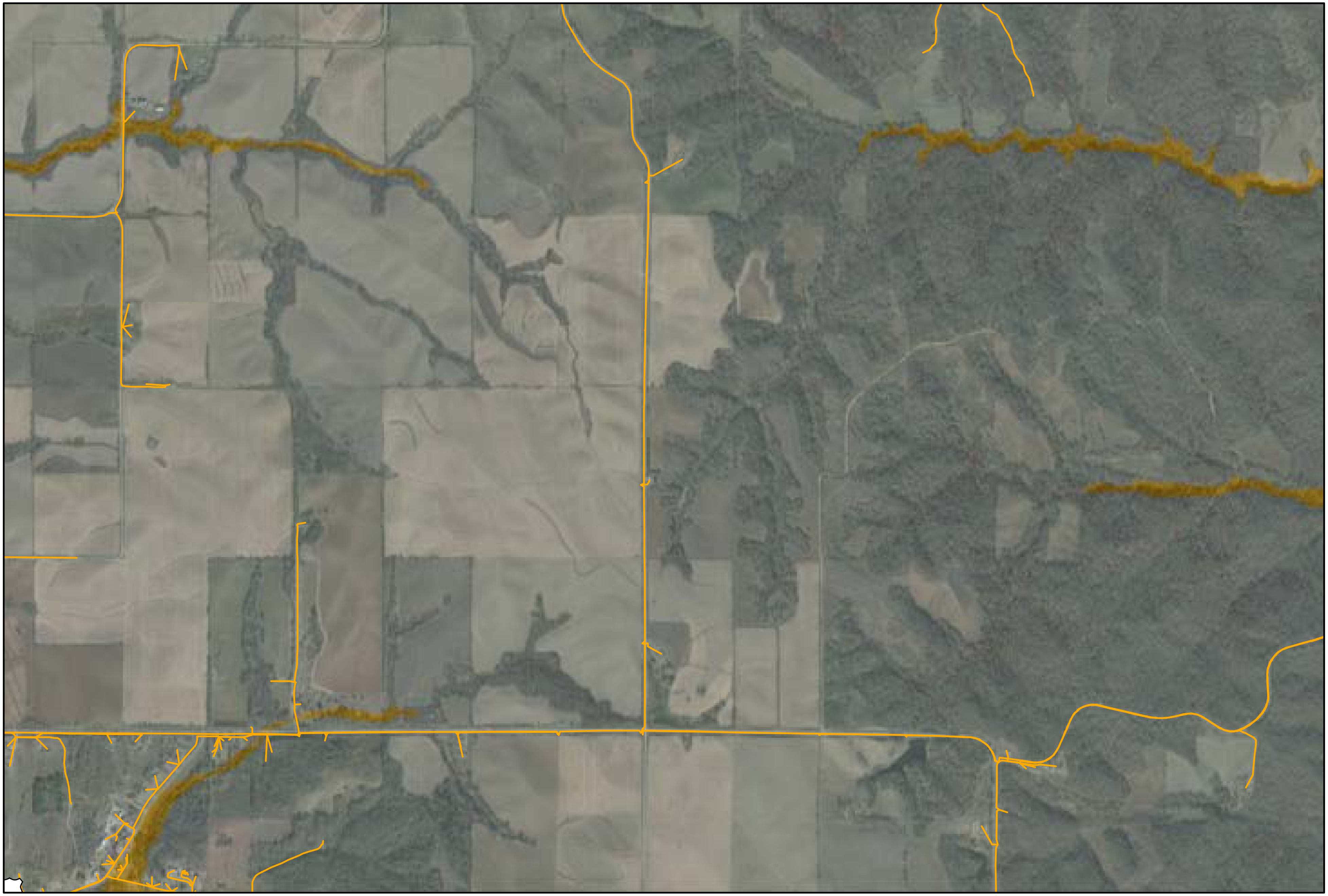

N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

olsson

Study Area

State Boundary

County Boundary

Underground Cable Installation

FEMA Floodzone A, 100-Year Floodplain

FEMA Floodzone AE, 100-Year Floodplain

FEMA Floodzone X, 500-Year Floodplain

Area Not Included

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
Floodplain Map
Figure 7O

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

olsson

Study Area
State Boundary
County Boundary
Underground Cable Installation
FEMA Floodzone A, 100-Year Floodplain
FEMA Floodzone AE, 100-Year Floodplain
FEMA Floodzone X, 500-Year Floodplain
Area Not Included

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
Floodplain Map
Figure 7P

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

olsson

Study Area
State Boundary
County Boundary
Underground Cable Installation
FEMA Floodzone A, 100-Year Floodplain
FEMA Floodzone AE, 100-Year Floodplain
FEMA Floodzone X, 500-Year Floodplain
Area Not Included

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Woodbury County, Iowa
Floodplain Map
Figure 7Q

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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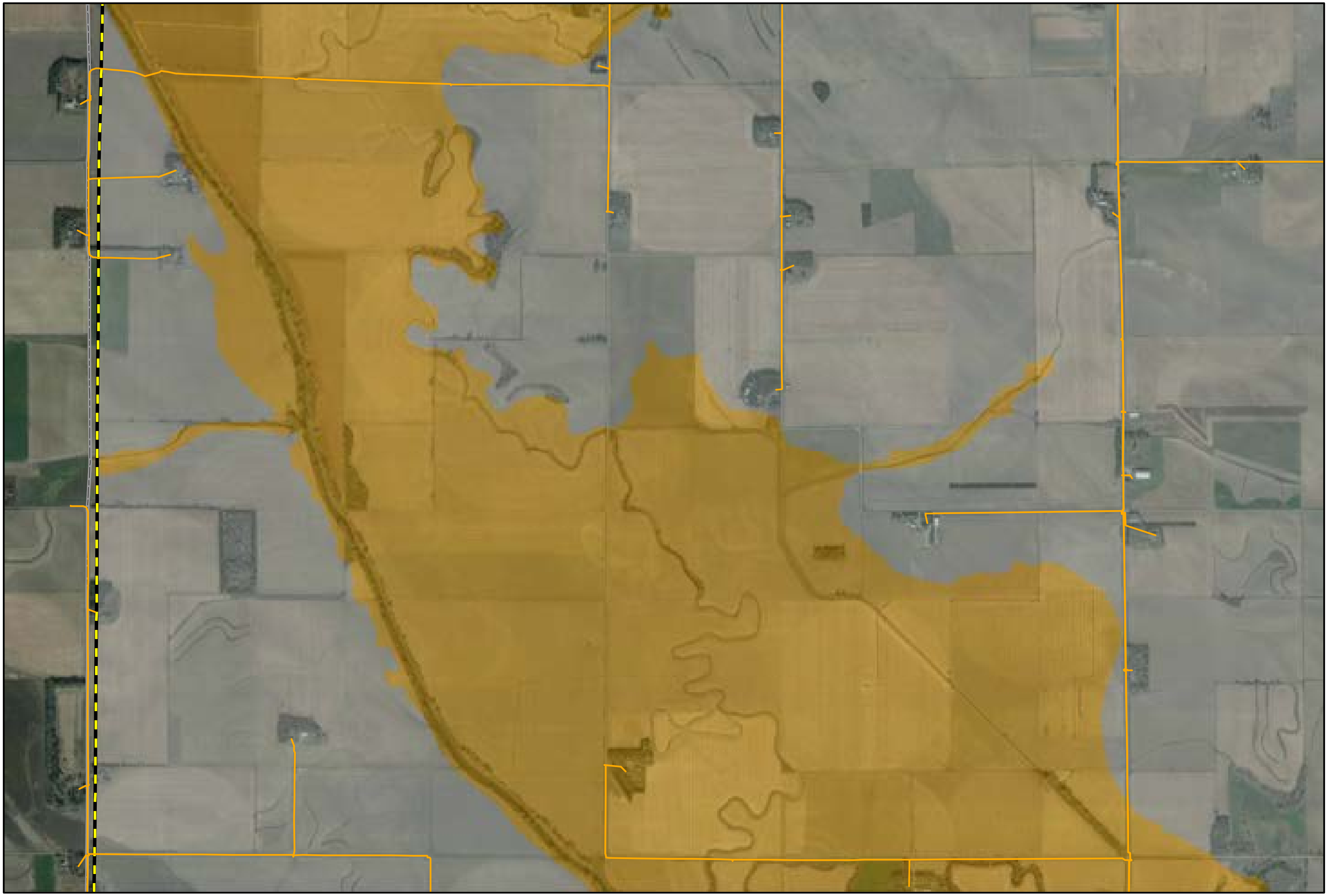


N

0 500 1,000 2,000
Feet
1 " = 2,000 feet

olsson

- Study Area
- State Boundary
- County Boundary
- Underground Cable Installation
- FEMA Floodzone A, 100-Year Floodplain
- FEMA Floodzone AE, 100-Year Floodplain
- FEMA Floodzone X, 500-Year Floodplain
- Area Not Included

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston and Wayne Counties, Nebraska
Floodplain Map
Figure 7R

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

\\oa.ad.oaconsulting.com\fnts-ns1\projects\2021\05001-05500\021-05175\40-Design\GIS\23-10-02_NRPL_EA Figures.mxd PUBLISHED BY: mczerwinski DATE: October 19, 2023

N

0 500 1,000 2,000

Feet

1 " = 2,000 feet

olsson

Study Area

State Boundary

County Boundary

Underground Cable Installation

FEMA Floodzone A, 100-Year Floodplain

FEMA Floodzone AE, 100-Year Floodplain

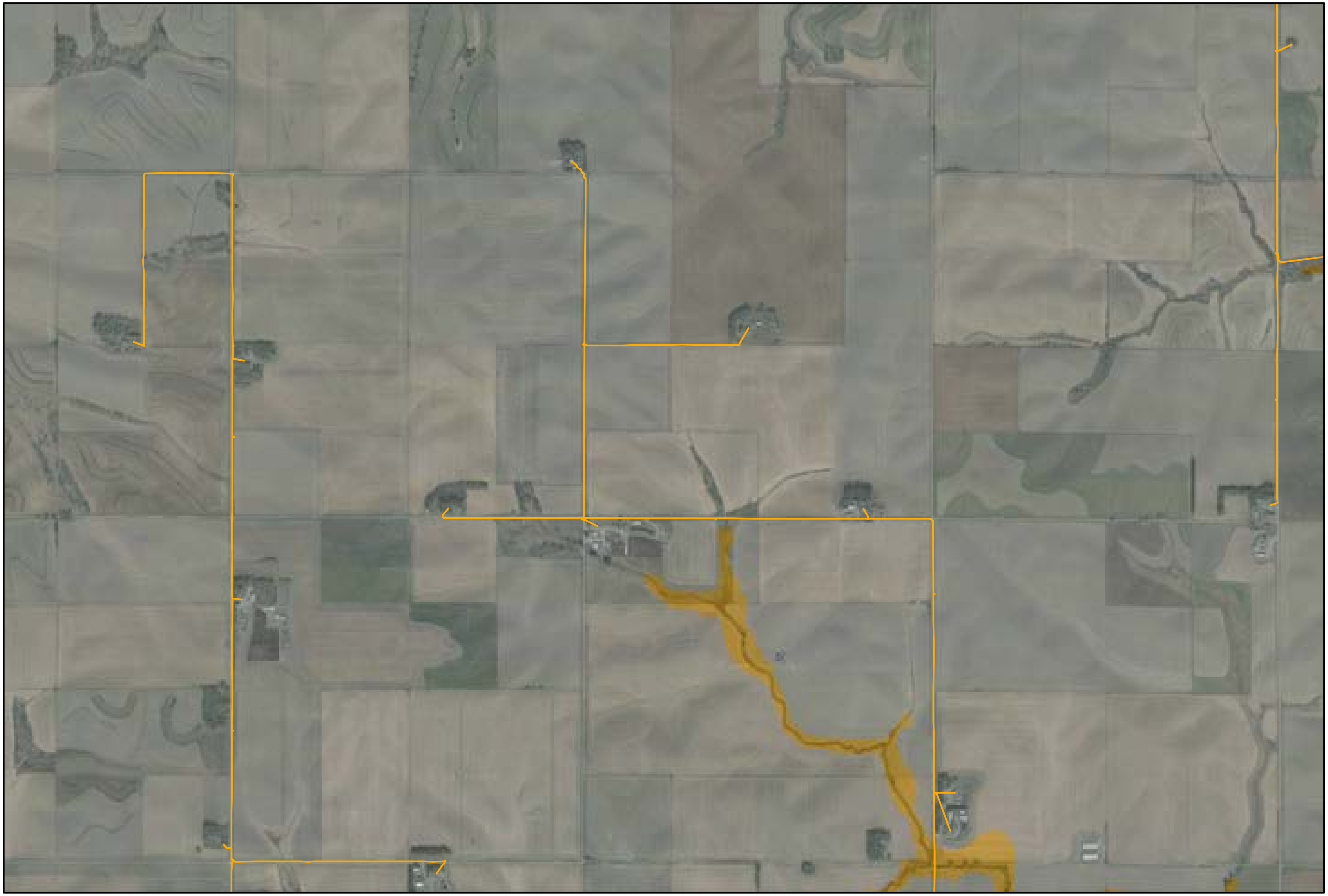
FEMA Floodzone X, 500-Year Floodplain

Area Not Included

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
Floodplain Map
Figure 7S

WGS 1984 ARC System Zone 11

Basemap: Google Satellite



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N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

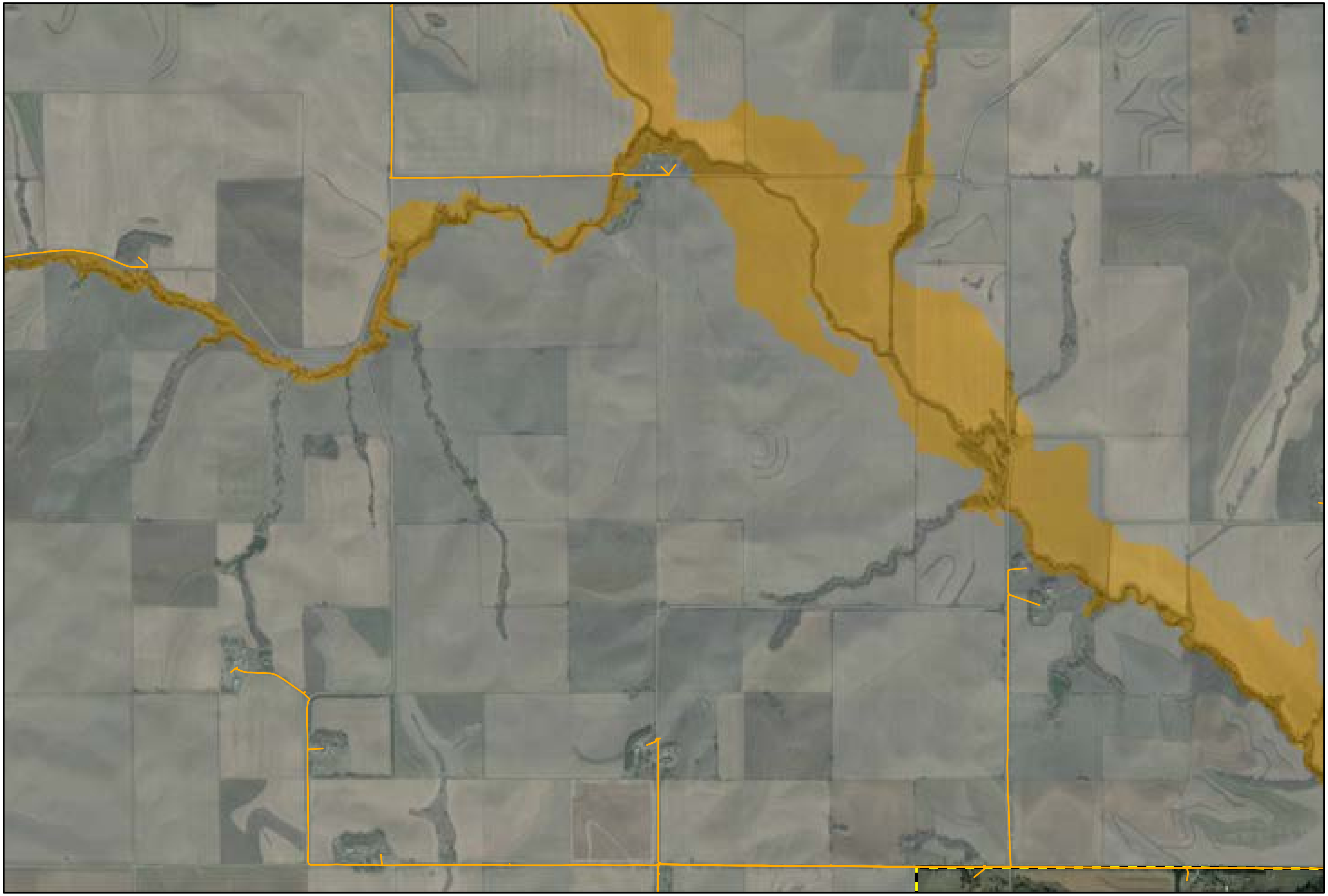
olsson

- Study Area
- State Boundary
- County Boundary
- Underground Cable Installation
- FEMA Floodzone A, 100-Year Floodplain
- FEMA Floodzone AE, 100-Year Floodplain
- FEMA Floodzone X, 500-Year Floodplain
- Area Not Included

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
Floodplain Map
Figure 7T

WGS 1984 ARC System Zone 11

Basemap: Google Satellite



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N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

olsson

Study Area

State Boundary

County Boundary

Underground Cable Installation

FEMA Floodzone A, 100-Year Floodplain

FEMA Floodzone AE, 100-Year Floodplain

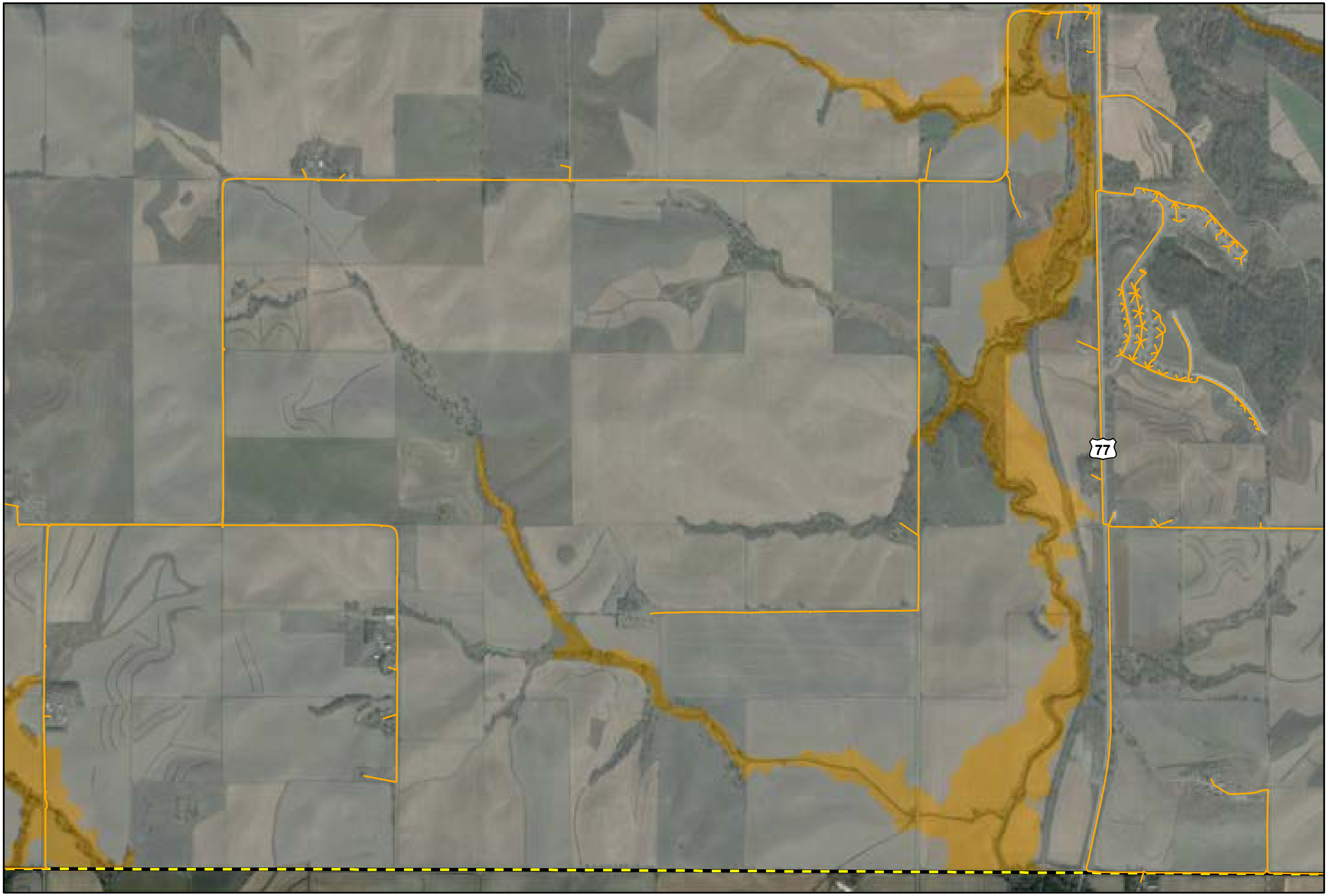
FEMA Floodzone X, 500-Year Floodplain

Area Not Included

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
Floodplain Map
Figure 7U

WGS 1984 ARC System Zone 11

Basemap: Google Satellite



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N

0 500 1,000 2,000 Feet

1 " = 2,000 feet

olsson

Study Area

State Boundary

County Boundary

Underground Cable Installation

FEMA Floodzone A, 100-Year Floodplain

FEMA Floodzone AE, 100-Year Floodplain

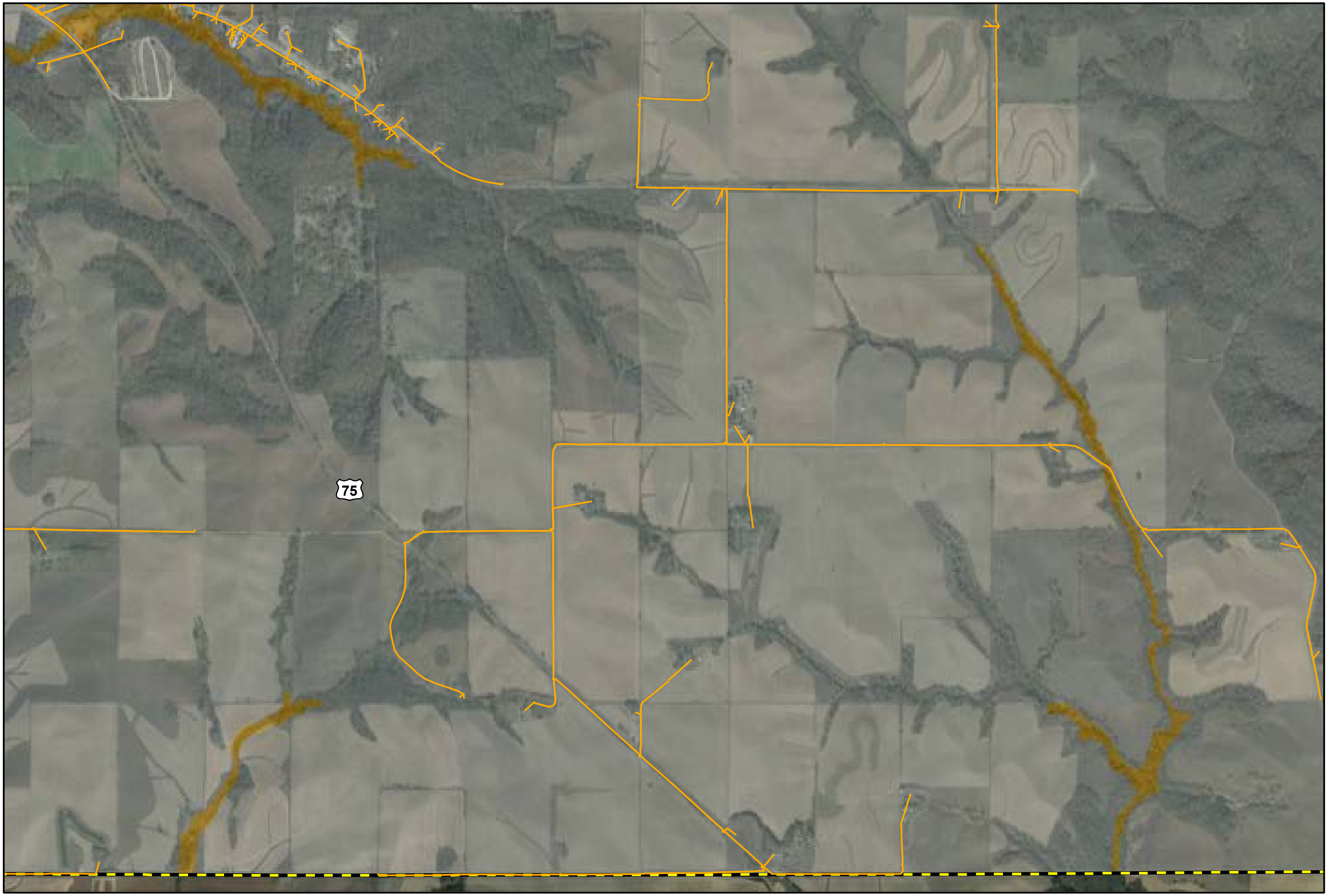
FEMA Floodzone X, 500-Year Floodplain

Area Not Included

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
Floodplain Map
Figure 7V

WGS 1984 ARC System Zone 11

Basemap: Google Satellite



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N

0 500 1,000 2,000

Feet

1 " = 2,000 feet

olsson

Study Area

State Boundary

County Boundary

Underground Cable Installation

FEMA Floodzone A, 100-Year Floodplain

FEMA Floodzone AE, 100-Year Floodplain

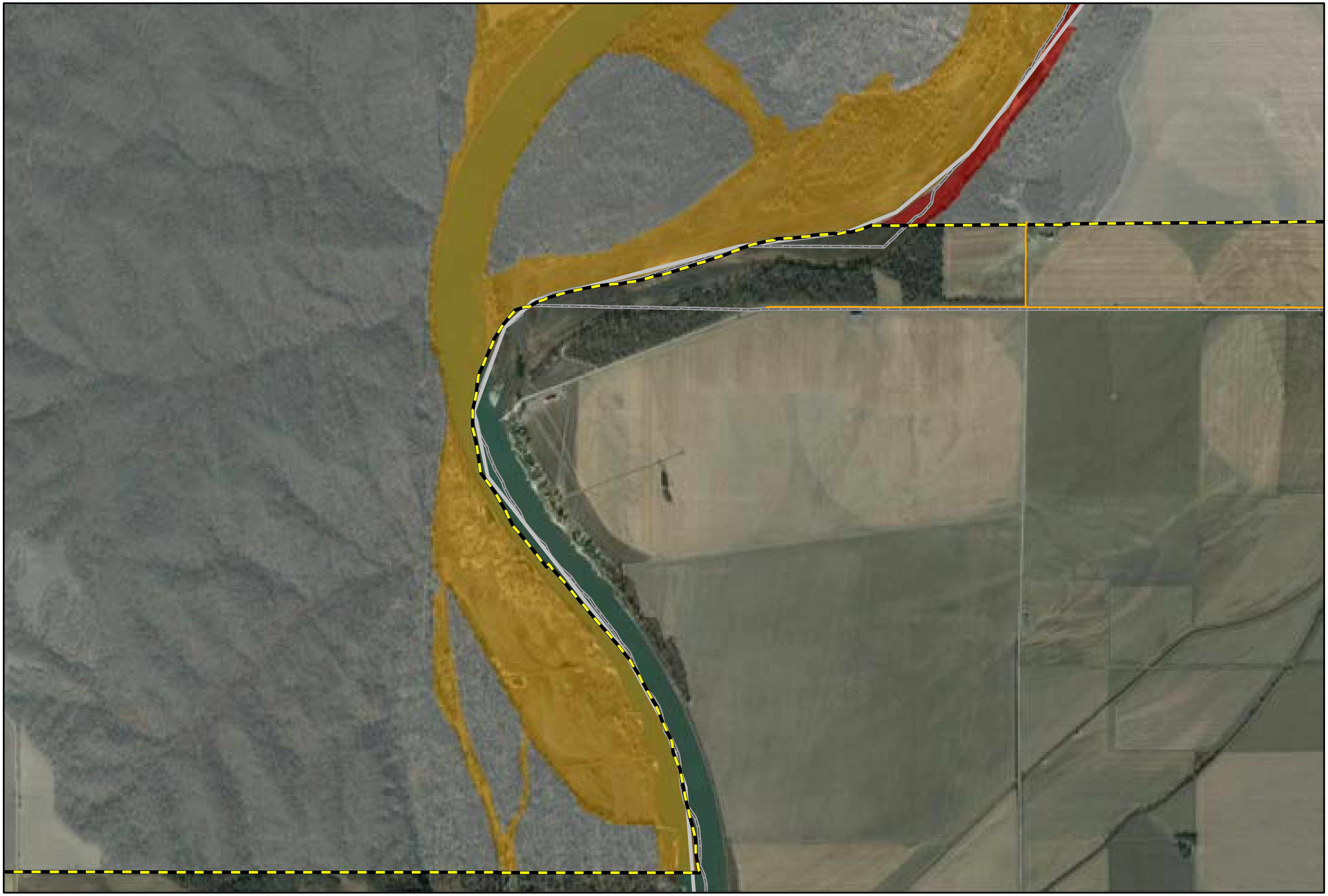
FEMA Floodzone X, 500-Year Floodplain

Area Not Included

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
Floodplain Map
Figure 7W

WGS 1984 ARC System Zone 11

Basemap: Google Satellite



N

0 500 1,000 2,000

Feet

1 " = 2,000 feet

olsson

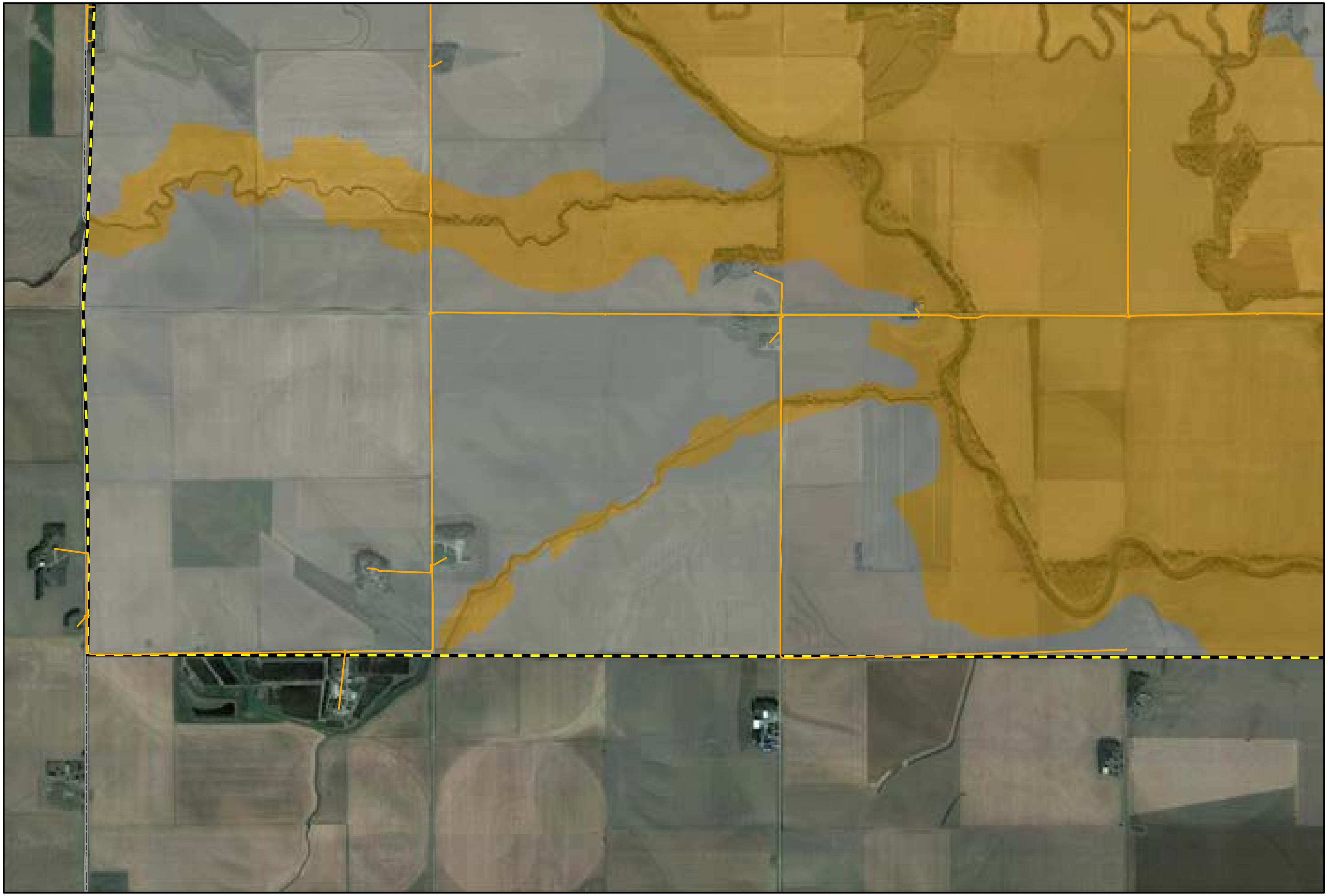
- Study Area
- State Boundary
- County Boundary
- Underground Cable Installation
- FEMA Floodzone A, 100-Year Floodplain
- FEMA Floodzone AE, 100-Year Floodplain
- FEMA Floodzone X, 500-Year Floodplain
- Area Not Included

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
Floodplain Map
Figure 7X

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

\\oa.ad.oaconsulting.com\fnts-ns1\projects\2021\05001-05500\021-05175\40-Design\GIS\23-10-02_NRPL_EA Figures.mxd PUBLISHED BY: mczerwinski DATE: October 19, 2023



N

0 500 1,000 2,000

Feet

1 " = 2,000 feet

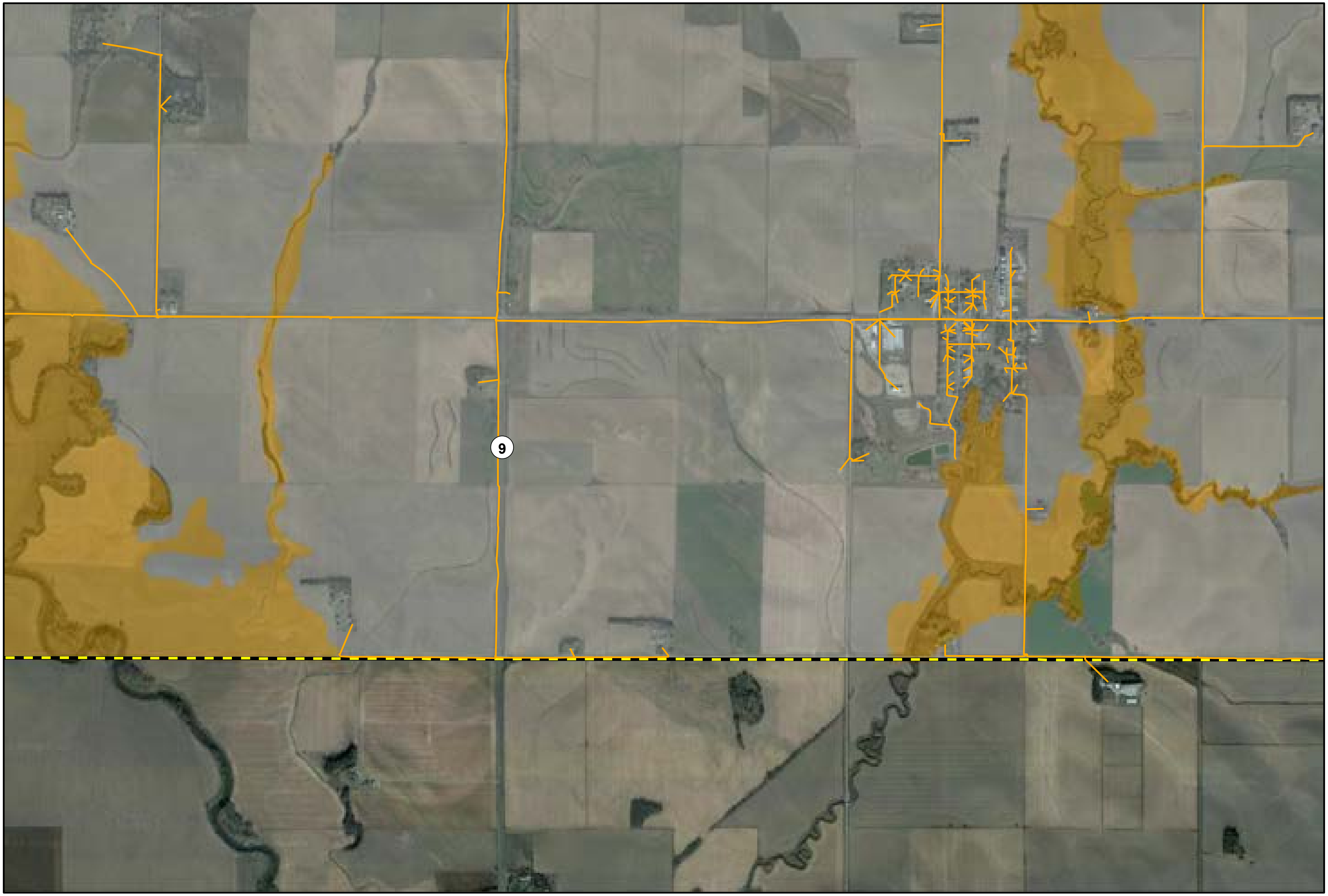
Study Area	FEMA Floodzone A, 100-Year Floodplain
State Boundary	FEMA Floodzone AE, 100-Year Floodplain
County Boundary	FEMA Floodzone X, 500-Year Floodplain
Underground Cable Installation	Area Not Included

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston and Wayne Counties, Nebraska
Floodplain Map
Figure 7Y

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

\\oa.ad.oaconsulting.com\fnts-ns1\projects\2021\05001-05500\021-05175\40-Design\GIS\23-10-02_NRPL_EA Figures.mxd PUBLISHED BY: mczerwinski DATE: October 19, 2023



N

0 500 1,000 2,000

Feet

1 " = 2,000 feet

olsson

- Study Area
- State Boundary
- County Boundary
- Underground Cable Installation
- FEMA Floodzone A, 100-Year Floodplain
- FEMA Floodzone AE, 100-Year Floodplain
- FEMA Floodzone X, 500-Year Floodplain
- Area Not Included

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
Floodplain Map
Figure 7Z

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

\\oa.ad.oaconsulting.com\fnts-ns1\projects\2021\05001-05500\021-05175\40-Design\GIS\23-10-02_NRPL_EA Figures.mxd PUBLISHED BY: mczerwinski DATE: October 19, 2023

N

0 500 1,000 2,000

Feet

1 " = 2,000 feet

olsson

Study Area

State Boundary

County Boundary

Underground Cable Installation

FEMA Floodzone A, 100-Year Floodplain

FEMA Floodzone AE, 100-Year Floodplain

FEMA Floodzone X, 500-Year Floodplain

Area Not Included

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
Floodplain Map
Figure 7AA

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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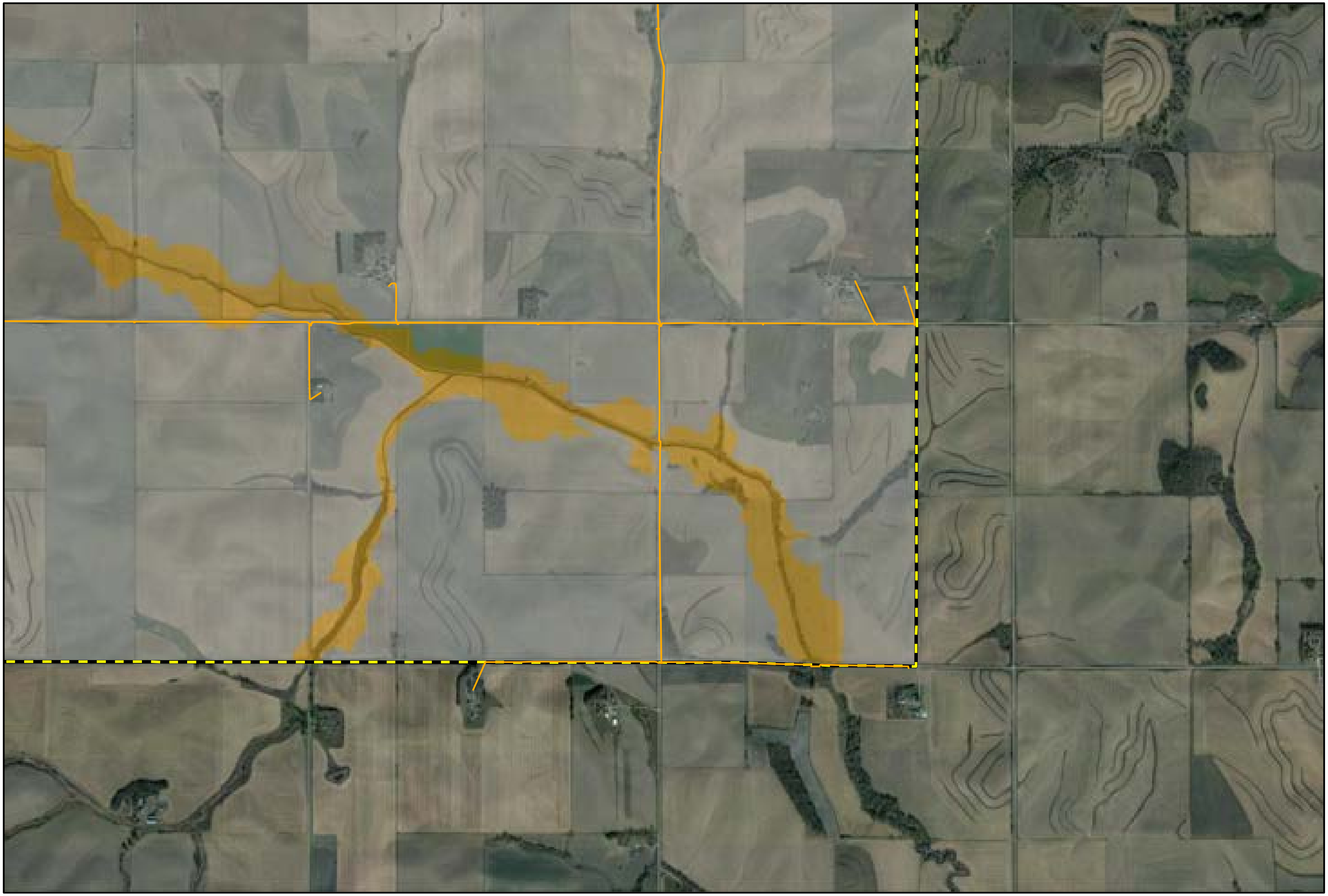


N

0 500 1,000 2,000
Feet
1 " = 2,000 feet

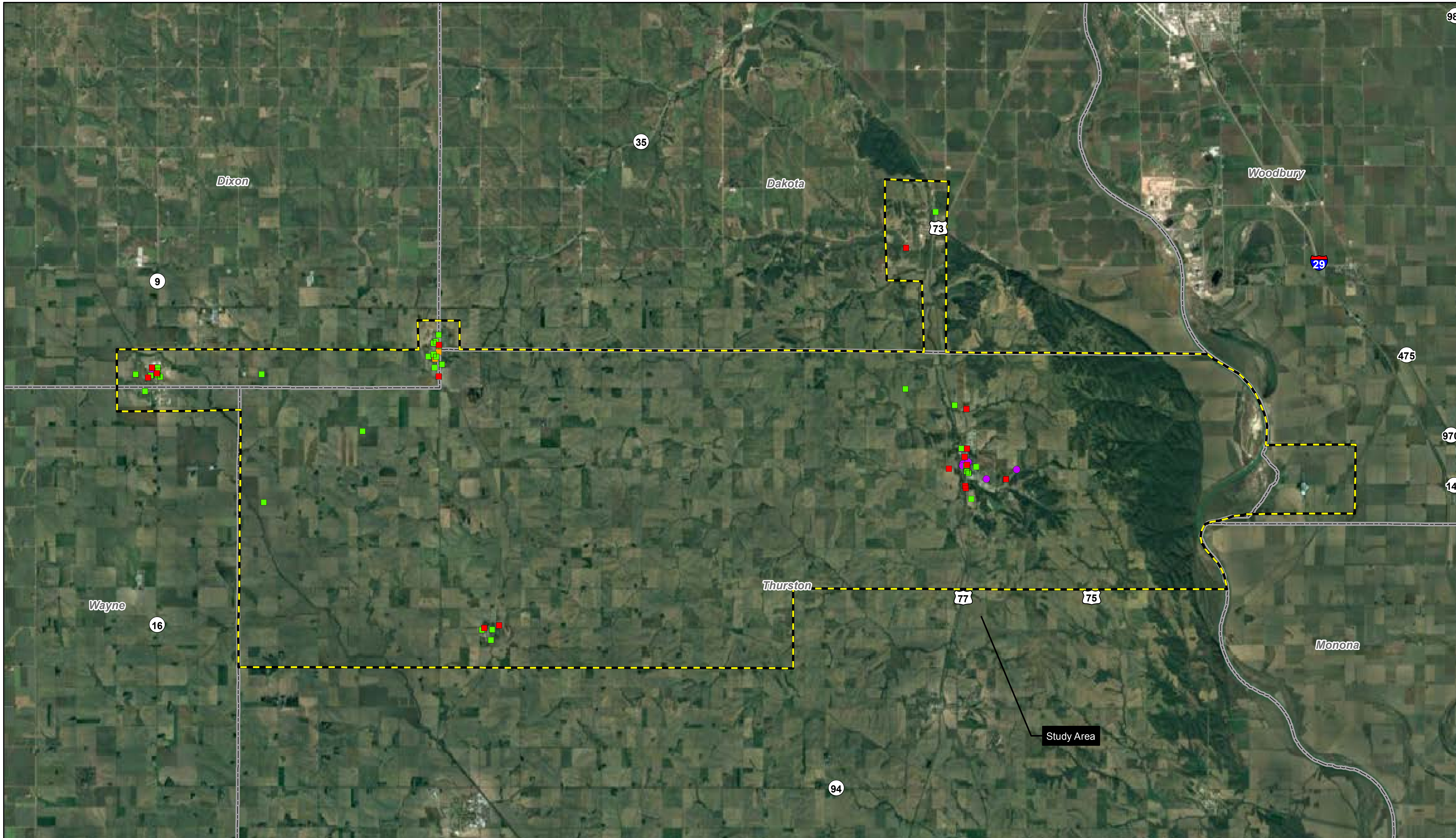
olsson

- Study Area
- State Boundary
- County Boundary
- Underground Cable Installation
- FEMA Floodzone A, 100-Year Floodplain
- FEMA Floodzone AE, 100-Year Floodplain
- FEMA Floodzone X, 500-Year Floodplain
- Area Not Included

Winnebago Tribe
Broadband Connectivity
Environmental Assessment
Thurston County, Nebraska
Floodplain Map
Figure 7AB

WGS 1984 ARC System Zone 11

Basemap: Google Satellite



N

0 1,500 3,000 6,000 ft

1 " = 12,000 '

olsson

NDEE Site Status
- Active
- Inactive
- Unknown

EPA Site Status
- Inactive
- City Limit
- Counties
- Hazmat Study Area

Winnebago Tribe Broadband Connectivity Environmental Assessment
Dixon, Thurston, and Wayne Counties, Nebraska
Woodbury County, Iowa

Hazardous Material Review Map
Figure 8

WGS 1984 ARC System Zone 11

Basemap: Google Maps Imagery

F:\2021\05001-05500\021-05175\40-Design\GIS\23-07-05_CMRM_Hazmat Figures.mxd PUBLISHED BY: ksherman DATE: November 14, 2023

Appendix C

Wetland Delineation/Agency Compliance

WINNEBAGO TRIBE BROADBAND CONNECTIVITY PROJECT WETLAND DELINEATION REPORT

PREPARED FOR:

Winnebago Tribe of Nebraska

Winnebago, Nebraska

December 2023

Olsson Project No. 021-05175

TABLE OF CONTENTS

LIST OF TABLES

APPENDICES

1. INTRODUCTION

This report documents the findings of a wetland delineation for the Winnebago Tribe Broadband Connectivity Project (Project). The Project is a broadband fiber infrastructure project. The Project is located across Dakota, Dixon, Thurston, and Wayne Counties in Nebraska and Woodbury County in Iowa. (Figures 1A-L and 2A-L, Appendix A). The Winnebago Tribe of Nebraska contracted Olsson, Inc. (Olsson) to identify and delineate wetlands, stream channels, and other waters within the proposed Project study area (Study Area). The Study Area for this report includes Staging Areas A, B, C, D, E, and F, the Wakefield Bore Sites, the North Bore Site, the South Bore Site, the Central Office Site and Alternative Location, and the Emerson Office Site. This report provides a description of the Study Area, methods used, investigation results, and a discussion of the results.

The Study Area consists of:

- Staging Area A, approximately 26 acres located in Section 15, Township 26 North, Range 6 East in the Thurston, Nebraska Quadrangle. The geometric center of the Staging Area A is located at latitude 42.233540 degrees and longitude -96.709068 degrees.
- Staging Area B, approximately 5 acres located in Section 35, Township 27 North, Range 8 East in the Homer, Nebraska Quadrangle. The geometric center of the Staging Area B is located at latitude 42.264262 degrees and longitude -96.483658 degrees.
- Staging Area C, approximately 4 acres located in Section 12, Township 26 North, Range 8 East in the Walthill, Nebraska Quadrangle. The geometric center of the Staging Area C is located at latitude 42.235538 degrees and longitude -96.466731 degrees.
- Staging Area D, approximately 5 acres located in Section 18, Township 26 North, Range 9 East in the Walthill, Nebraska Quadrangle. The geometric center of the Staging Area A is located at latitude 42.232051 degrees and longitude -96.450191 degrees.
- Staging Area E, approximately 649 acres located in Sections 1 and 12, Township 26 North, Range 9 East and Sections 6, 7, and 18, Township 26 North, Range 10 East in the Salix, Nebraska and Albaton, Iowa-Nebraska Quadrangles. The geometric center of the Staging Area E is located at latitude 42.241484 degrees and longitude -96.350098 degrees.
- Staging Area F, approximately 239 acres located in Section 28 and 33, Township 86 North, Range 47 West in the Albaton, Iowa-Nebraska Quadrangle. The geometric center of the Staging Area F is located at latitude 42.224327 degrees and longitude -96.316914 degrees.
- The Wakefield Bore Sites, including seven bore points with 100-foot buffers, are located in Sections 32 and 33, Township 27 North, Range 5 East and Section 4, Township 26 North, Range 5 East in the Wakefield, Nebraska Quadrangle. Each bore point contains a 100-foot buffer around the center point.

  - Bore Point 101 is located at latitude 42.264448 and longitude -96.859325
  - Bore Point 102 is located at latitude 42.264183 and longitude -96.856419
  - Bore Point 103 is located at latitude 42.270711 and longitude -96.858427
  - Bore Point 104 is located at latitude 42.273748 and longitude -96.861951
  - Bore Point 105 is located at latitude 42.275534 and longitude -96.862166
  - Bore Point is located at latitude 42.273477 and longitude -96.871355
  - Bore Point 107 is located at latitude 42.273147 and longitude -96.873857
- The North Bore Site, containing two bore points with 50-foot buffers, is located in Section 26, Township 29 North, Range 9 East and Section 1, Township 88 North, Range 48 West in the Sioux City South, Iowa-Nebraska-South Dakota Quadrangle.
  - The western bore point is located at latitude 42.461777 degrees and longitude -96.383915 degrees.
  - The eastern bore point is located at latitude 42.461595 degrees and longitude -96.375660 degrees.
- The South Bore Site, containing two bore points with 50-foot buffers, is located in Section 7, Township 26 North, Range 10 East and Section 28, Range 86 North, Range 47 West in the Albaton, Iowa-Nebraska Quadrangle.
  - The western bore point is located at 42.236114 latitude degrees and longitude -96.339188 degrees.
  - The eastern bore point is located at latitude 42.229677 degrees and -96.322091 longitude degrees.
- The Central Office Site and Alternative Office Site are located in Section 12, Township 26 North, Range 8 East in the Walthill, Nebraska Quadrangle. The geometric center of the Central Office is located at latitude 42.245699 degrees and longitude -96.471441 degrees. The geometric center of the Alternative Central Office Site is located at latitude 42.235363 degrees and longitude -96.472626 degrees.
- The Emerson Office Site is located in Section 34, Township 27 North, Range 6 East in the Emerson, Nebraska Quadrangle. The geometric center of the Emerson Office is located at latitude 42.277056 degrees and longitude -96.726490 degrees.

2. DESKTOP REVIEW

Olsson reviewed publicly available information to identify areas with the potential to support wetlands, streams, and other aquatic resources within the Study Area. Data sources reviewed included aerial photography (ESRI 2020; Google Earth 2022), United States Geological Survey (USGS) topographic maps (USGS 2014), U.S. Fish and Wildlife Service National Wetlands Inventory (NWI) database (USFWS 2021), USGS National Hydrography Dataset (NHD) database (USGS 2021), U.S. Department of Agriculture (USDA) National Agricultural Imagery Program (NAIP) aerials, and Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury

County, Iowa Soil Survey data via the Soil Survey Geographic (SSURGO) database (SSURGO 2021). Data from these resources are shown on Figure 1A-L and Figure 3A-L in Appendix A. The desktop review identified areas that may have wetland indicators (e.g., mapped wetlands, areas with hydric soils, saturation visible on aerial imagery, etc.). The field investigation was not limited to or restricted to these areas identified by the desktop review. Additional points were taken for documentation of areas observed with wetland characteristics not previously identified on the desktop review.

2.1 USGS Topographic Maps

The Location Map (Figure 1A-L, Appendix A) indicates the relief at:

- Staging Area A is slightly sloped with elevations ranging from 1,420 feet above mean sea level (msl) in the southwest corner to 1,400 feet above msl in the northeast corner.
- Staging Area B is slightly sloped with elevations ranging from 1,160 feet above msl along the western boundary to 1,150 msl along the eastern boundary.
- Staging Area C is slightly sloped with elevations ranging from 1,260 feet above msl in the southwest corner to 1,240 feet above msl in the northeast corner.
- Staging Area D is slightly sloped with elevations ranging from 1,230 feet above msl in the northeast portion to 1,210 feet above msl in the southwest portion.
- Staging Area E is slightly sloped with elevations ranging from 1,071 feet above msl along the northern boundary to 1,064 feet above msl along the southern boundary.
- Staging Area F is slightly sloped with elevations ranging from 1,069 feet above msl within the northwest corner to 1,065 feet above msl along the eastern boundary.
- Wakefield Bore Sites
    - Slightly sloped with elevations ranging from 1,388 feet above msl at Bore Point 101 to 1,378 feet above msl at Bore Site 102
    - Generally flat with an elevation of 1,379 feet above msl at Bore Site 103
    - Slightly sloped with elevations ranging from 1,386 feet above msl at Bore Site 105 to 1,383 feet above msl at Bore Site 104
    - Slightly sloped with elevations ranging from 1,391 feet above msl at Bore Site 107 to 1,386 feet above msl at Bore Site 106
- North Bore Site
    - Sloped with elevations ranging from 1,100 feet above msl at the western bore point to 1,160 feet above msl at the eastern bore point.
- South Bore Site
    - Generally flat with an elevation of 1,050 feet above msl on both the western and eastern bore sites of the south bore site.
- The Central Office Site is generally flat with elevations ranging from 1,180 feet above msl to 1,185 feet above msl.

- The Alternative Central Office Site is flat with elevations ranging from 1,170 feet above msl to 1,175 feet above msl.
- The Emerson Office Site is 1,473 feet above msl at the location of the existing infrastructure. The area slopes steeply to the south to 1,458 feet above msl.

The USGS topographic layer depicts one unnamed perennial stream channel extending east and west across Staging Area A. An intermittent stream channel extends from the southern boundary of Staging Area A and intersects the perennial stream channel in the eastern portion of the staging area. An intermittent stream channel crosses a small portion of Staging Area B along the southern boundary. The Missouri River, a perennial river, is located between the western and eastern bore points at the North Bore Site and South Bore Site.

2.2 Aerial Imagery Reviews

The Site Map (Figure 2A-L, Appendix A) shows the Study Area at:

- Staging Area A as a pastured agricultural field with a water feature surrounded by shrubs extending west to east across the area.
- Staging Area B as a monocropped agricultural field bordered on the western side by a forested area.
- Staging Area C as a monocropped agricultural field.
- Staging Area D as a monocropped agricultural field bordered on the eastern side by a forested area.
- Staging Area E as a monocropped agricultural field.
- Staging Area F as a monocropped agricultural field.
- Wakefield Bore Sites
    - 101 Bore Point as a roadside ditch on the north side of 858th Road.
    - 102 Bore Point as a roadside ditch on the south side of 858th Road.
    - 103 Bore Point as a vegetated field northwest of the intersection of Industrial Road and a paved walking trail along a levee.
    - 104 Bore Point as a roadside ditch on the east side of Nebraska Highway 35.
    - 105 Bore Point as a roadside ditch on the west side of Nebraska Highway 35.
    - 106 Bore Point as a gravel road (West 1st Avenue) south of a residential house.
    - 107 Bore Point as a gravel parking lot next to a baseball field.
- North Bore Site
    - Western Bore Point as a grassy area southeast of the intersection of 29th Street and Aspen Plaza.
    - Eastern Bore Point as a grassy area located east of South Lewis Boulevard.
- South Bore Site

    - Western Bore Point as an agricultural field bordered by forest on the southern and eastern edges.
    - Eastern Bore Point as a grassy area bordered by forest along the western edge of the area.
- Central Office Site, located southeast of the intersection of Elk Street and Buffalo Trail, as a vacant grassy field with a building abutting the area to the south.
- Alternative Central Office site, located southwest of the intersection of Bluff Street and West Mercer Street, as a gravel/patchy grass parking lot with a building on the west edge of the area.
- Emerson Office Site, located directly east of Nebraska Highway 9 and directly south of Warnock Street, as an existing building with a parking lot to the north and vacant grassy area to the south.

2.3 NWI and NHD Databases

On the Natural Resources Map (Figure 3A-L, Appendix A), the NHD and NWI depict the following within the Study Area:

- In Staging Area A, the NHD depicts one unnamed perennial channel extending west and east across Staging Area A and one unnamed intermittent channel which flows into the perennial channel near the eastern boundary of Staging Area A. The NWI depicts one freshwater forested/shrub wetland extending from the eastern boundary toward the western boundary where it transitions into a freshwater emergent wetland. These two wetlands are concurrent with the NHD perennial channel depiction. An NWI riverine habitat is also depicted extending south from the freshwater forested/shrub wetland near the eastern boundary of the staging area. The riverine habitat continues to the southern boundary of the Study Area and is concurrent with the intermittent channel depicted by the NHD.
- In Staging Area B, the NHD depicts one intermittent stream intersecting the small protruding section of the staging area along the southern boundary.
- In Staging Area E, the NHD depicts one intermittent stream extending northeast from the southern boundary terminating in the southeast corner of the staging area. The NWI depicts one riverine habitat consistent with the NHD depiction; however, the riverine habitat extends from the southern boundary to the eastern boundary of the staging area.
- In Staging Area F, the NHD depicts an intermittent stream extending southeast from the northern boundary and diverging into two intermittent steams within the southeast corner of the staging area. A small intermittent channel extends from the southern boundary. The NWI depicts riverine habitats consistent with all the NHD depictions. Near the divergence of the intermittent stream, the NWI depicts a freshwater pond.

The NHD and NWI do not depict any features within Staging Areas C and D, the buffer zones at the Wakefield Bore Sites, the North Bore Site, the South Bore Site, the Central Office Site, Alternative Central Office Site, or the Emerson Office Site.

2.4 SSURGO Database

The Natural Resources Map (Figure 3A-L, Appendix A) identified the following SSURGO soil map units within the Study Area:

Staging Area A:

- 3518—Lamo silty clay loam, 0 to 2 percent slopes, occasionally flooded, 100 percent hydric rating
- 6603—Alcester silty clay loam, 2 to 6 percent slopes, 1 percent hydric rating
- 6813—Moody silty clay loam, 6 to 11 percent slopes, non-hydric rating
- 6814—Moody silty clay loam, 6 to 11 percent slopes eroded, non-hydric rating
- 7153—Kennebec silt loam, 0 to 3 percent slopes, rarely flooded, 2 percent hydric rating
- 7716—McPaul silt loam, occasionally flooded, 2 percent hydric rating
- 7770—Colo silty clay loam, occasionally flooded, 100 percent hydric rating
- 7788—Luton silty clay loam, rarely flooded, 100 percent hydric rating

Staging Area B

- 6603—Alcester silty clay loam, 2 to 6 percent slopes, 1 percent hydric rating
- 7053—Kennebec silt loam, 0 to 3 percent slopes, occasionally flooded, overwash, 12 percent hydric rating

Staging Area C

- 6603—Alcester silty clay loam, 2 to 6 percent slopes, 1 percent hydric rating
- 8006—Ida silt loam, 11 to 17 percent slopes, eroded, non-hydric rating
- 8067—Monona silt loam, 1 to 6 percent slopes, non-hydric rating
- 8071—Monona silt loam, 11 to 17 percent slopes, non-hydric rating
- 8078—Monona silt loam, 6 to 11 percent slopes, non-hydric rating

Staging Area D

- 6603—Alcester silty clay loam, 2 to 6 percent slopes, 1 percent hydric rating
- 7716—McPaul silt loam, occasionally flooded, 2 percent hydric rating

Staging Area E

- 7710—Albaton silty clay, 0 to 2 percent slopes, occasionally flooded, 90 percent hydric rating
- 7744—Haynie silt loam, deep loess, 0 to 2 percent slopes, rarely flooded, non-hydric rating
- 7856—Sarpy soils, occasionally flooded, non-hydric rating
- 7876—Onawa and Haynie soils, occasionally flooded, non-hydric rating
- 7880—Onawa silty clay, occasionally flooded, non-hydric rating
- 7889—Onawet silty clay loam, frequently flooded, 100 percent hydric rating

Staging Area F

- 1146—Onawa silty clay, 0 to 2 percent slopes, occasionally flooded, 5 percent hydric rating
- 1237B—Sarpy loamy fine sand, 2 to 5 percent slopes, occasionally flooded, non-hydric rating
- 1238—Sarpy-Morconick complex, 0 to 2 percent slopes, occasionally flooded, non-hydric rating
- 1513—Grable-Morconick complex, 0 to 2 percent slopes, occasionally flooded, non-hydric rating
- 1524—Morconick fine sandy loam, 0 to 2 percent slopes, occasionally flooded, 5 percent hydric rating
- 2515—Percival-Albaton complex, 0 to 2 percent slopes, occasionally flooded, 32 percent hydric rating

Wakefield Bore Sites

- **Bore Point 101**
  - 6811—Moody silty clay loam, 2 to 6 percent slopes, 3 percent hydric rating
- **Bore Point 102**
  - 7099—Zook silty clay loam, 0 to 2 percent slopes, occasionally flooded, 91 percent hydric rating
- **Bore Point 103**
  - 7099—Zook silty clay loam, 0 to 2 percent slopes, occasionally flooded, 91 percent hydric rating
  - 7153—Kennebec silt loam, 0 to 3 percent slopes, rarely flooded, 2 percent hydric rating
- **Bore Point 104**
  - 7153—Kennebec silt loam, 0 to 3 percent slopes, rarely flooded, 2 percent hydric rating
- **Bore Point 105**
  - 7153—Kennebec silt loam, 0 to 3 percent slopes, rarely flooded, 2 percent hydric rating
- **Bore Point 106**
  - 6603—Alcester silty clay loam, 2 to 6 percent slopes, 1 percent hydric rating
- **Bore Point 107**
  - 6603—Alcester silty clay loam, 2 to 6 percent slopes, 1 percent hydric rating

Northern Bore Site

- **Western Bore Point**
  - 7880—Onawa silty clay, occasionally flooded, 2 percent hydric rating
- **Eastern Bore Point**
  - 1E3—Ida silt loam, 14 to 20 percent slopes, severely eroded, non-hydric rating
  - 12C—Napier silt loam, 5 to 9 percent slopes, non-hydric rating

Southern Bore Site

- **Western Bore Point**
  - 7880—Onawa silty clay, occasionally flooded, non-hydric rating
- **Eastern Bore Point**
  - 1237B—Sarpy loamy fine sand, 2 to 5 percent slopes, occasionally flooded, non-hydric rating
  - 1238—Sarpy-Morconick complex, 0 to 2 percent slopes, occasionally flooded, non-hydric rating

Central Office Site

- 7053—Kennebec silt loam, 0 to 3 percent slopes, occasionally flooded, overwash, 12 percent hydric rating
- 8010—Ida silt loam, 6 to 11 percent slopes, eroded, non-hydric rating
- 8079—Monona silt loam, 6 to 11 percent slopes, eroded, non-hydric rating

Alternative Central Office Site

- 6603— Alcester silty clay loam, 2 to 6 percent slopes, 1 percent hydric rating
- 7153—Kennebec silt loam, 0 to 3 percent slopes, rarely flooded, 2 percent hydric rating

Emerson Office Site

- 6750—Nora silt loam, 11 to 17 percent slopes, eroded, non-hydric rating

The hydric percentage indicates what percentage of the soil map unit meets the criteria for hydric soils, which may indicate wetland conditions.

2.5 Climate Analysis for Wetlands Tables

To identify potential wetland areas in farmed fields, methods identified in the USDA Natural Resources Conservation Service Part 650 Engineering Field Handbook, Chapter 19 – Hydrology Tools for Wetland Identification and Analysis (USDA NRCS 2012) were used. As part of the analysis, Climate Analysis for Wetlands Tables (WETS Tables) were completed to determine in which years NAIP aerials were taken during “normal” precipitation periods. The NAIP aerials for “normal” years were then reviewed for signs of wetland hydrology in the agricultural fields (Appendix B). Possible hydrology indicators such as saturation and inundation were then outlined and overlaid on each other. Areas where these outlines overlapped in a majority of the years were identified as Final WETS in Appendix B. The Final WETS identified during the analysis represent potential boundaries of farmed wetland locations based on wetland characteristics observable on NAIP aerial imagery. WETS Tables analyses were completed for Staging Areas A, B, C, D, E, and F, and Wakefield Bore Sites 101 and 102. The WETS analysis for Staging Area E also includes the western bore point of the South Bore Site. Wakefield Bore Points 101 and 102 do not contain any WETS Areas; therefore, the Combined WETS Maps and Final WETS Maps do not contain any WETS or Final WETS Areas. In 2011, Staging Area F experienced a major flood event. Although this year was considered "normal", the flood significantly affected the ability to detect signs of wetland hydrology; therefore, these signatures were not included to determine the Final WETS Map.

3. FIELD INVESTIGATION METHODS

Olsson staff visited the Study Area on July 11, 12, 13, 19, 26, August 1, and November 8, 2023, to complete the wetland delineation field investigation. The wetland delineation followed methodology described in the *U.S. Army Corps of Engineers Wetland Delineation Manual* (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (USACE 2010). All conditions described represent conditions at the time of the field investigation. U.S. Army Corps of Engineers Wetland Determination Data Forms are included in Appendix C. Photographs were taken during the visit and are shown in Appendix D. Sample point locations, photo locations, and delineated water features are shown on Figure 4A-L, Appendix A.

4. RESULTS

Wetlands and Other Waters

A total of nine water features were delineated within the Study Area. Two PEMA/C wetlands, Wetlands 4 and 6, were identified along the channel (Channel 4) within Staging Area A. Five PEMA/C wetlands, Wetlands 16, 17, 18, 23, and 25, were identified within the low-laying areas in agricultural fields in Staging Area E. One PEMA/C wetland, Wetland 42, was identified within the buffer zone of Wakefield Bore Point 104. One PEMA/C wetland, Wetland 50, was identified at the central office location in the town of Winnebago.

Table 1 summarizes the wetlands and other waters delineated within the Study Area.

Table 1. Delineated Wetlands and Other Waters.

Feature ID	Sample Point(s)	Cowardin Classification*	Photograph(s)	Figure(s)	Size (Acres)
Wetland 4	4	PEMA/C	4a, 4b	4A	0.96
Wetland 6	6	PEMA/C	6	4A	0.19
Wetland 16	16	PEMA/C	16	4E	0.08
Wetland 17	17	PEMA/C	17	4E	0.09
Wetland 18	18	PEMA/C	18	4E	0.02
Wetland 23	23	PEMA/C	23	4E	0.05
Wetland 25	25	PEMA/C	25	4E	0.61
Wetland 42	42	PEMA/C	42	4G	0.04
Wetland 50	50	PEMA/C	50	4J	0.04
TOTAL				**PEMA/C**	**2.08**

PEMA/C = Palustrine Emergent Temporarily Flooded / Seasonally Flooded (Cowardin et al. 1979)

Stream Channels

One intermittent channel was identified flows west to east across Staging Area A and continues outside of the Study Area. Table 2 summarizes the stream channels identified within the Study Area.

Table 2. Delineated Streams.

Feature ID	Sample Point(s)	Flow Type	Photograph(s)	Figure(s)	OHWM* Width (Feet)	Length (Linear Feet)/Acres
Channel 4	4	Intermittent	4a, 4b	4A	2	1,550/0.04
TOTAL						**1,550/0.04**

*OHWM – ordinary high-water mark

5. DISCUSSION

Wetlands 4 and 6 were identified as PEMA/C fringe wetlands located along the banks of Channel 4, a two-foot-wide intermittent channel in Staging Area A. Due to the surface connection of Wetlands 4 and 6 to Channel 4, these wetlands may be considered jurisdictional under the Section 404 of the Clean Water Act. Five wetlands, Wetlands 16, 17, 18, 23, and 25, were isolated PEMA/C wetlands associated with low-laying areas within agricultural fields in Staging Area E. One wetland, Wetland 42, was associated with a low-laying area within a roadside ditch at

Wakefield Bore Point 104. Wetland 50 was associated with a low-laying area at the Central Office Site.

Climatic conditions were not typical at the Sample Points (SP) taken on July 12, 13, 19, 26, and August 1, 2023, due to recent heavy rainfall events.

Sample Points (SP) 3, 12, 13, 20, 33, and 34 were identified during the WETS analysis as potential wetlands. These areas contained hydric soils but lacked dominant hydrophytic vegetation and sufficient wetland hydrology and were considered to be upland.

SP 10 was identified during the WETS analysis as a potential wetland. This area contained dominant hydrophytic vegetation but lacked hydric soils and sufficient wetland hydrology and was considered upland.

SP 19 was identified during the WETS analysis as a potential wetland. This area contained sufficient wetland hydrology but lacked dominant hydrophytic vegetation and hydric soil and was considered upland.

SPs 5, 11, 14, 21, 22, 24, 26, 27, 28, 29, 31, 32, 35, and 36 were identified during the WETS analysis as potential wetlands. However, these areas lacked all three wetland indicators and were considered upland.

SPs 17 and 18 do not contain vegetation due to farming practices; however, with the presence of hydric soils and sufficient wetland hydrology, it is likely vegetation would be hydrophytic in the absence of farming practices. These areas were considered wetlands.

SPs 19, 22, 24, 26, 27, 28, 29, 30, 31, 32, 35, 36, 37, and 48 do not contain vegetation due to farming practices. However, with the lack of hydric soils and sufficient wetland hydrology, it is unlikely vegetation would be hydrophytic in the absence of farming practices. These areas were considered upland.

SP 34 does not contain vegetation due to farming practices. This SP contained hydric soil; however, with the lack of sufficient wetland hydrology, it is unlikely vegetation would be hydrophytic in the absence of farming practices.

SP 45 contains vegetation that is significantly disturbed due to development and is not present. However, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely vegetation would be hydrophytic. This area was considered upland.

SP 50 lacked dominant hydrophytic vegetation, but hydric soils and sufficient wetland hydrology were observed. This area was considered a wetland.

This report has been prepared for the use of the Winnebago Tribe of Nebraska. It is intended for specific application to the proposed project and has been produced in accordance with generally accepted practices. If any changes occur within the Study Area, or regarding previously outlined methodologies or regulations, the information in this report cannot be considered valid unless it has been further reviewed and verified by Olsson.

6. REFERENCES

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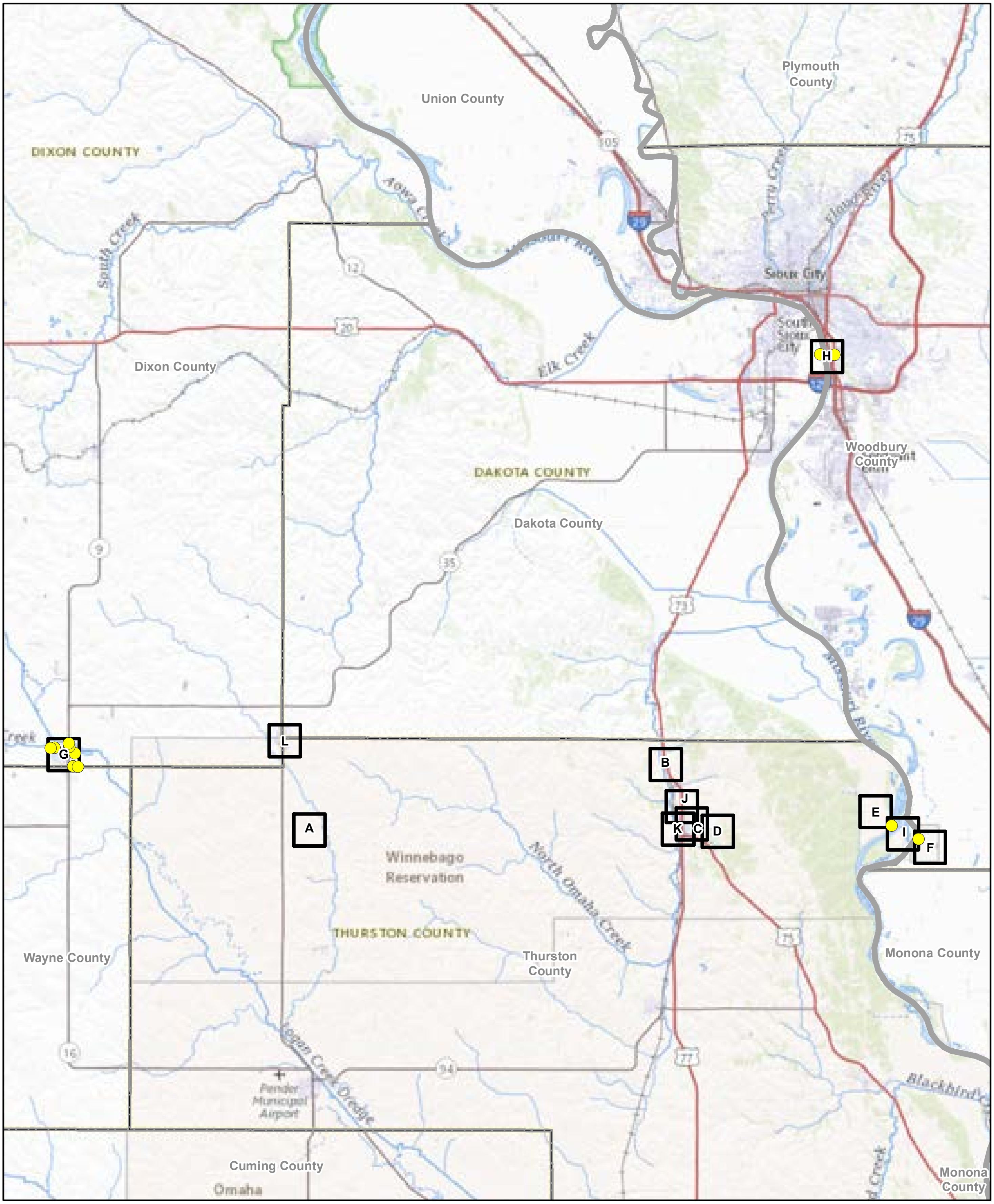
APPENDIX A
Figures



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Winnebago Tribe Broadband Connectivity Project

Dakota, Dixon, Thurston, Wayne Counties, Nebraska
Woodbury County, Iowa

Index Map

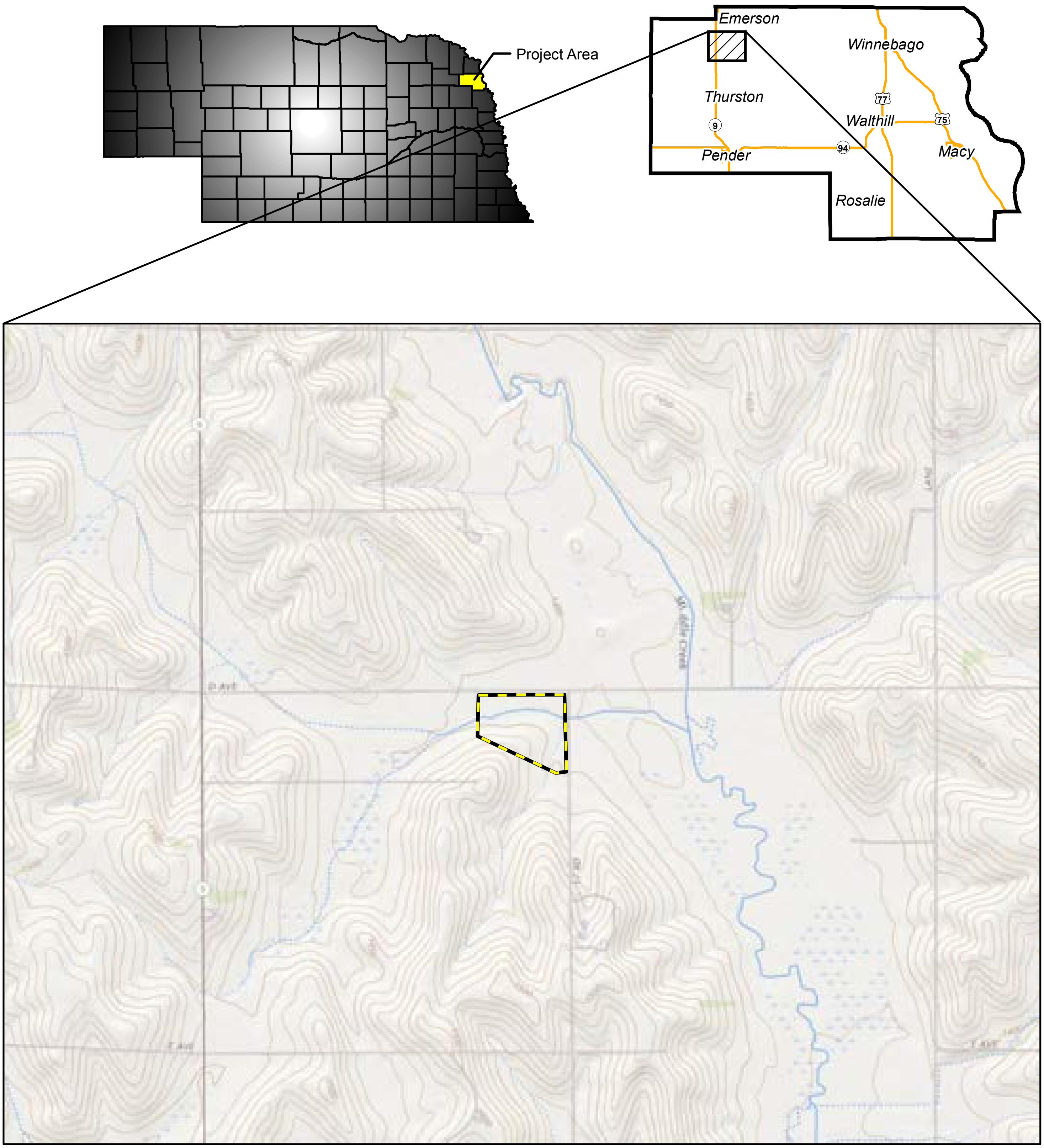
Figure 1

olsson

WGS 1984 ARC System Zone 11 | Olsson Project # 021-05175 | Basemap: USGSTopo

NEBRASKA

THURSTON COUNTY



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0 500 1,000 2,000 ft

1 " = 2,000 '

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area A Delineation
Thurston County, Nebraska

Location Map
Figure 1A

olsson

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: USGSTopo

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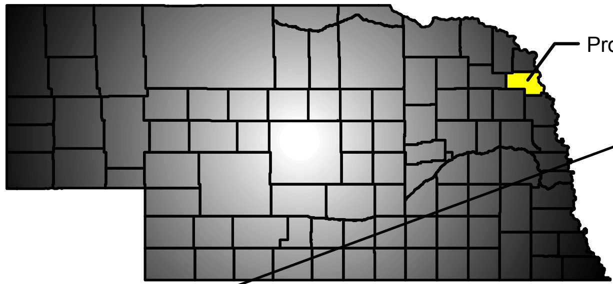
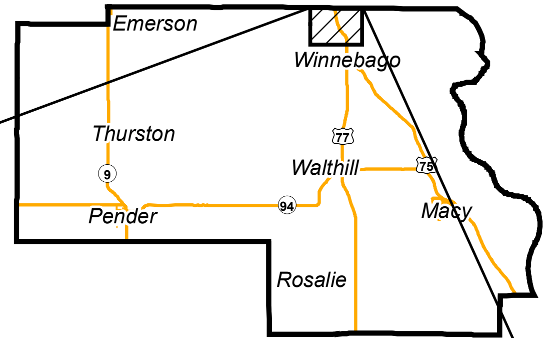
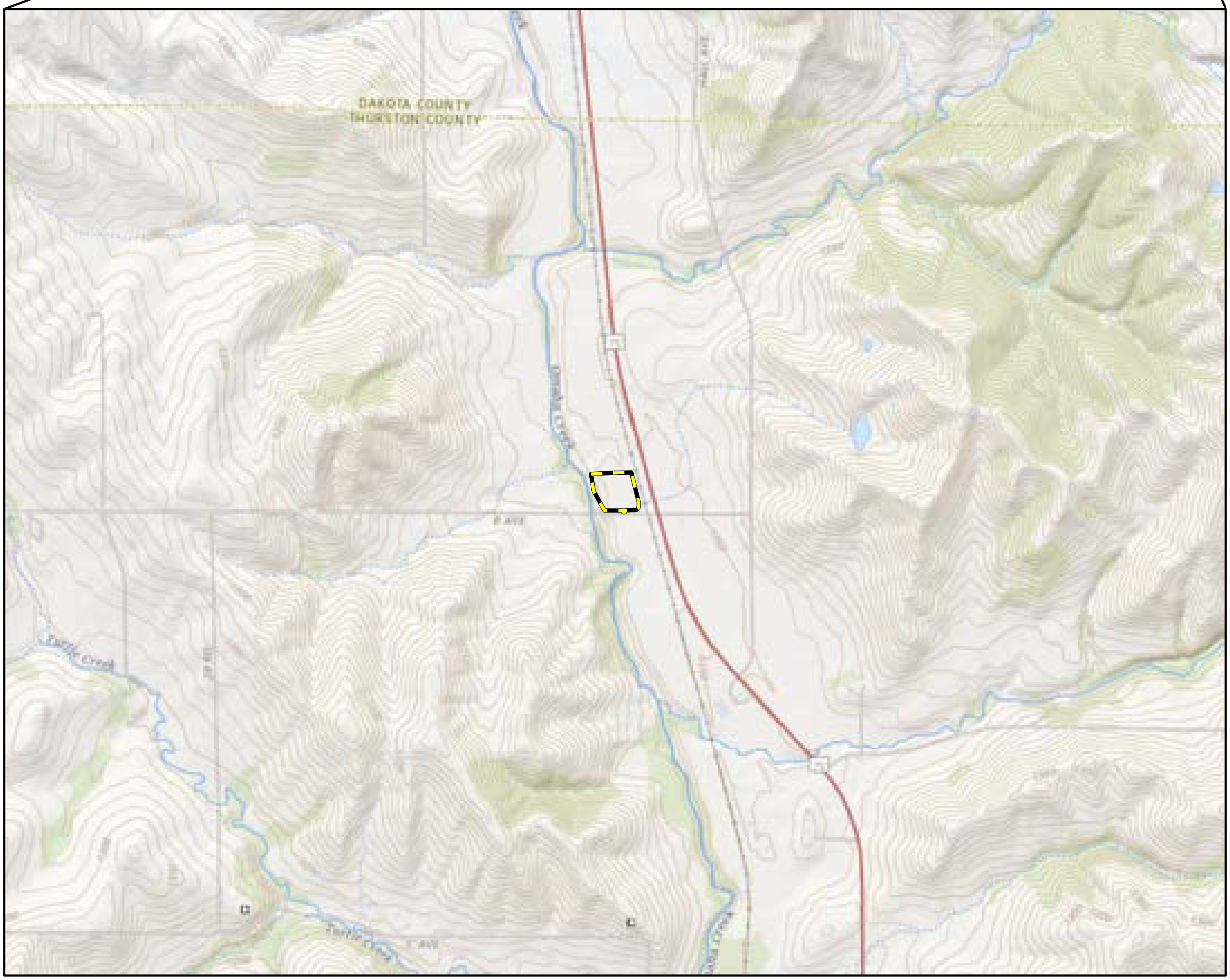


THURSTON COUNTY





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1 " = 2,000 '

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area B Delineation
Thurston County, Nebraska

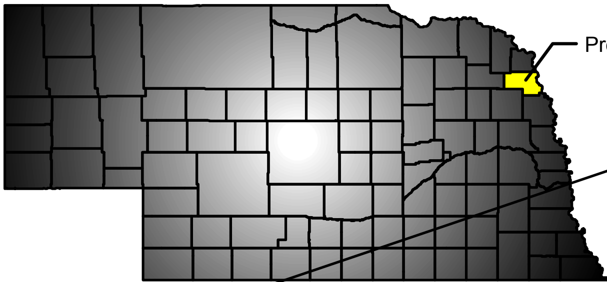
Location Map
Figure 1B

WGS 1984 ARC System Zone 11

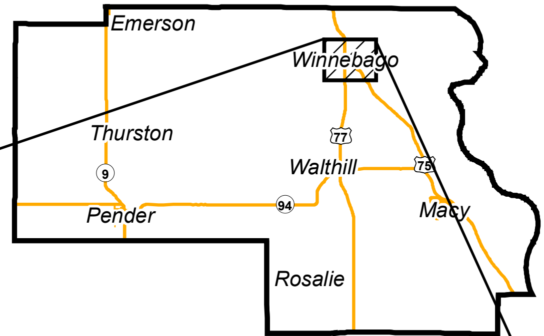
Olsson Project # 021-05175

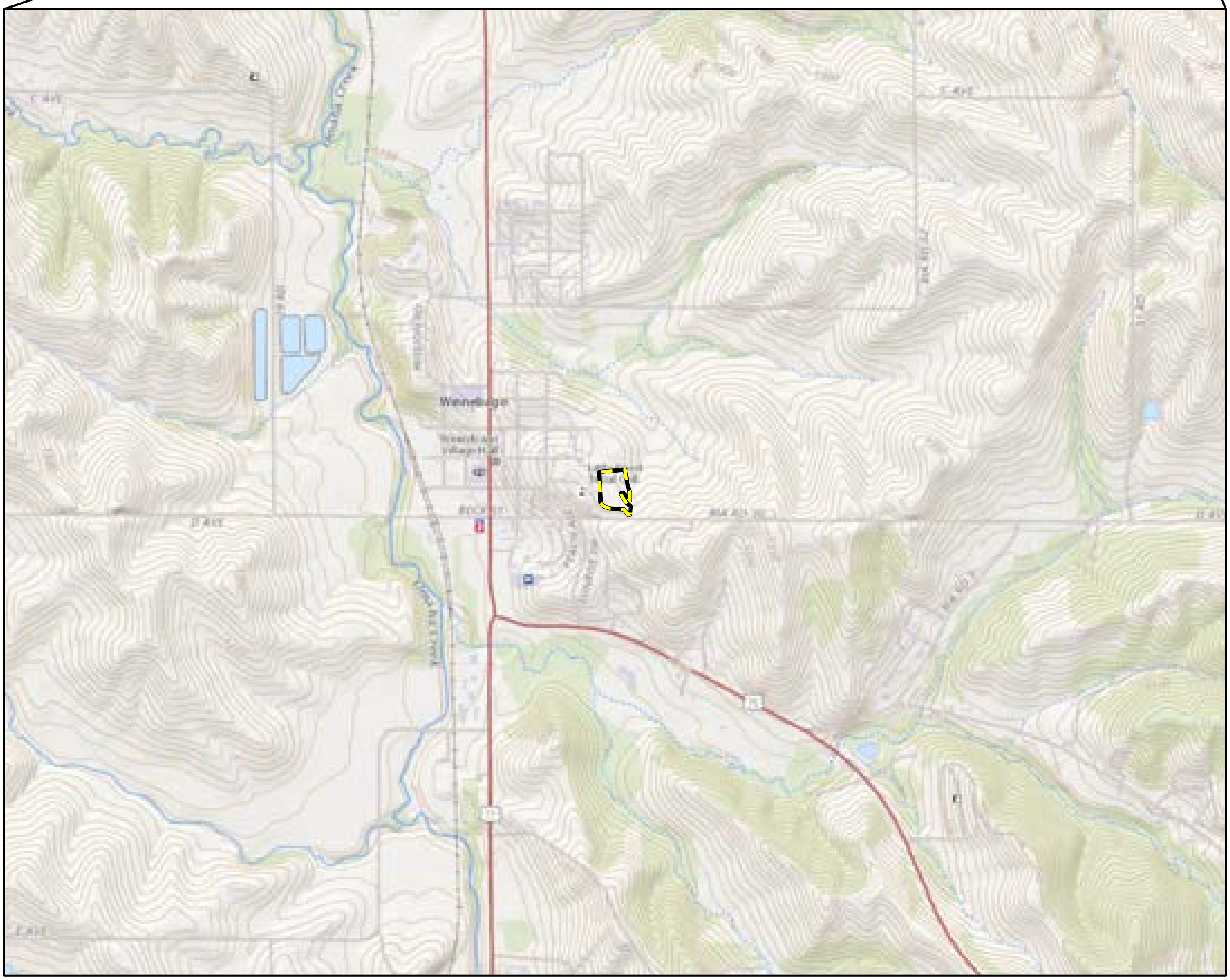
Basemap: USGSTopo

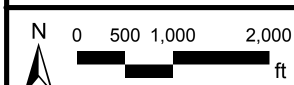
NEBRASKA



THURSTON COUNTY







Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area C Delineation
Thurston County, Nebraska
Location Map
Figure 1C

WGS 1984 ARC System Zone 11 | Olsson Project # 021-05175 | Basemap: USGSTopo

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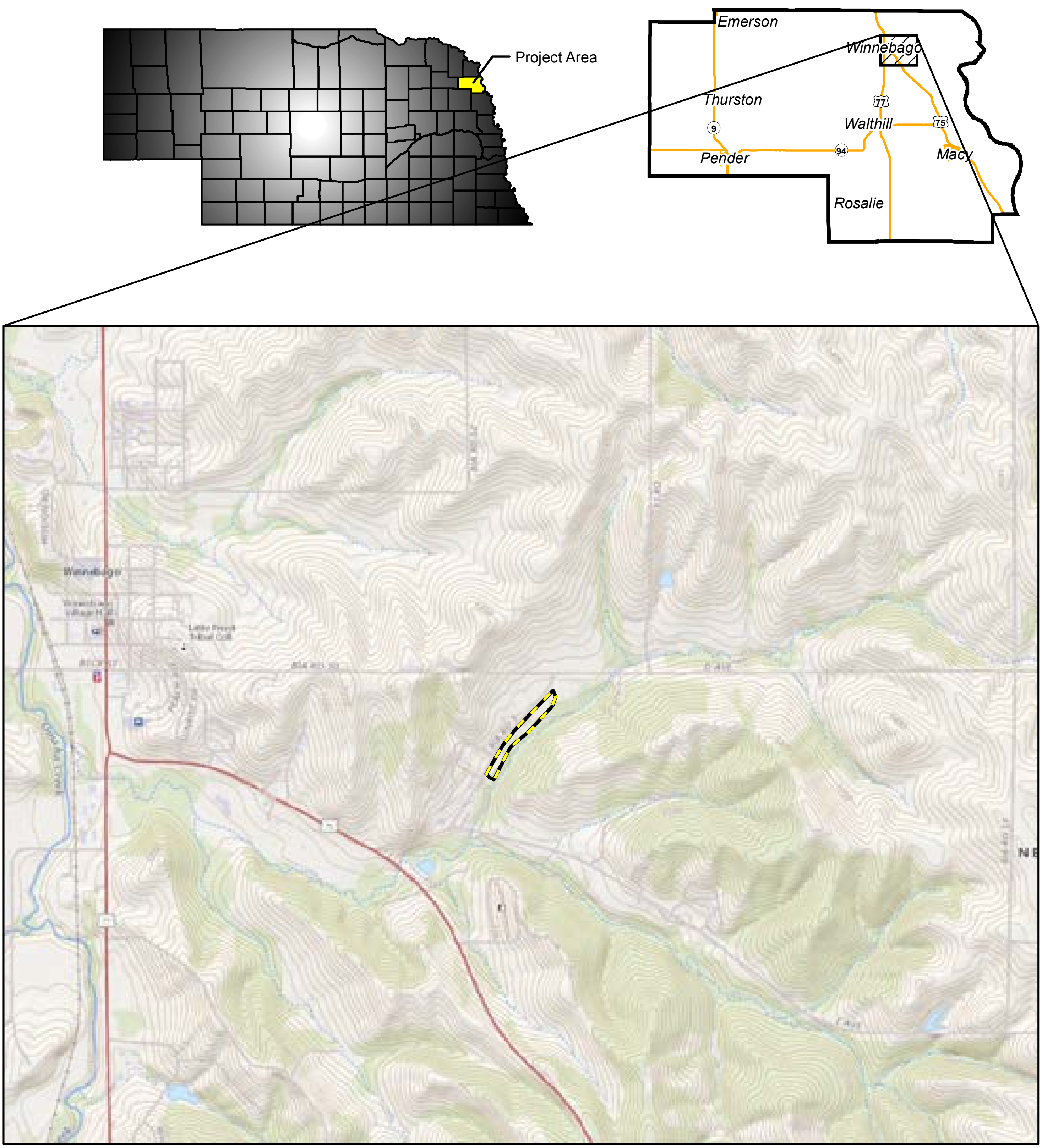
NEBRASKA

THURSTON COUNTY



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1 " = 2,000 '

Study Area

olsson

Winnebago Tribe Broadband Connectivity Project
Staging Area D Delineation

Thurston County, Nebraska

Location Map

Figure 1D

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: USGSTopo

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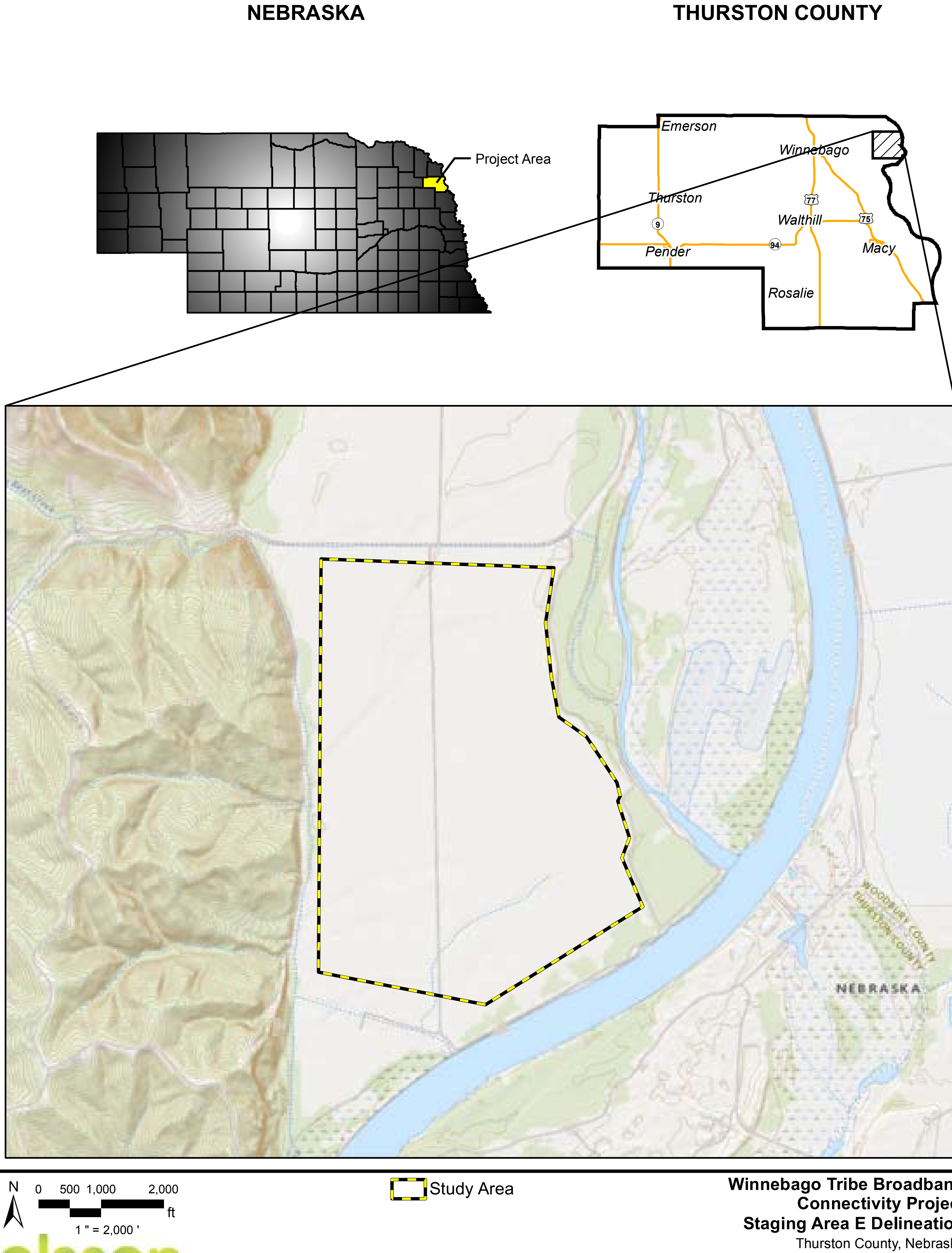

Winnebago Tribe Broadband Connectivity Project
Staging Area E Delineation
Thurston County, Nebraska

Location Map
Figure 1E

olsson

WGS 1984 ARC System Zone 11 | Olsson Project # 021-05175 | Basemap: USGSTopo

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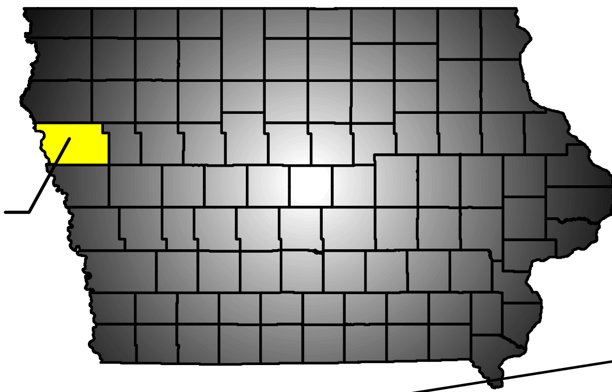
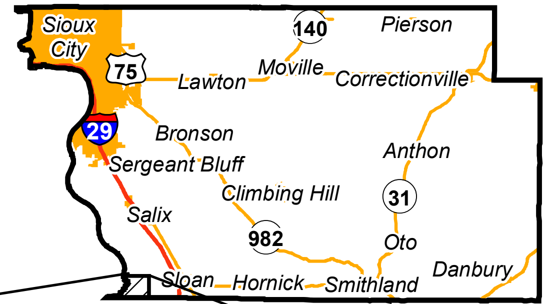
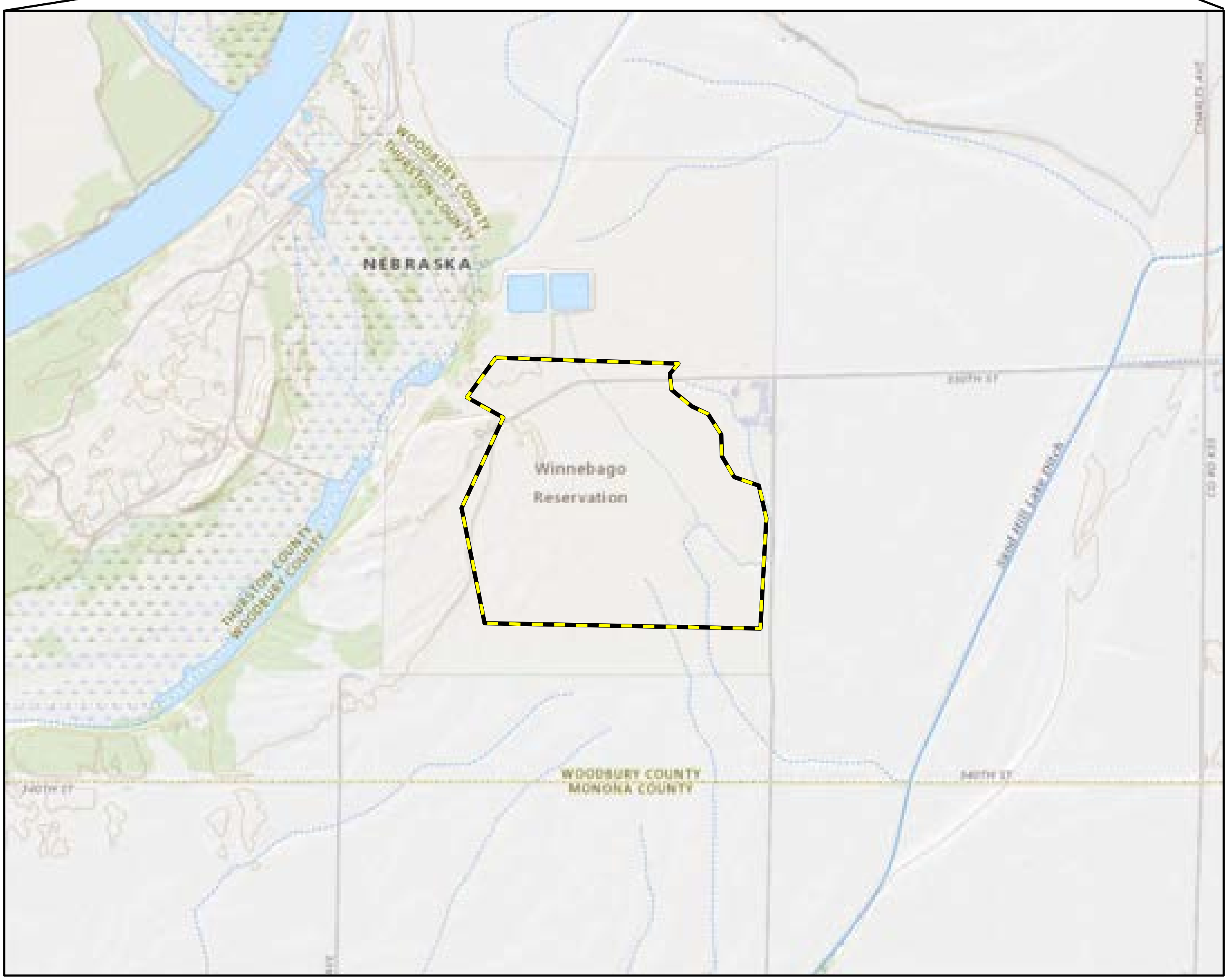


WOODBURY COUNTY





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1 " = 2,000 '

olsson

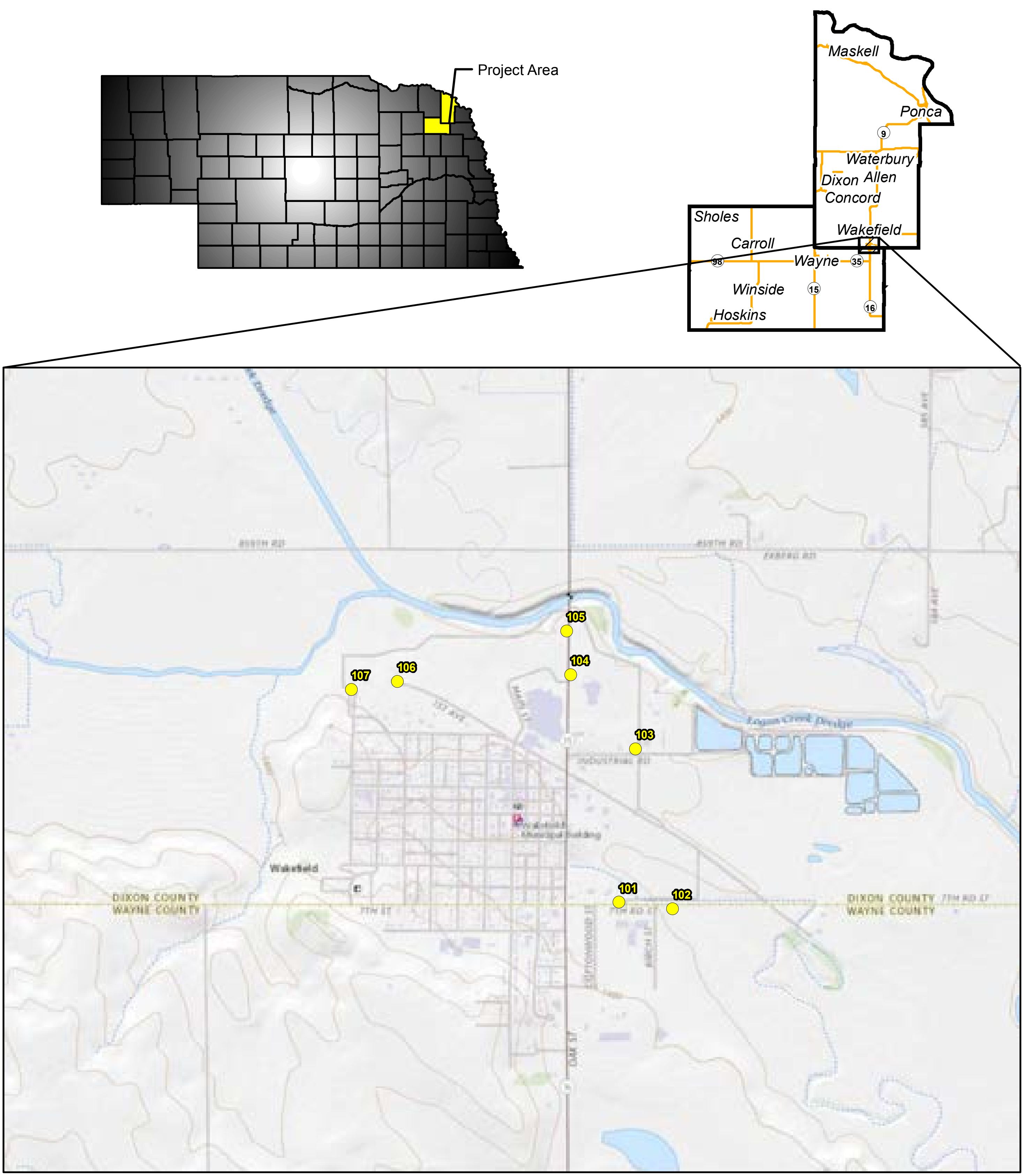
Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area F Delineation
Woodbury County, Iowa
Location Map
Figure 1F

WGS 1984 ARC System Zone 11
Olsson Project # 021-05175
Basemap: USGSTopo

NEBRASKA

DIXON AND WAYNE COUNTIES



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1 " = 2,000 '

olsson

Bore Point

Winnebago Tribe Broadband Connectivity Project
Wakefield Bore Sites Delineation
Dixon and Wayne Counties, Nebraska

Location Map
Figure 1G

WGS 1984 ARC System Zone 11 | Olsson Project # 021-05175 | Basemap: USGSTopo

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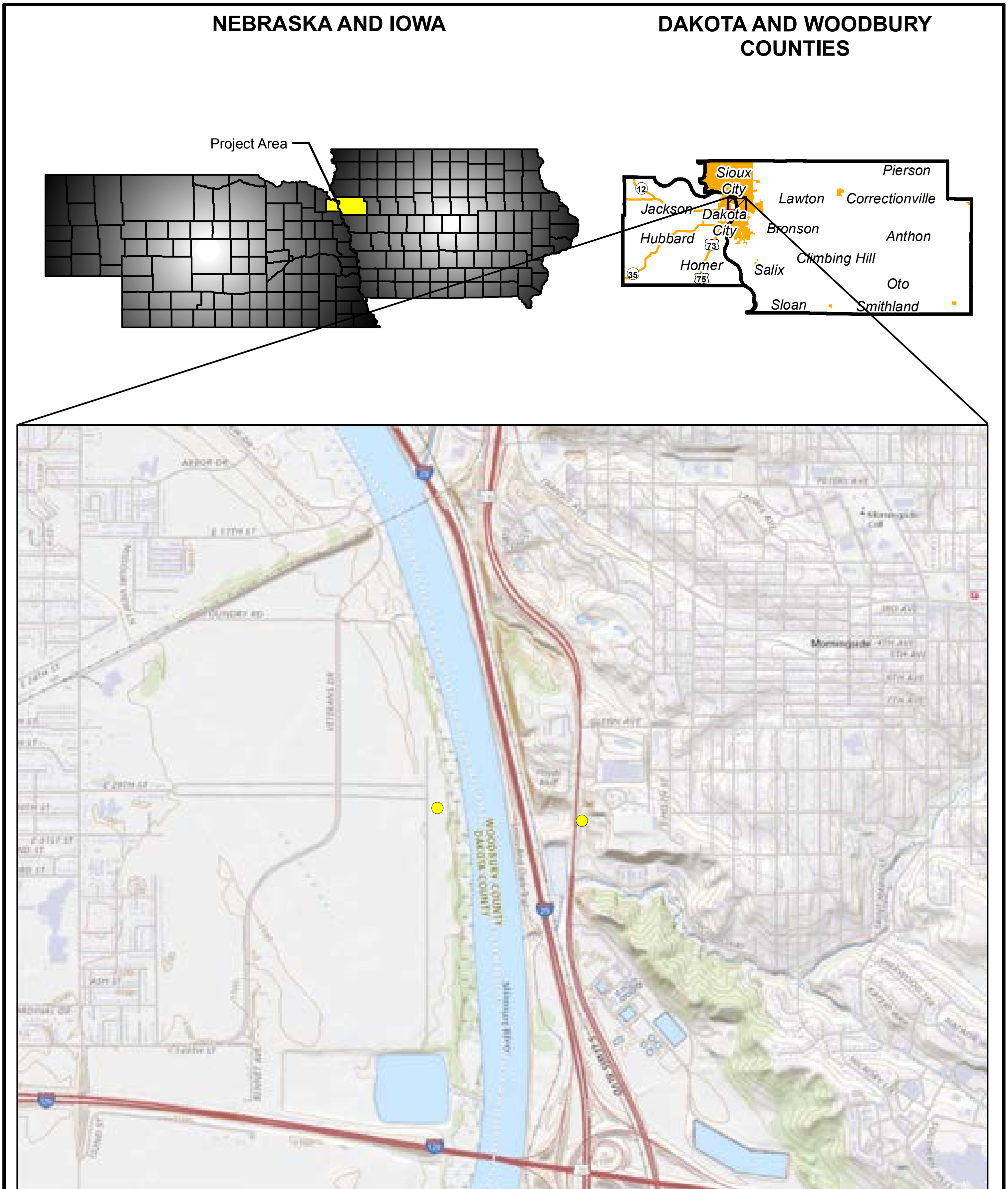

Bore Point

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0 500 1,000 2,000 ft

1 " = 2,000 '

Winnebago Tribe Broadband Connectivity Project
North Bore Site Delineation
Dakota County, Nebraska
Woodbury County, Iowa

Location Map

Figure 1H

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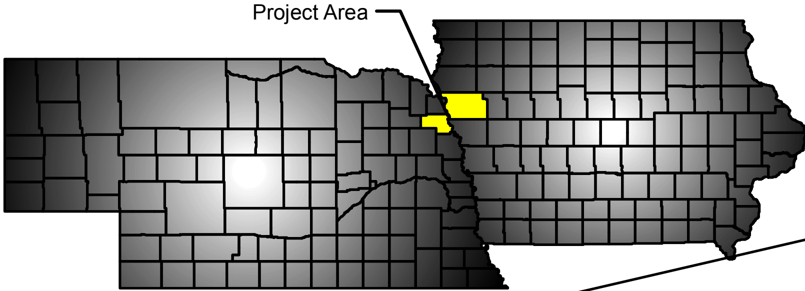
WGS 1984 ARC System Zone 11

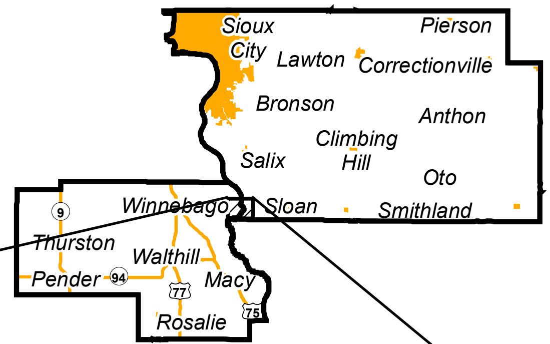
Olsson Project # 021-05175

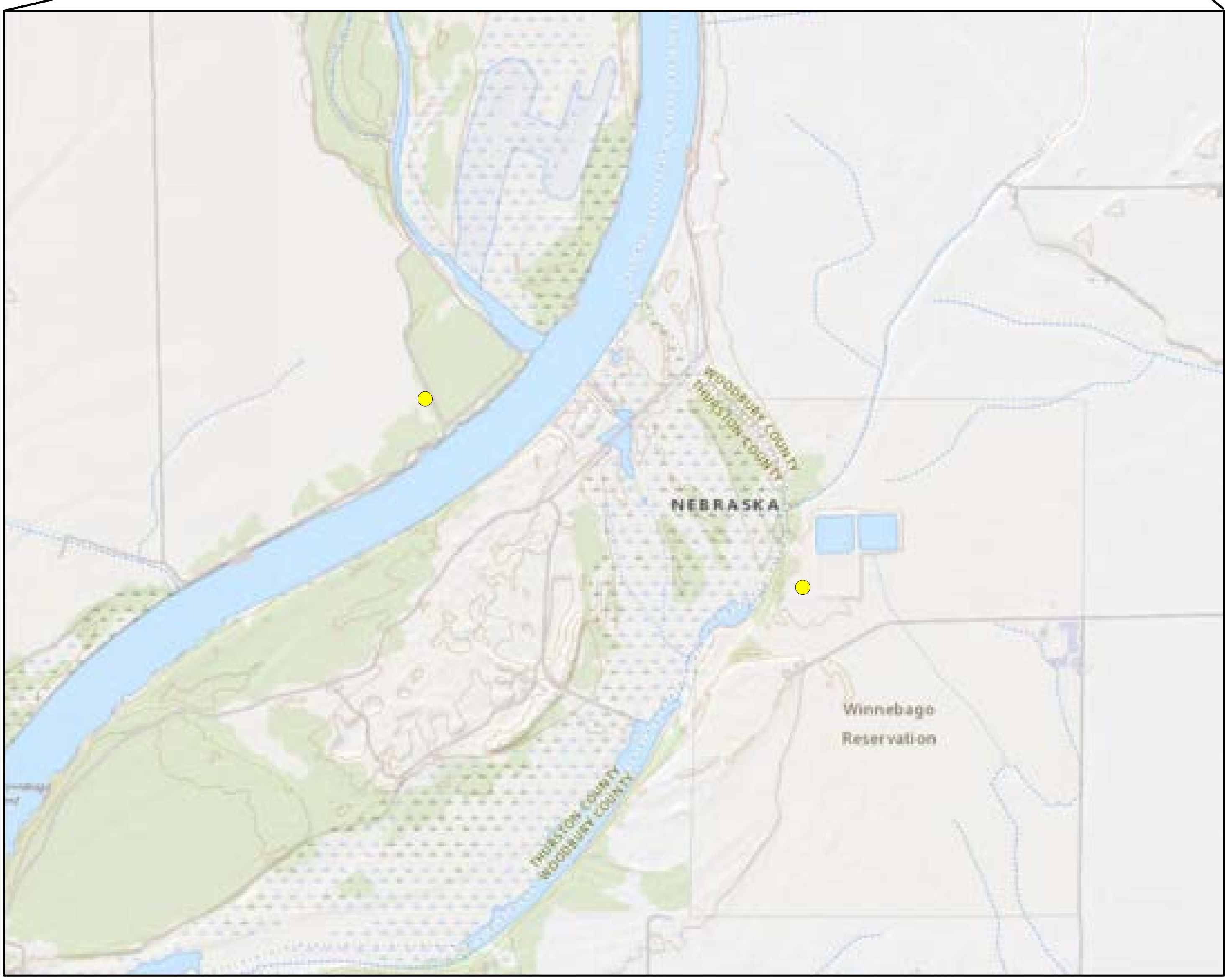
Basemap: USGSTopo

NEBRASKA AND IOWA



THURSTON AND WOODBURY COUNTIES





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ft
1 " = 2,000 '

Bore Point

Winnebago Tribe Broadband Connectivity Project
South Bore Site Delineation
Thurston County, Nebraska
Woodbury County, Iowa
Location Map
Figure 1I

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Olsson Project # 021-05175
Basemap: USGSTopo

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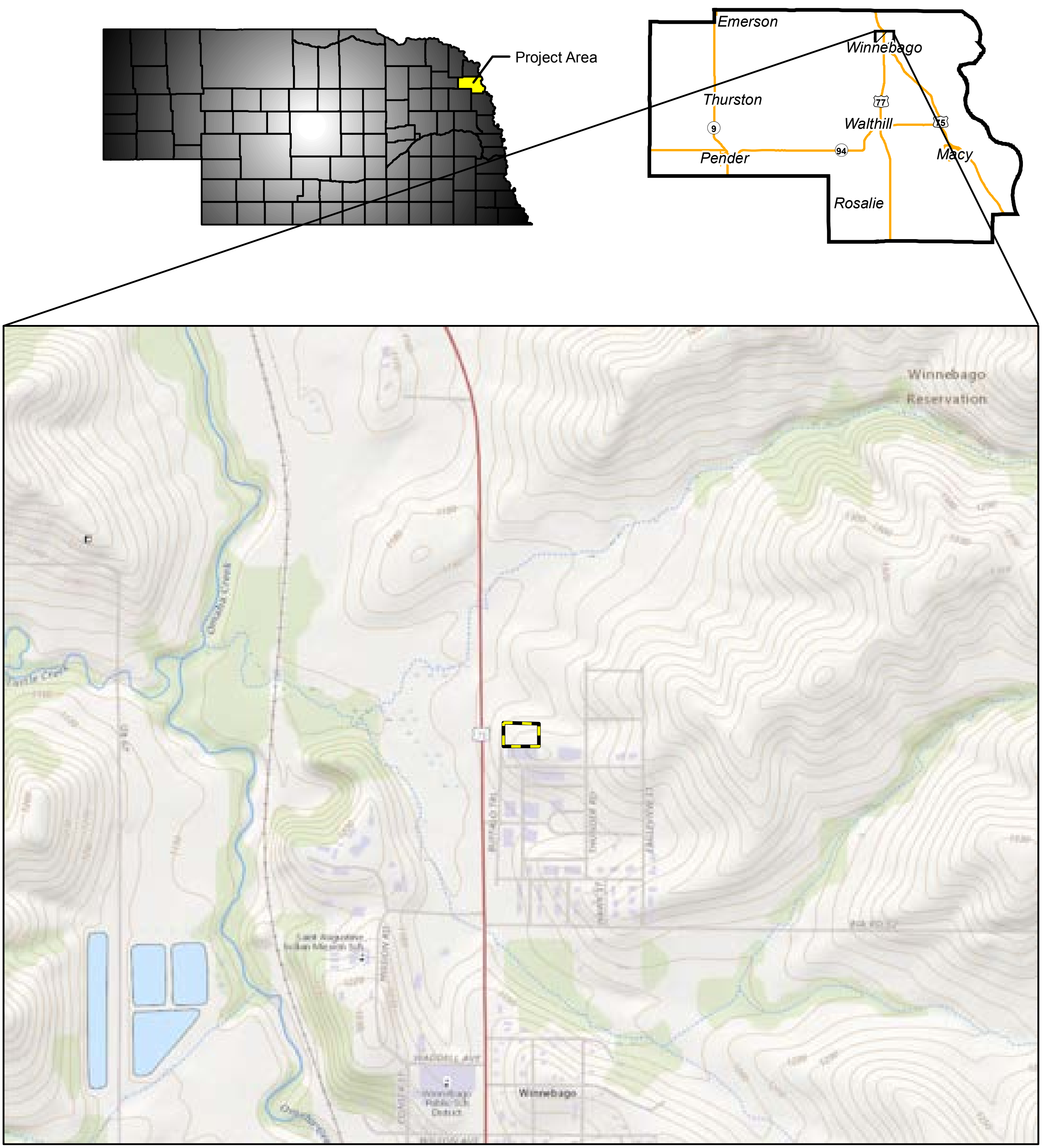
NEBRASKA **THURSTON COUNTY**



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ft
1 " = 1,000 '

Study Area

Winnebago Tribe Broadband Connectivity Project
Central Office Delineation
Winnebago, Thurston County, Nebraska
Location Map
Figure 1J

WGS 1984 ARC System Zone 11 Olsson Project # 021-05175 Basemap: USGSTopo

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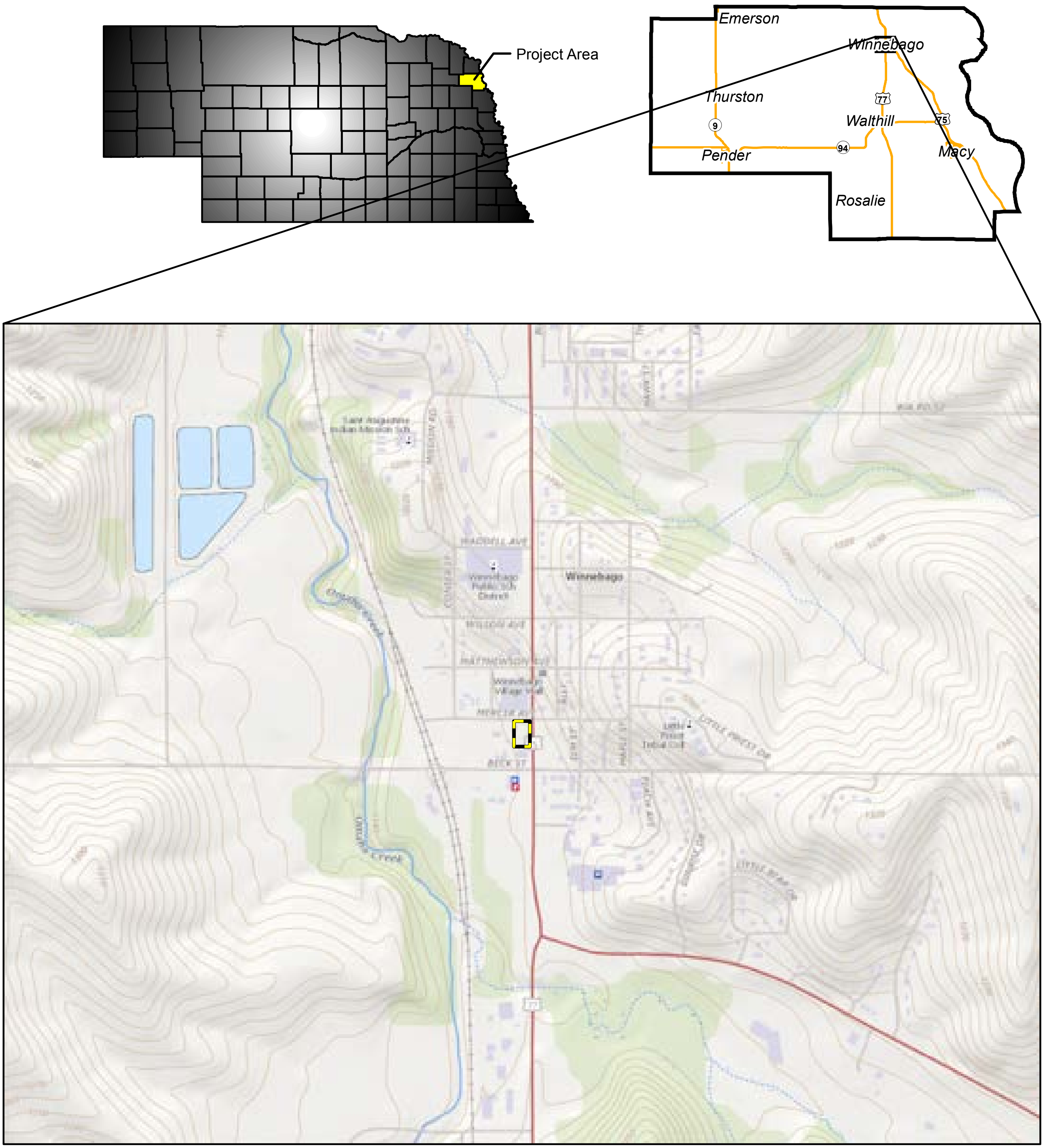
NEBRASKA **THURSTON COUNTY**



N

0 250 500 1,000 ft

1 " = 1,000 '

olsson

Study Area

Winnebago Tribe Broadband Connectivity Project
Alternate Central Office Delineation

Winnebago, Thurston County, Nebraska

Location Map

Figure 1K

WGS 1984 ARC System Zone 11 Olsson Project # 021-05175 Basemap: USGSTopo

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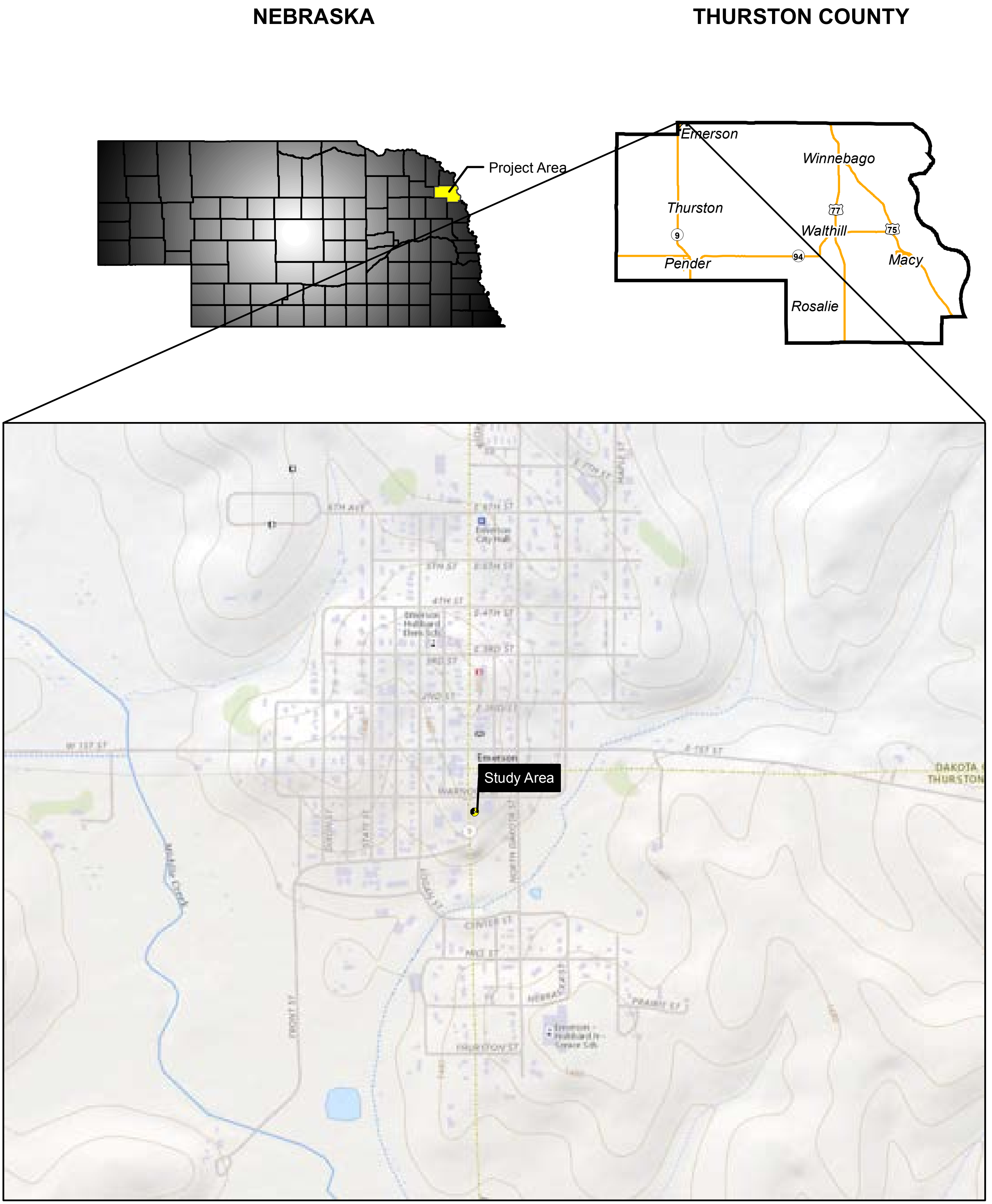
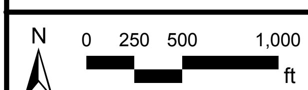




Study Area

Winnebago Tribe Broadband Connectivity Project
Emerson Office Delineation
Emerson, Thurston County, Nebraska

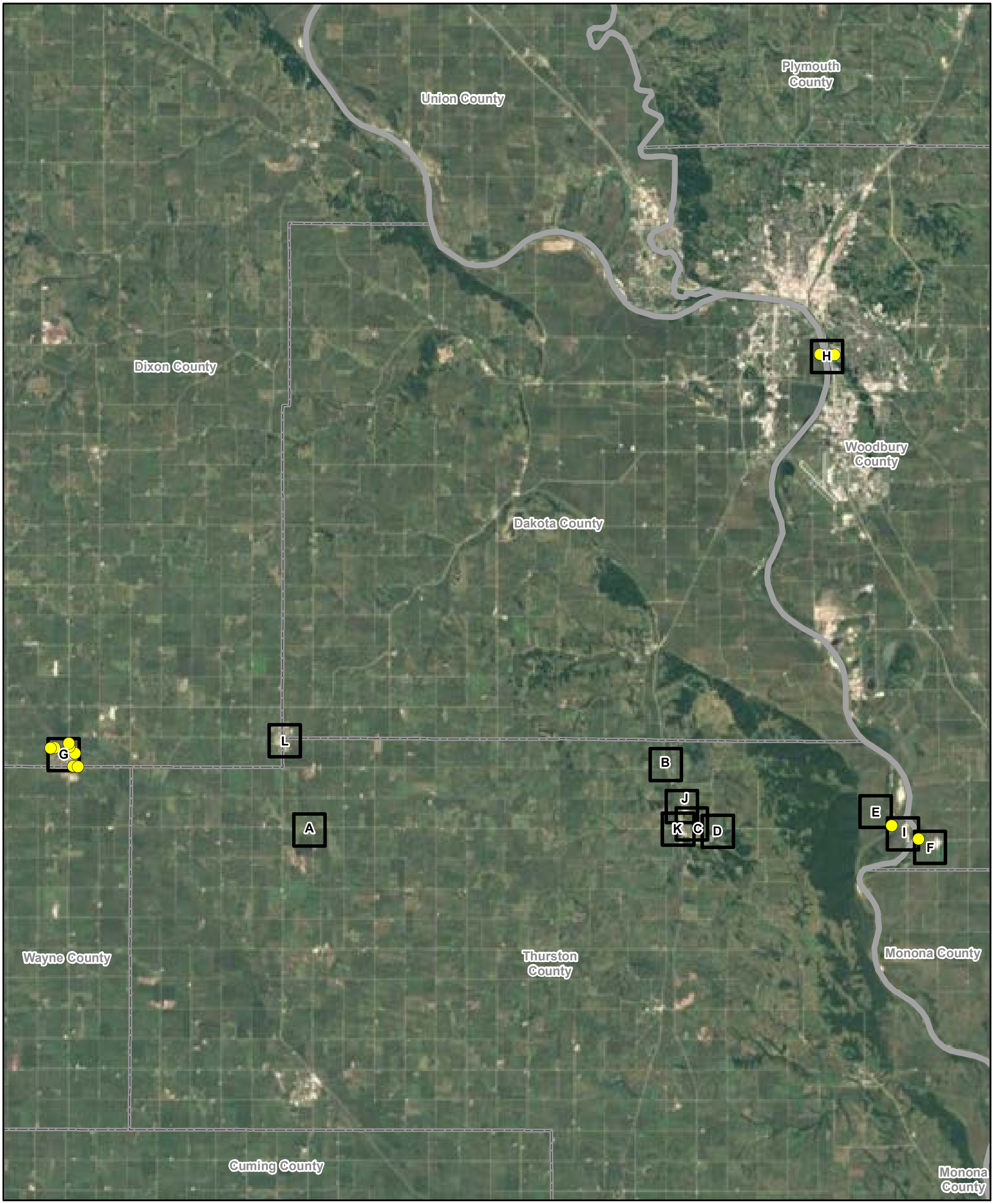
Location Map
Figure 1L

olsson

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: USGSTopo



N

0 1 2 4 Miles

1 " = 4 miles

olsson

Bore Point

County Boundary

State Boundary

Winnebago Tribe Broadband Connectivity Project

Dakota, Dixon, Thurston, Wayne Counties, Nebraska

Woodbury County, Iowa

Index Map

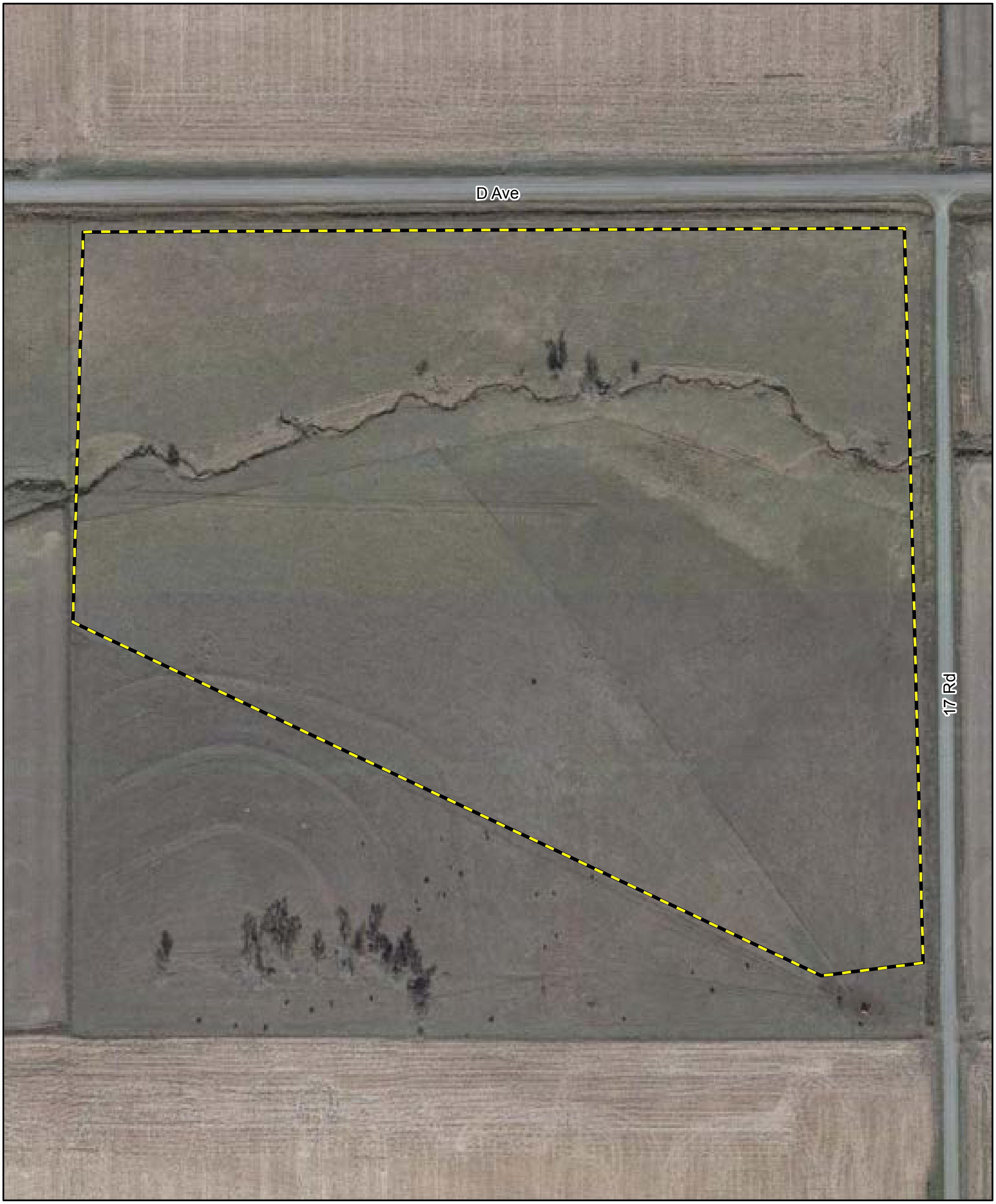
Figure 2

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

\\oa.ad.oaconsulting.com\fnts-ns1\projects\2021\05001-05500\021-05175\NTIA Tribal Broadband Connectivity Program\40-Design\GIS\GIS\23-08-07_NRPL_Delineation Figures.mxd PUBLISHED BY: mczerwinski DATE: December 07, 2023



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N

0 50 100 200 ft

1 " = 200 '

olsson

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area A Delineation
Thurston County, Nebraska
Site Map
Figure 2A

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

N

0 25 50 100 ft

1 " = 100 '

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area B Delineation
Thurston County, Nebraska
Site Map
Figure 2B

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WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

N

0 25 50 100 ft

1 " = 100 '

olsson

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area C Delineation
Thurston County, Nebraska
Site Map
Figure 2C

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

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N

0 37.5 75 150 ft

1 " = 150 '

olsson

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area D Delineation

Thurston County, Nebraska

Site Map

Figure 2D

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

Winnebago Tribe Broadband Connectivity Project
Staging Area E Delineation
Thurston County, Nebraska
Site Map
Figure 2E

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

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N

0 137.5 275 550 ft

1 " = 550 '

olsson

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area F Delineation
Woodbury County, Iowa

Site Map
Figure 2F

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

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N

0 175 350 700 ft

1 " = 700 '

olsson

Bore Point

Bore Point 100-ft Buffer

Winnebago Tribe Broadband Connectivity Project

Wakefield Bore Sites Delineation

Wakefield, Dixon and Wayne Counties, Nebraska

Site Map

Figure 2G

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

N

0 100 200 400 ft

1 " = 400 '

olsson

Bore Point

Bore Point 50-ft Buffer

Winnebago Tribe Broadband Connectivity Project
North Bore Site Delineation
Dakota County, Nebraska
Woodbury County, Iowa
Site Map
Figure 2H

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WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

N

0 175 350 700

ft

1 " = 700 '

olsson

Bore Point

Bore Point 50-ft Buffer

Winnebago Tribe Broadband Connectivity Project
South Bore Site Delineation
Thurston County, Nebraska
Woodbury County, Iowa

Site Map
Figure 2I

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WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

N

0 25 50 ft

1 " = 50 '

olsson

Study Area

Winnebago Tribe Broadband Connectivity Project
Central Office Delineation
Thurston County, Nebraska

Site Map
Figure 2J

WGS 1984 ARC System Zone 11 | Olsson Project # 021-05175 | Basemap: Google Satellite

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N
0 25 50
ft
1 " = 50 '

Study Area

Winnebago Tribe Broadband Connectivity Project
Alternate Central Office Delineation
Winnebago, Thurston County, Nebraska
Site Map
Figure 2K

olsson

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

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N

0 25 50 ft

1 " = 50 '

Study Area

Winnebago Tribe Broadband
Emerson Office Delineation
Thurston County, Nebraska
Olsson Project # 021-05175
Site Map
Figure 2L

WGS 1984 ARC System Zone 11

Basemap: Google Satellite

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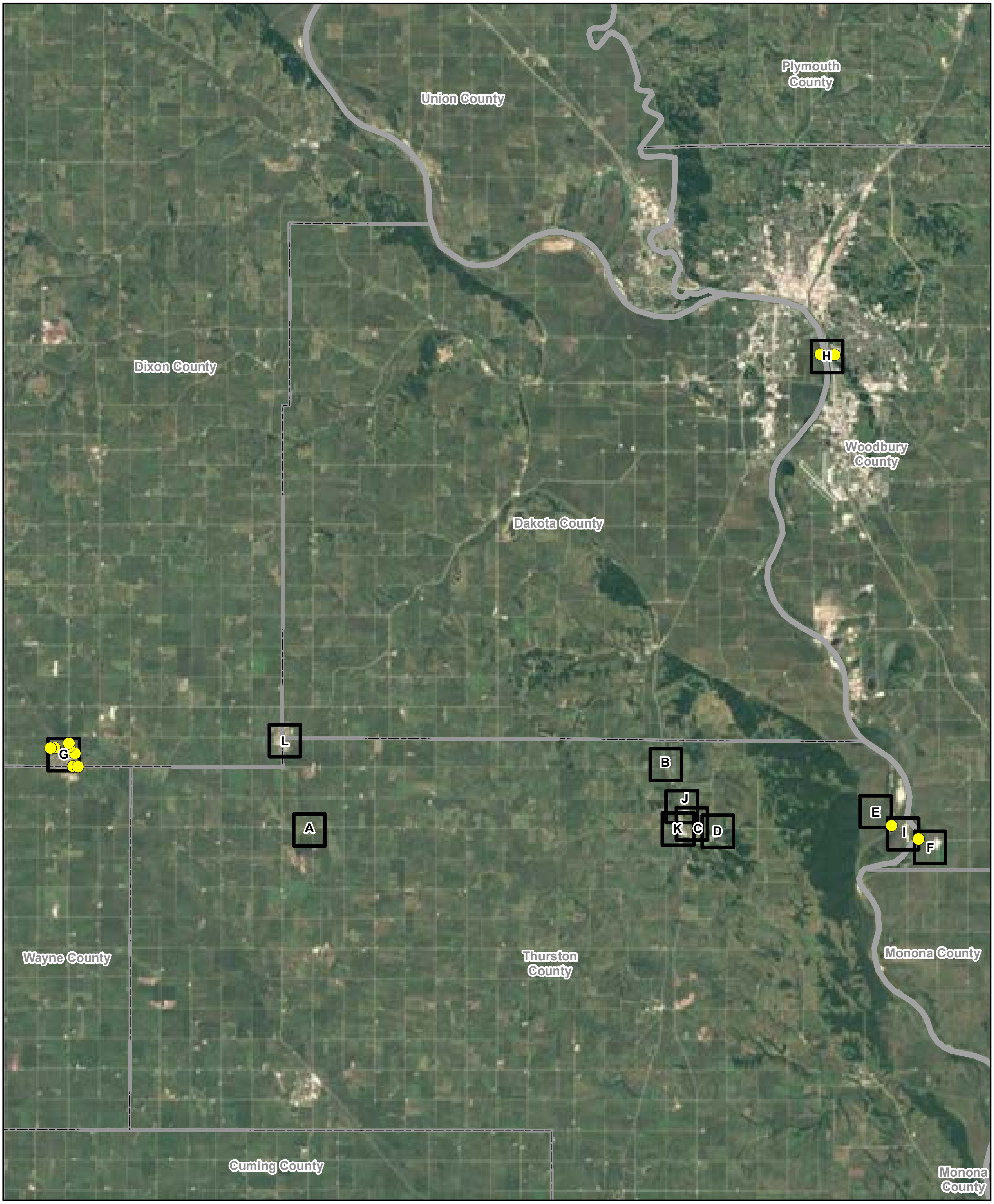


N 0 1 2 4 Miles
1 " = 4 miles

olsson

Bore Point
County Boundary
State Boundary

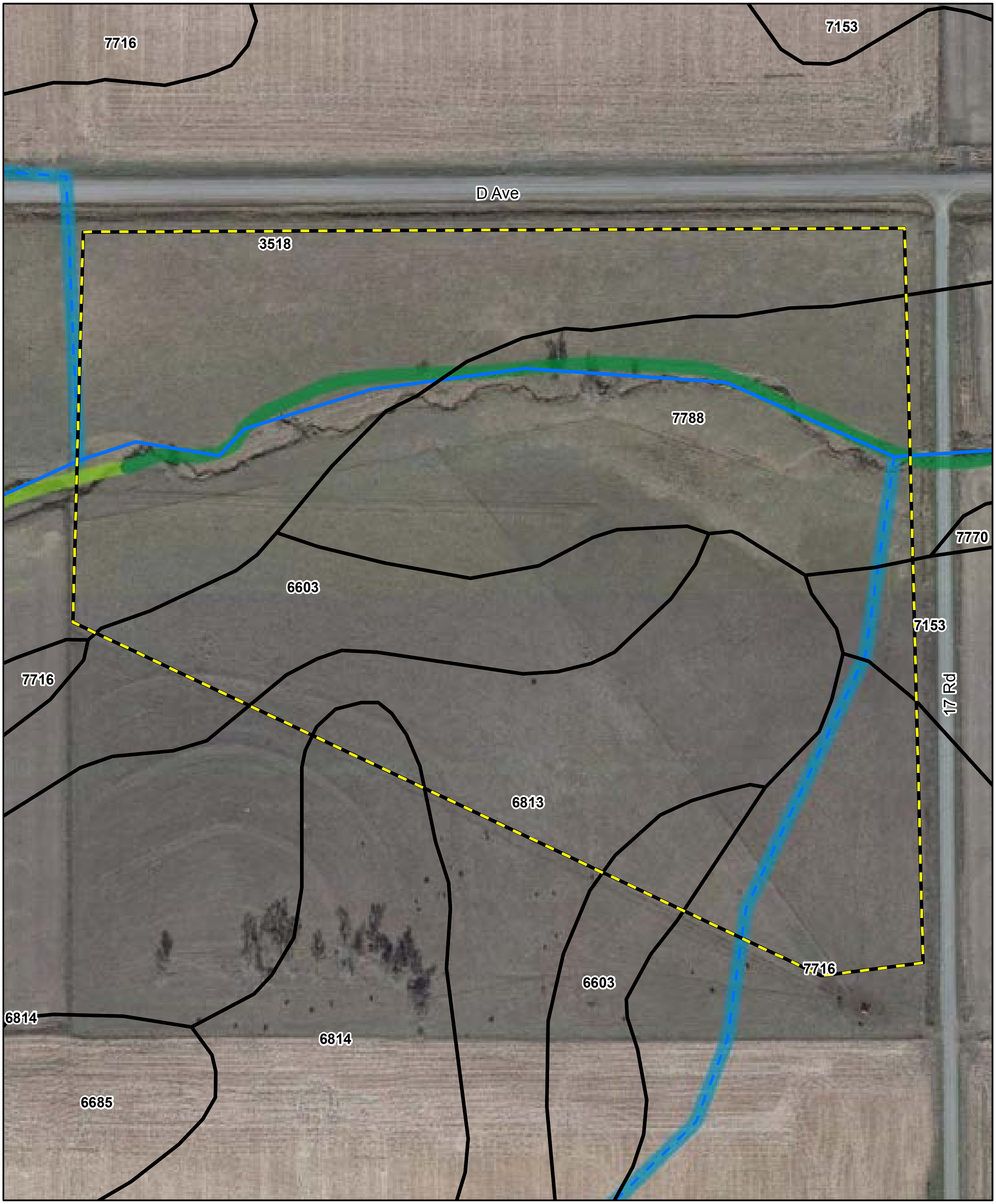
Winnebago Tribe Broadband Connectivity Project

Dakota, Dixon, Thurston, Wayne Counties, Nebraska
Woodbury County, Iowa

Index Map

Figure 3

WGS 1984 ARC System Zone 11 | Olsson Project # 021-05175 | Basemap: Google Satellite



N
0 50 100 200
ft
1 " = 200 '

Intermittent Stream
Perennial Stream
Study Area
SSURGO Soils

Wetland Class (NWI)
Freshwater Forested/Shrub Wetland
Freshwater Emergent Wetland
Riverine Habitat

Winnebago Tribe Broadband Connectivity Project
Staging Area A Delineation
Thurston County, Nebraska
Natural Resources Map
Figure 3A

WGS 1984 ARC System Zone 11
Olsson Project # 021-05175
Basemap: Google Satellite

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N

0 25 50 100 ft

1 " = 100 '

olsson

- - Intermittent Stream
— Perennial Stream
Study Area
SSURGO Soils

Wetland Class (NWI)
Riverine Habitat

Winnebago Tribe Broadband Connectivity Project
Staging Area B Delineation
Thurston County, Nebraska
Natural Resources Map
Figure 3B

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WGS 1984 ARC System Zone 11 | Olsson Project # 021-05175 | Basemap: Google Satellite

Winnebago Tribe Broadband Connectivity Project
Staging Area C Delineation
Thurston County, Nebraska
Natural Resources Map
Figure 3C

olsson

WGS 1984 ARC System Zone 11
Olsson Project # 021-05175
Basemap: Google Satellite

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N

0 37.5 75 150 ft

1 " = 150 '

olsson

Intermittent Stream
Study Area
SSURGO Soils
Wetland Class (NWI)
Freshwater Forested/Shrub Wetland

Winnebago Tribe Broadband Connectivity Project
Staging Area D Delineation
Thurston County, Nebraska
Natural Resources Map
Figure 3D

WGS 1984 ARC System Zone 11 | Olsson Project # 021-05175 | Basemap: Google Satellite

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N

0 212.5 425 850 ft

1 " = 850 '

Intermittent Stream
Other Flowlines
Study Area
SSURGO Soils

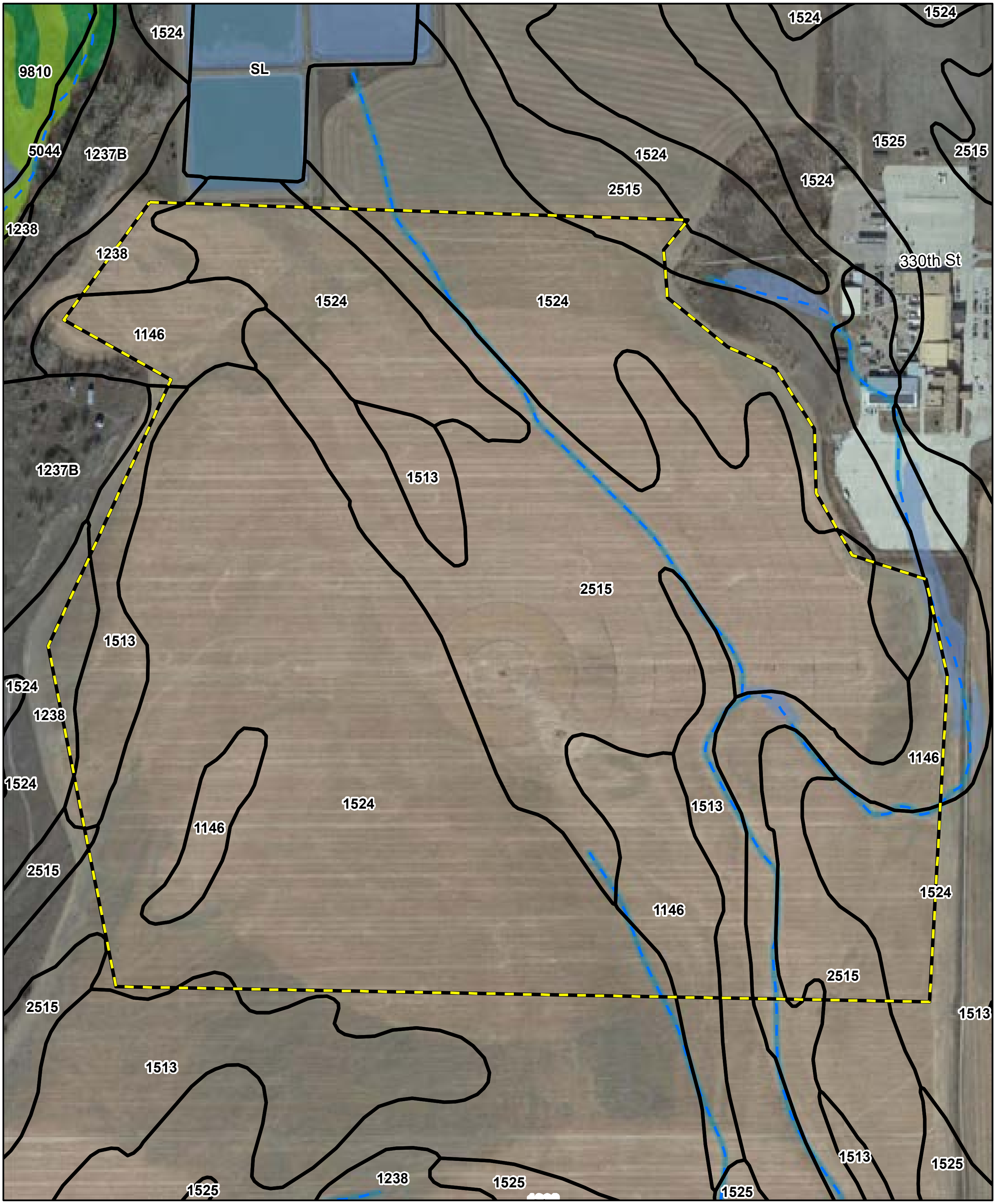
Wetland Class (NWI)
Freshwater Forested/Shrub Wetland
Freshwater Emergent Wetland
Freshwater Pond
Riverine Habitat

Winnebago Tribe Broadband Connectivity Project
Staging Area E Delineation
Thurston County, Nebraska
Natural Resources Map
Figure 3E

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite



N

0 137.5 275 550 ft

1 " = 550 '

olsson

- - Intermittent Stream
Study Area
SSURGO Soils

Wetland Class (NWI)
Freshwater Forested/Shrub Wetland
Freshwater Emergent Wetland
Freshwater Pond
Riverine Habitat

Winnebago Tribe Broadband Connectivity Project
Staging Area F Delineation
Woodbury County, Iowa
Natural Resources Map
Figure 3F

WGS 1984 ARC System Zone 11
Olsson Project # 021-05175
Basemap: Google Satellite

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N

0 175 350 700 ft

1 " = 700 '

olsson

- Intermittent Stream
- Other Flowlines
- Bore Point
- Bore Point 100-ft Buffer
- SSURGO Soils

Wetland Class (NWI)

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

Winnebago Tribe Broadband Connectivity Project
Wakefield Bore Sites Delineation
Wakefield, Dixon and Wayne Counties, Nebraska

Natural Resources Map
Figure 3G

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

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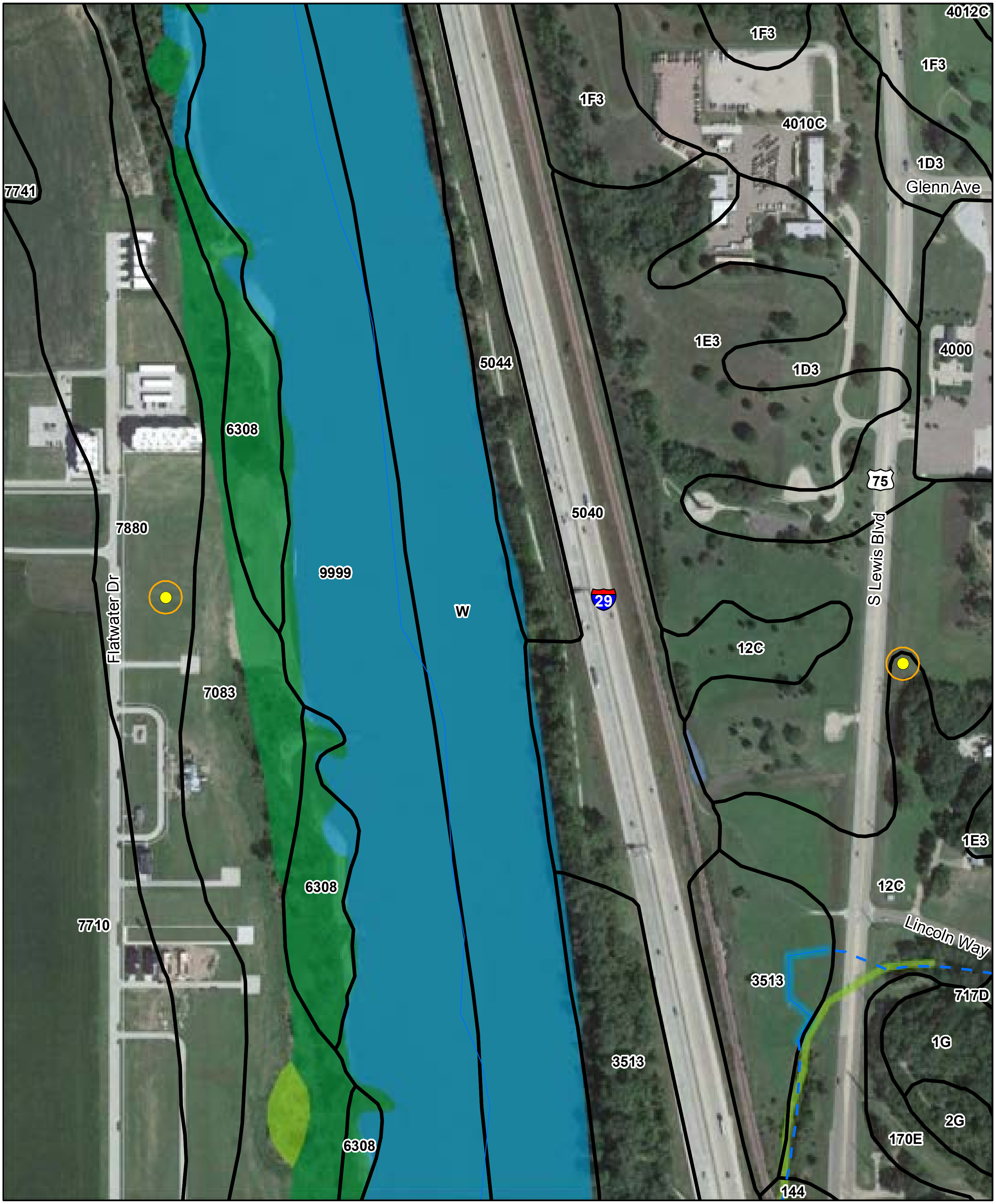

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N

0 100 200 400 ft

1 " = 400 '

olsson

- Intermittent Stream
- Other Flowlines
- Bore Point
- Bore Point 50-ft Buffer
- SSURGO Soils

Wetland Class (NWI)

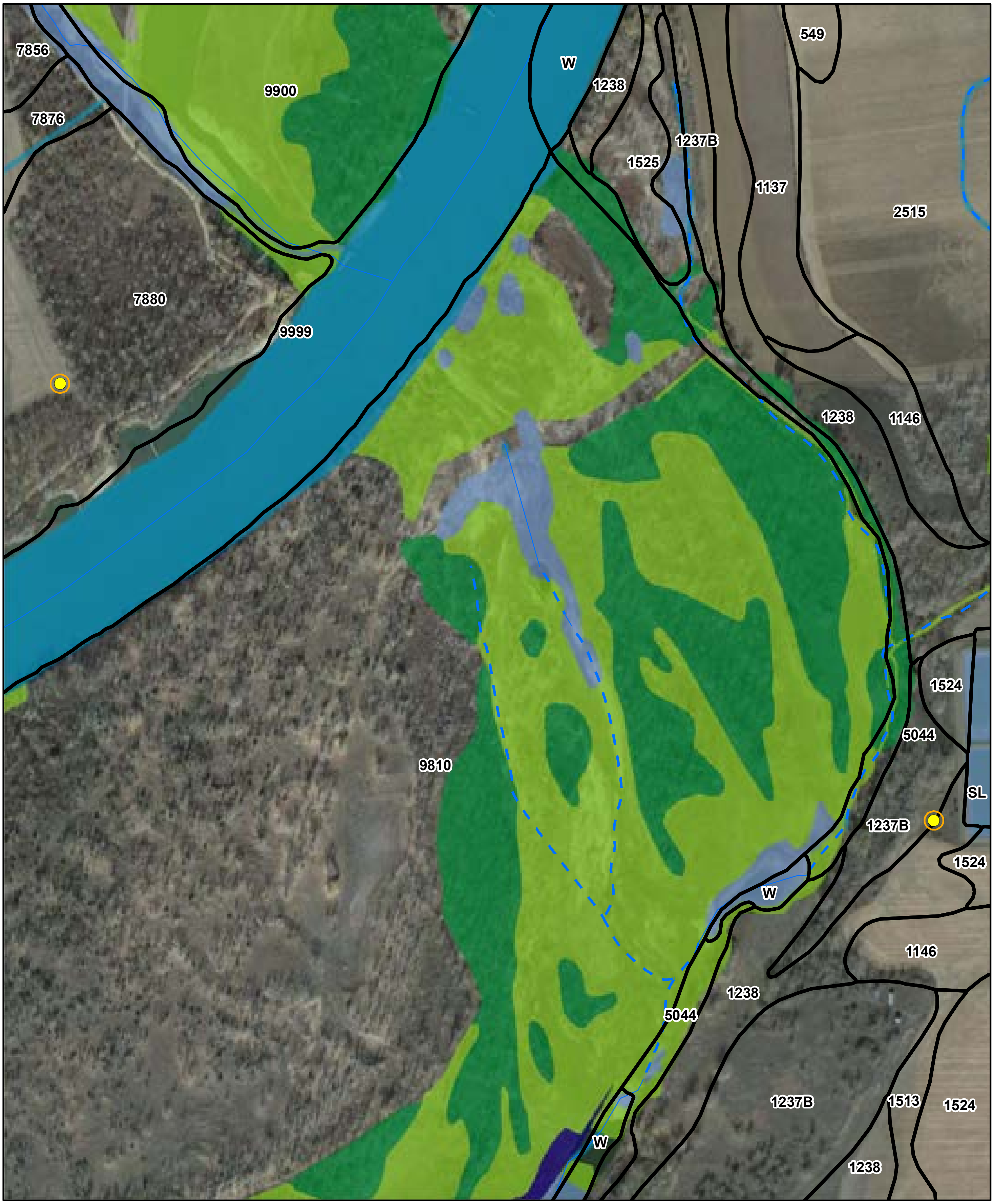
- Freshwater Forested/Shrub Wetland
- Freshwater Emergent Wetland
- Freshwater Pond
- Riverine Habitat

Winnebago Tribe Broadband Connectivity Project
North Bore Site Delineation
Dakota County, Nebraska
Woodbury County, Iowa
Natural Resources Map
Figure 3H

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite



N

0 175 350 700 ft

1 " = 700 '

olsson

- Intermittent Stream
- Other Flowlines
- Bore Point
- Bore Point 50-ft Buffer
- SSURGO Soils

Wetland Class (NWI)

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

Winnebago Tribe Broadband Connectivity Project
South Bore Site Delineation
Thurston County, Nebraska
Woodbury County, Iowa
Natural Resources Map
Figure 3I

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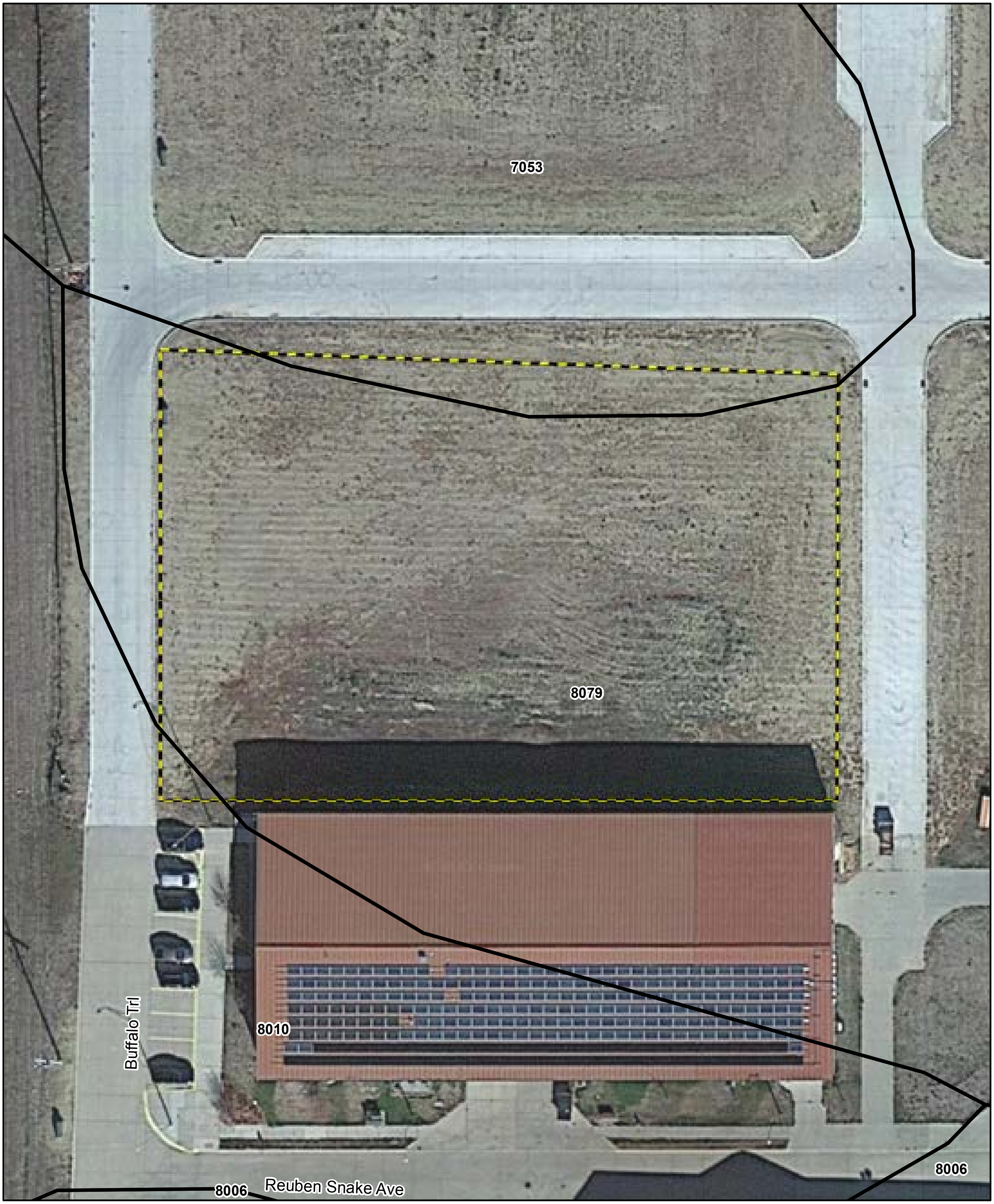
WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite



SSURGO Soils

Study Area

olsson

Winnebago Tribe Broadband Connectivity Project
Central Office Delineation
Thurston County, Nebraska

Natural Resources Map
Figure 3J

WGS 1984 ARC System Zone 11 | Olsson Project # 021-05175 | Basemap: Google Satellite

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N
0 25 50 ft
1 " = 50 '

olsson

SSURGO Soils
Study Area

Winnebago Tribe Broadband Connectivity Project
Alternate Central Office Delineation
Winnebago, Thurston County, Nebraska
Natural Resources Map
Figure 3K

WGS 1984 ARC System Zone 11
Olsson Project # 021-05175
Basemap: Google Satellite

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N
0 25 50 ft
1 " = 50 '

olsson

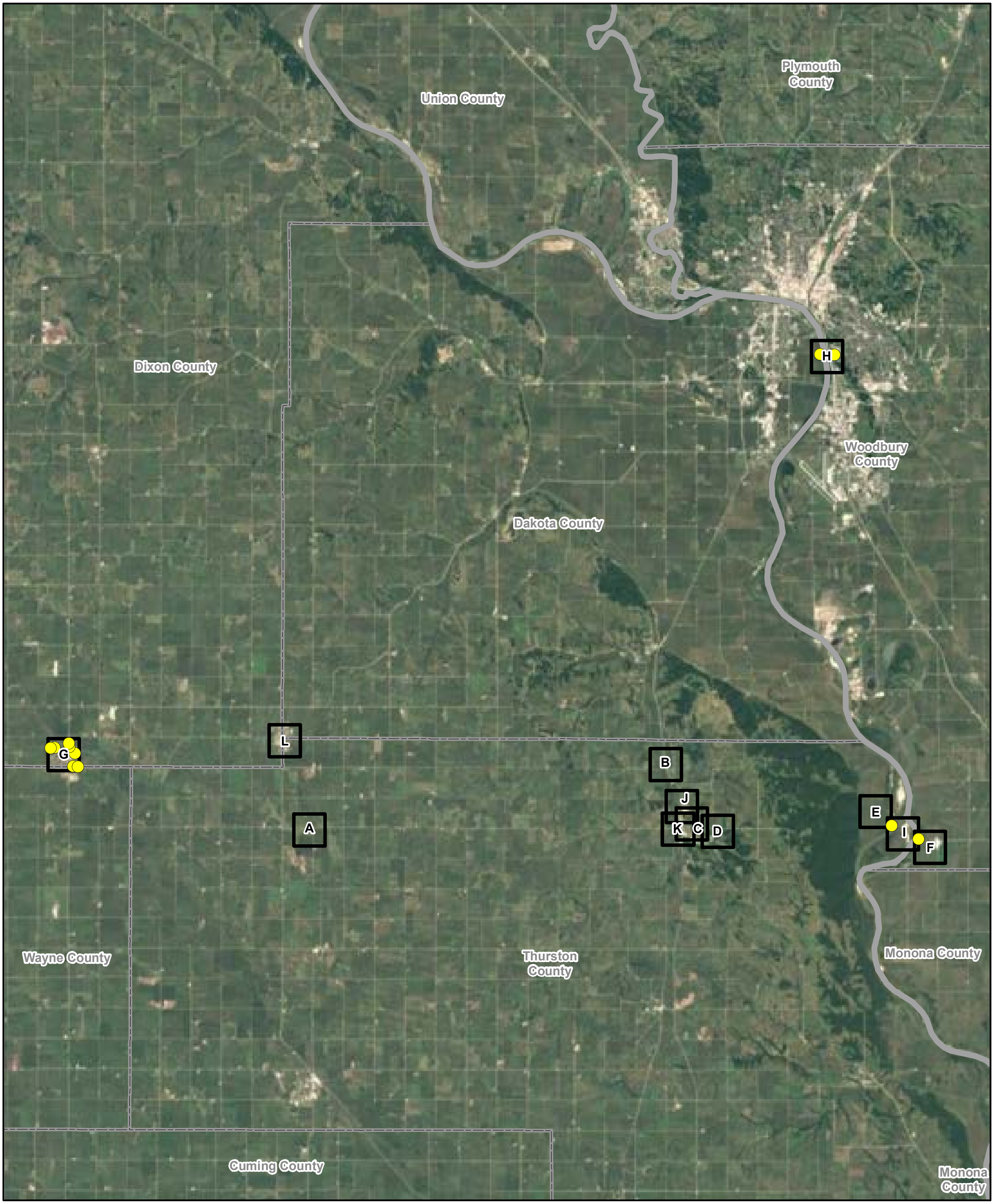
Sample Point
Photo Point
Study Area

Winnebago Tribe Broadband
Emerson Office Delineation
Thurston County, Nebraska
Olsson Project # 021-05175
Delineation Map
Figure 4L

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite



Bore Point
County Boundary
State Boundary

olsson

Winnebago Tribe Broadband Connectivity Project

Dakota, Dixon, Thurston, Wayne Counties, Nebraska
Woodbury County, Iowa

Index Map

Figure 4

WGS 1984 ARC System Zone 11 | Olsson Project # 021-05175 | Basemap: Google Satellite

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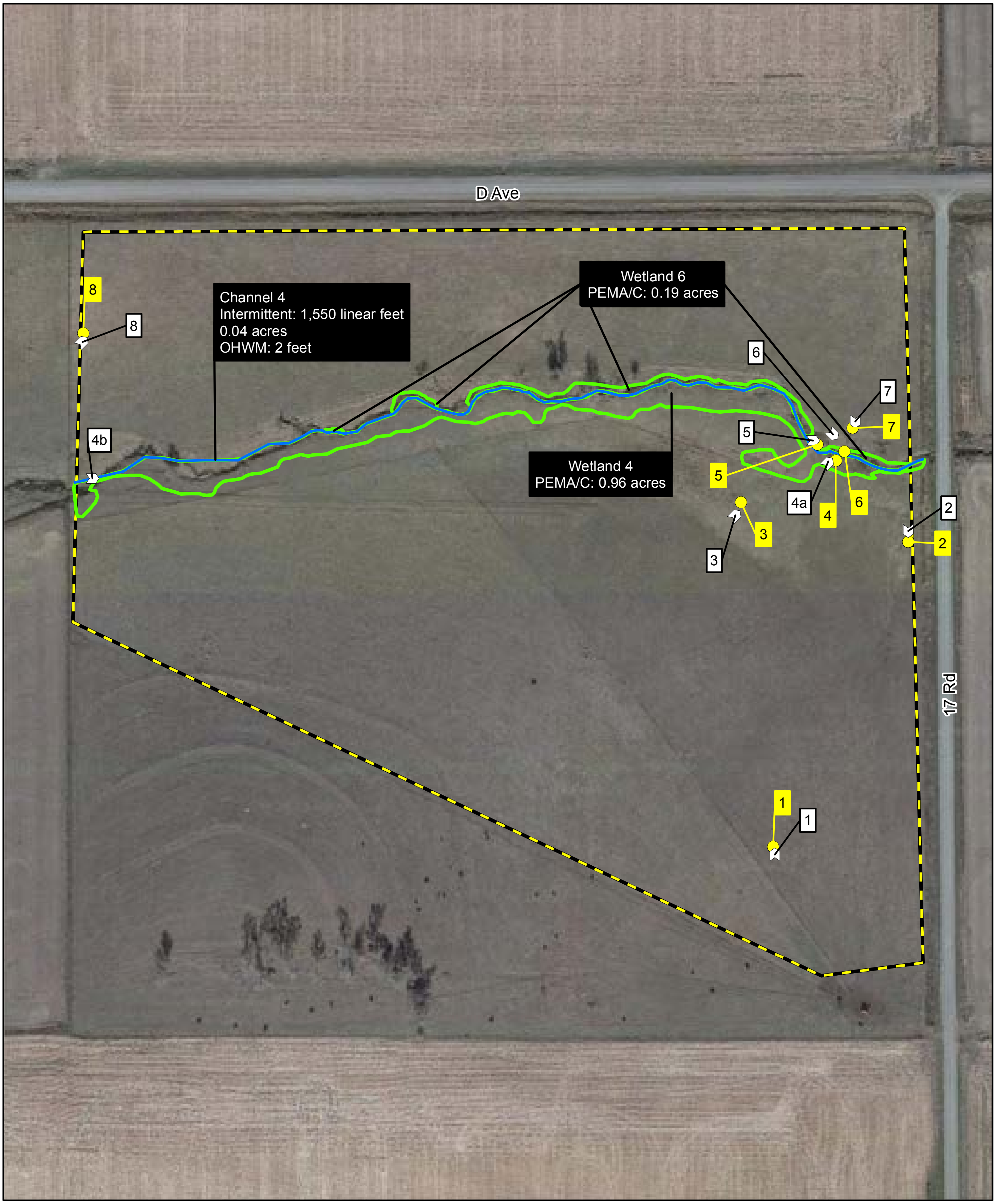

N

0 50 100 200 ft

1 " = 200 '

Sample Point
Photo Point
Channel
Study Area
PEMA/C Wetland

olsson

Winnebago Tribe Broadband Connectivity Project
Staging Area A Delineation
Thurston County, Nebraska

Delineation Map
Figure 4A

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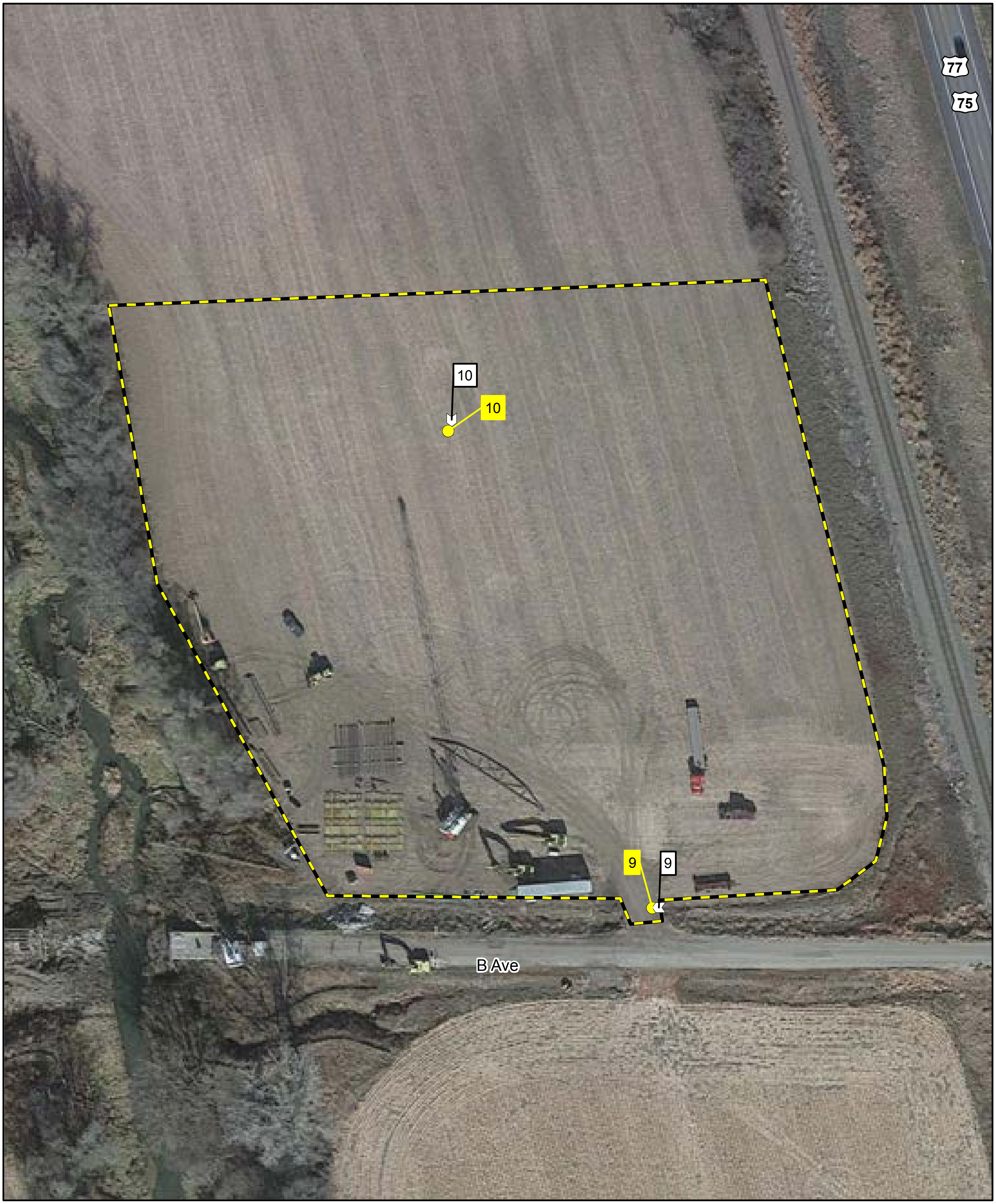
WGS 1984 ARC System Zone 11
Olsson Project # 021-05175
Basemap: Google Satellite



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N

0 25 50 100 ft

1 " = 100 '

olsson

Sample Point

Photo Point

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area B Delineation
Thurston County, Nebraska
Delineation Map
Figure 4B

WGS 1984 ARC System Zone 11 | Olsson Project # 021-05175 | Basemap: Google Satellite

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N

0 25 50 100 ft

1 " = 100 '

olsson

Sample Point

Photo Point

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area C Delineation
Thurston County, Nebraska
Delineation Map
Figure 4C

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

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N

0 37.5 75 150 ft

1 " = 150 '

olsson

Sample Point

Photo Point

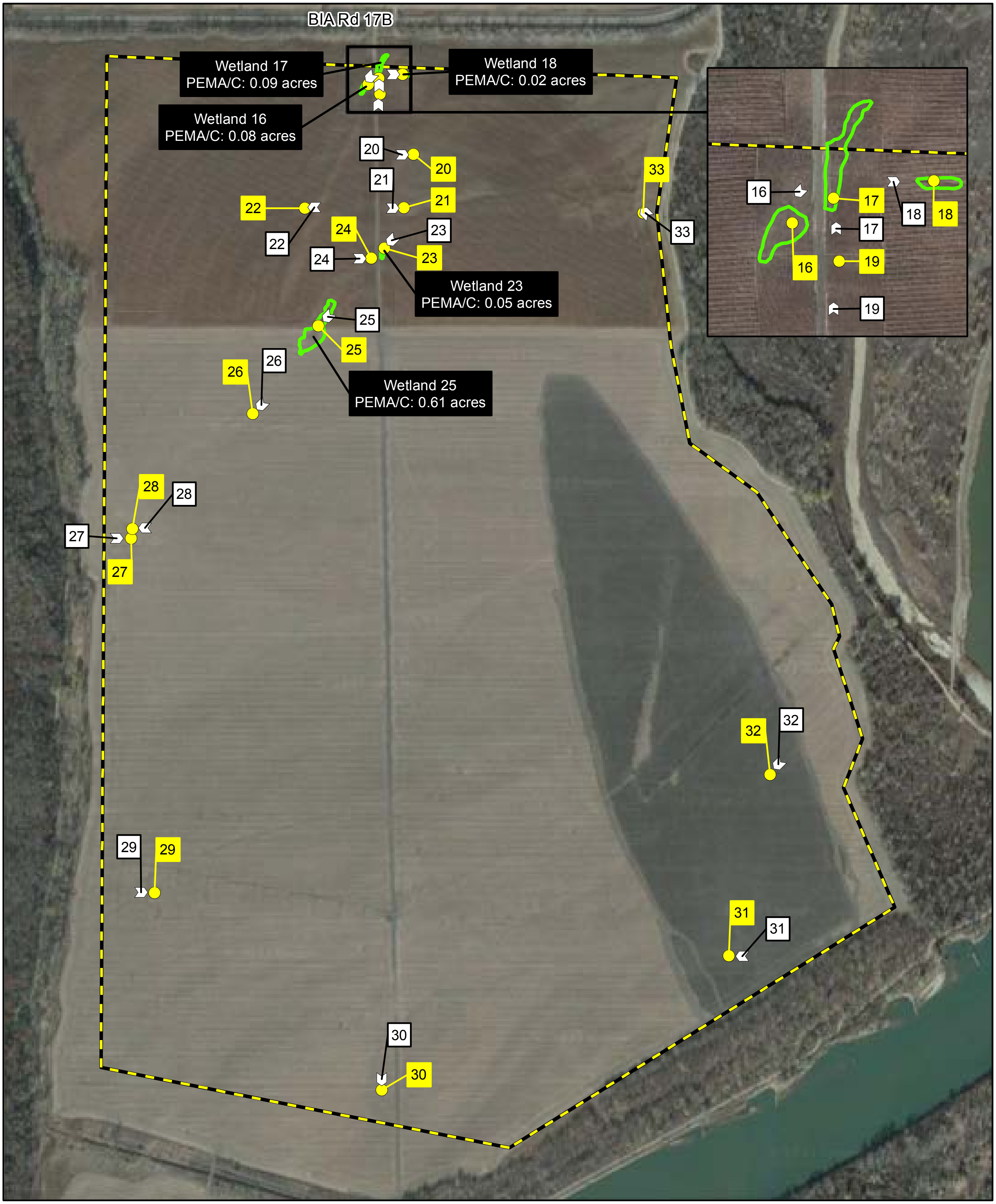
Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area D Delineation
Thurston County, Nebraska
Delineation Map
Figure 4D

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite



N

0 212.5 425 850 ft

1 " = 850 '

olsson

Sample Point

Photo Point

Study Area

PEMA/C Wetland

Winnebago Tribe Broadband Connectivity Project
Staging Area E Delineation
Thurston County, Nebraska
Delineation Map
Figure 4E

WGS 1984 ARC System Zone 11 Olsson Project # 021-05175 Basemap: Google Satellite

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N

0 137.5 275 550 ft

1 " = 550 '

Sample Point

Photo Point

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area F Delineation
Woodbury County, Iowa
Delineation Map
Figure 4F

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

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N
0 175 350 700
ft
1 " = 700 '

olsson

Sample Point
Photo Point
Bore Point 100-ft Buffer
PEMA/C Wetland

Winnebago Tribe Broadband Connectivity Project
Wakefield Bore Sites Delineation
Wakefield, Dixon and Wayne Counties, Nebraska
Delineation Map
Figure 4G

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WGS 1984 ARC System Zone 11
Olsson Project # 021-05175
Basemap: Google Satellite

N

0 100 200 400 ft

1 " = 400 '

olsson

Photo Point

Sample Point

Bore Point

Bore Point 50-ft Buffer

Winnebago Tribe Broadband Connectivity Project

North Bore Site Delineation

Dakota County, Nebraska

Woodbury County, Iowa

Delineation Map

Figure 4H

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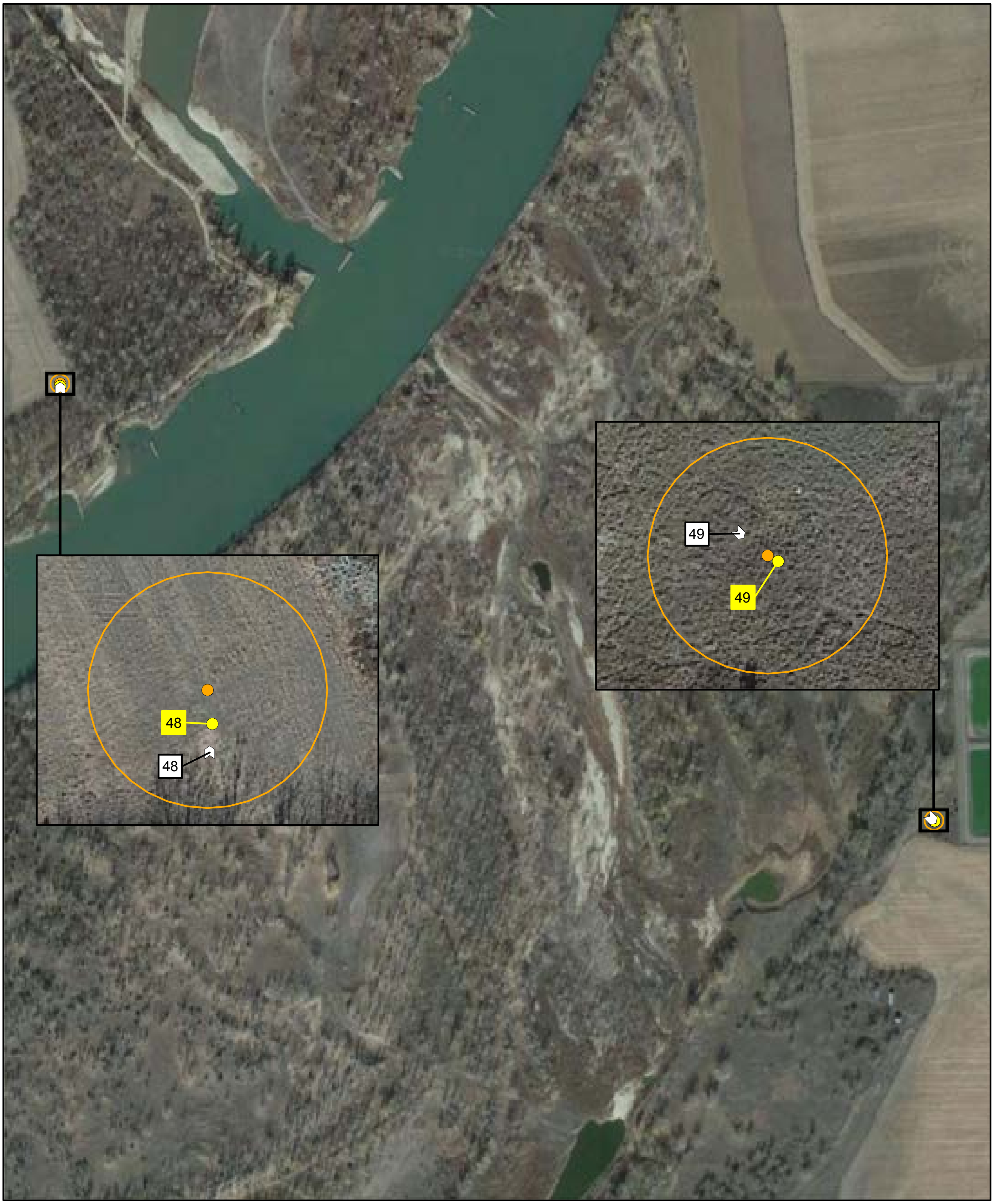
WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite



N

0 175 350 700

ft

1 " = 700 '

Photo Point

Sample Point

Bore Point

Bore Point 50-ft Buffer

Winnebago Tribe Broadband Connectivity Project

South Bore Site Delineation

Thurston County, Nebraska

Woodbury County, Iowa

Delineation Map

Figure 4I

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

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Winnebago Tribe Broadband Connectivity Project
Central Office Delineation
Thurston County, Nebraska
Delineation Map
Figure 4J

WGS 1984 ARC System Zone 11
Olsson Project # 021-05175
Basemap: Google Satellite

N
0 25 50
ft
1 " = 50 '

olsson

Sample Point
Photo Point
Study Area

Winnebago Tribe Broadband Connectivity Project
Alternate Central Office Delineation
Winnebago, Thurston County, Nebraska

Delineation Map
Figure 4K

WGS 1984 ARC System Zone 11
Olsson Project # 021-05175
Basemap: Google Satellite

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N

0 25 50 ft

1 " = 50 '

olsson

Sample Point

Photo Point

Study Area

Winnebago Tribe Broadband
Emerson Office Delineation

Thurston County, Nebraska

Olsson Project # 021-05175

Delineation Map

Figure 4L

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

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APPENDIX B
WETS Tables

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.27.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 9, 2005

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.87	3.18	5.35	2.49	NORMAL	2	3	6
2nd PRIOR MONTH*	June	2.78	4.43	3.85	6.58	WET	3	2	6
3rd PRIOR MONTH*	May	2.93	4.02	4.73	3.83	NORMAL	2	1	2
								SUM =	14

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wakefield 3NW station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

Winnebago Tribe Broadband Connectivity Project
Staging Area A
Thurston County, Nebraska
WETS Map
Aerial Date: August 9, 2005

WGS 1984 ARC System Zone 11
Olsson Project # 021-05175
Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.27.23 PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 29, 2006

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.78	4.43	5.35	3.69	NORMAL	2	3	6
2nd PRIOR MONTH*	May	2.93	4.02	4.73	0.76	DRY	1	2	2
3rd PRIOR MONTH*	April	1.93	3.12	3.77	2.54	NORMAL	2	1	2
								SUM =	10

NOTE: If sum is
6 - 9 then prior period has been drier than normal
10 - 14 then prior period has been normal
15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
Dry = 1
Normal = 2
Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wakefield station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

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olsson

Study Area
WETS Area

Winnebago Tribe Broadband Connectivity Project
Staging Area A
Thurston County, Nebraska
WETS Map
Aerial Date: July 29, 2006

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.27.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 8, 2007

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.78	4.43	5.35	2.38	DRY	1	3	3
2nd PRIOR MONTH*	May	2.93	4.02	4.73	3.13	NORMAL	2	2	4
3rd PRIOR MONTH*	April	3.77	3.12	3.77	6.23	WET	3	1	3
								SUM =	10

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wakefield station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

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Study Area
WETS Area

Winnebago Tribe Broadband Connectivity Project
Staging Area A
Thurston County, Nebraska
WETS Map
Aerial Date: July 8, 2007

WGS 1984 ARC System Zone 11
Olsson Project # 021-05175
Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.27.23 PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 1, 2009

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.78	4.43	5.35	6.84	WET	3	3	9
2nd PRIOR MONTH*	May	2.93	4.02	4.73	0.85	DRY	1	2	2
3rd PRIOR MONTH*	April	3.77	3.12	3.77	1.84	DRY	1	1	1
								SUM =	12

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

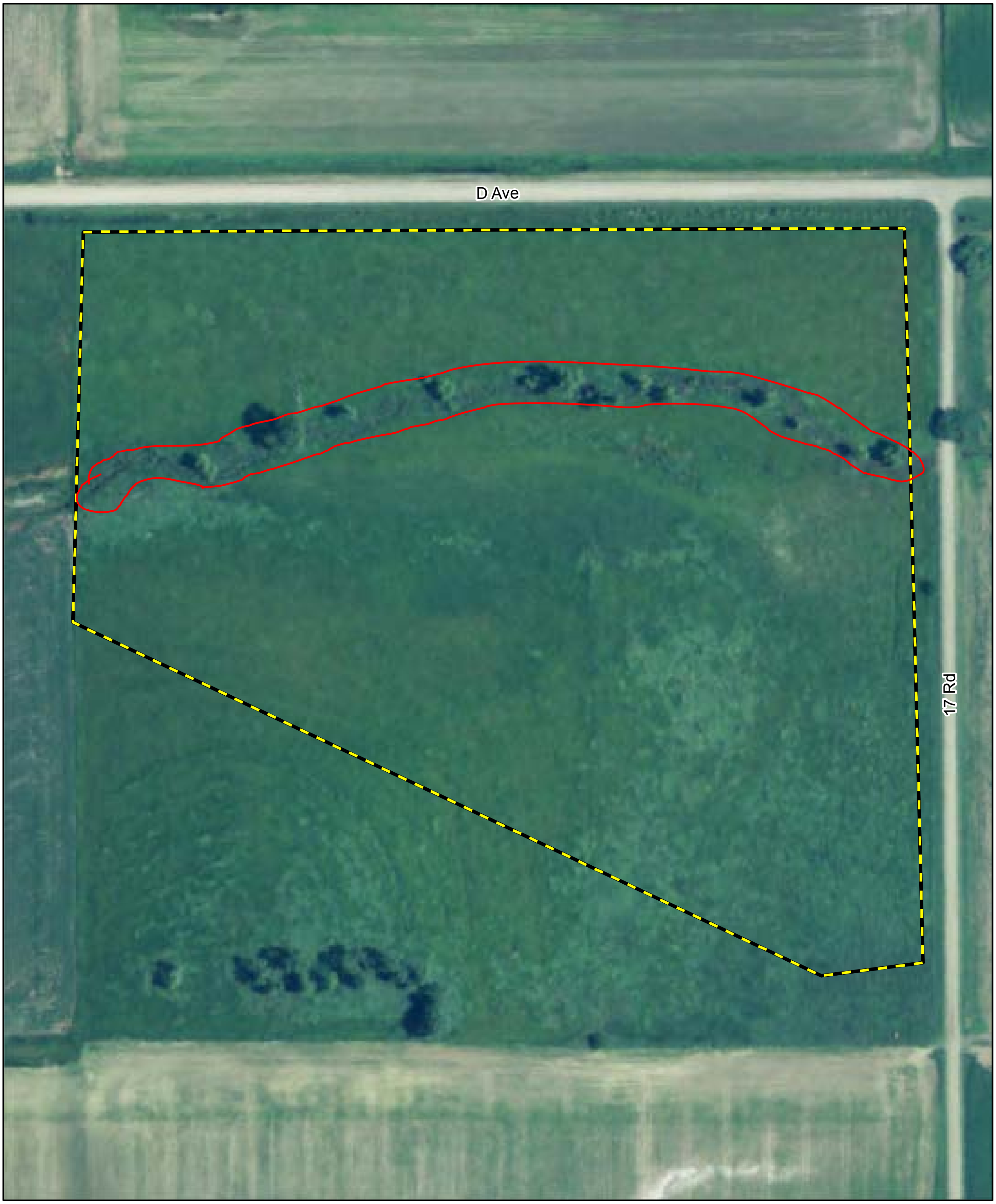
CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wakefield station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.



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Study Area

WETS Area

Winnebago Tribe Broadband Connectivity Project
Staging Area A

Thurston County, Nebraska

WETS Map

Aerial Date: July 1, 2009

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.27.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 10, 2010

		LONG TERM RAINFALL RECORDS								
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.78	4.43	5.35	9.18	WET	3	3	9
2nd PRIOR MONTH*	May	2.93	4.02	4.73	2.51	DRY	1	2	2
3rd PRIOR MONTH*	April	1.93	3.12	3.77	2.87	NORMAL	2	1	2
								SUM =	13

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wakefield station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

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Study Area

WETS Area

Winnebago Tribe Broadband Connectivity Project
Staging Area A
Thurston County, Nebraska
WETS Map
Aerial Date: July 10, 2010

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.27.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 3, 2012

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.78	4.43	5.35	0.82	DRY	1	3	3
2nd PRIOR MONTH*	May	2.93	4.02	4.73	5.15	WET	3	2	6
3rd PRIOR MONTH*	April	1.93	3.12	3.77	3.26	NORMAL	2	1	2
								SUM =	11

NOTE: If sum is
6 - 9 then prior period has been drier than normal
10 - 14 then prior period has been normal
15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
Dry = 1
Normal = 2
Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wakefield station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

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Study Area

WETS Area

Winnebago Tribe Broadband Connectivity Project
Staging Area A
Thurston County, Nebraska
WETS Map
Aerial Date: July 3, 2012

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.27.23 PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: September 16, 2014

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	August	1.86	3.14	3.81	5.88	WET	3	3	9
2nd PRIOR MONTH*	July	1.87	3.18	3.85	4.35	WET	3	2	6
3rd PRIOR MONTH*	June	2.78	4.43	5.35	12.79	WET	3	1	3
								SUM =	18

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Wet

Prior to the site visit monthly precipitation observed at the Wakefield station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

Winnebago Tribe Broadband Connectivity Project
Staging Area A
Thurston County, Nebraska
WETS Map
Aerial Date: September 16, 2014

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WGS 1984 ARC System Zone 11
Olsson Project # 021-05175
Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Lyons

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 13, 2016

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	2.13	3.32	4.00	4.78	WET	3	3	9
2nd PRIOR MONTH*	June	2.55	4.17	5.05	1.23	DRY	1	2	2
3rd PRIOR MONTH*	May	3.10	4.49	5.35	4.07	NORMAL	2	1	2
								SUM =	13

NOTE: If sum is
6 - 9 then prior period has been drier than normal
10 - 14 then prior period has been normal
15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
Dry = 1
Normal = 2
Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were: Normal

Prior to the site visit monthly precipitation observed at the Lyons, NE station was 1.51 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

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olsson

Study Area

WETS Area

Winnebago Tribe Broadband Connectivity Project
Staging Area A
Thurston County, Nebraska
WETS Map
Aerial Date: August 13, 2016

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WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 15, 2020

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.87	3.18	3.85	3.82	NORMAL	2	3	6
2nd PRIOR MONTH*	June	2.78	4.43	5.35	1.29	DRY	1	2	2
3rd PRIOR MONTH*	May	2.93	4.02	4.73	2.80	DRY	1	1	1
								SUM =	9

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Dry

Prior to the site visit monthly precipitation observed at the Wakefield station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit werenot reliable indicators.

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Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area A

Thurston County, Nebraska

WETS Map

Aerial Date: August 15, 2020

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 4, 2022

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.87	3.18	3.85	1.54	DRY	1	3	3
2nd PRIOR MONTH*	June	2.78	4.43	5.35	1.18	DRY	1	2	2
3rd PRIOR MONTH*	May	2.93	4.02	4.73	3.22	NORMAL	2	1	2
								SUM =	7

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Dry

Prior to the site visit monthly precipitation observed at the Wakefield station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit werenot reliable indicators.

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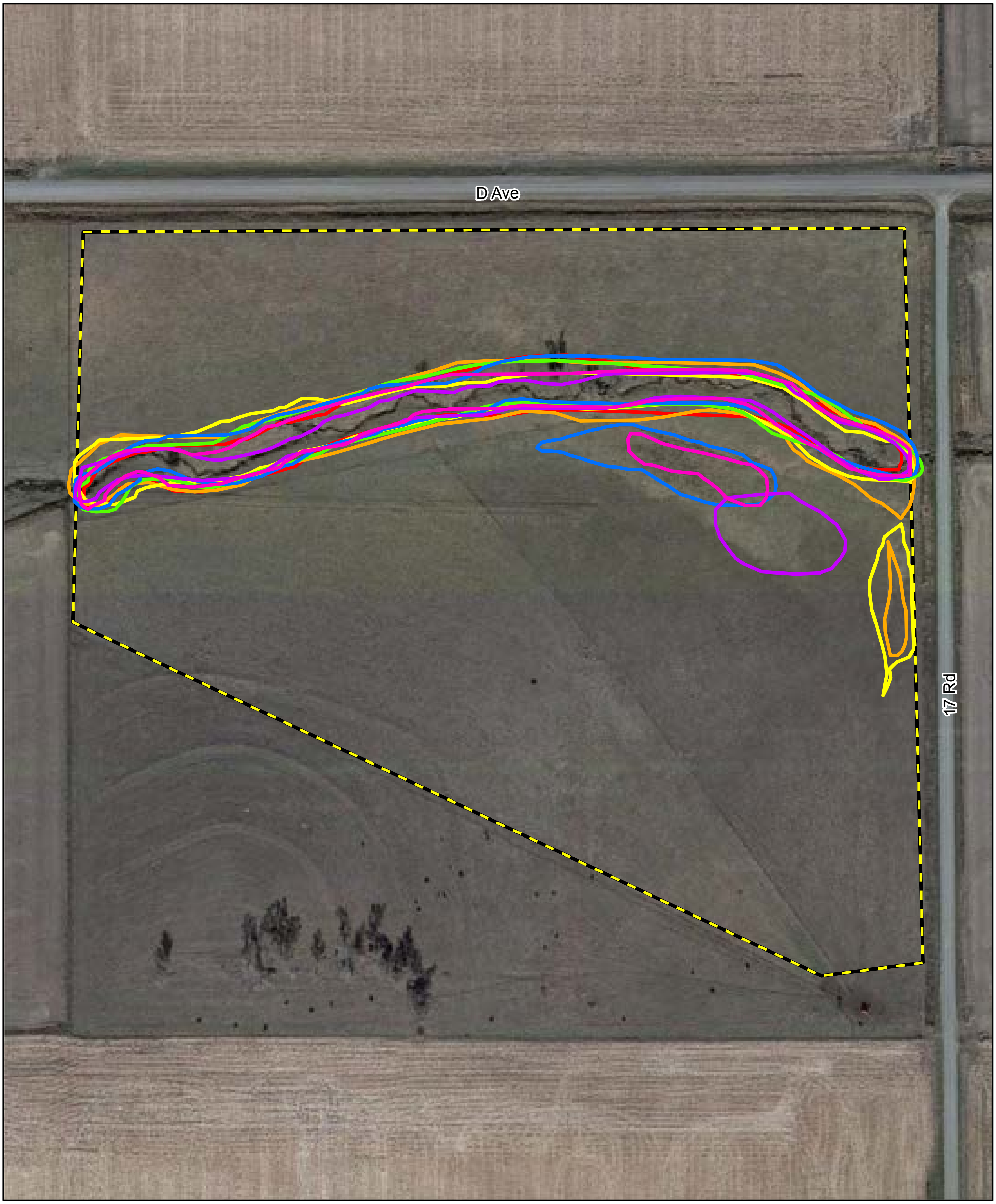
Winnebago Tribe Broadband Connectivity Project
Staging Area A
Thurston County, Nebraska
WETS Map
Aerial Date: August 4, 2022

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery



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Study Area

Year

2005
2006
2007
2009
2010
2012
2016

Winnebago Tribe Broadband Connectivity Project
Staging Area A
Thurston County, Nebraska
Combined WETS Map

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

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Study Area

Final WETS

Winnebago Tribe Broadband Connectivity Project
Staging Area A
Thurston County, Nebraska
Final WETS Map

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 6, 2005

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.87	3.18	3.85	2.49	NORMAL	2	3	6
2nd PRIOR MONTH*	June	2.78	4.43	5.35	6.58	WET	3	2	6
3rd PRIOR MONTH*	May	2.93	4.02	4.73	3.83	NORMAL	2	1	2
								SUM =	14

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

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Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area B
Thurston County, Nebraska
WETS Map
Aerial Date: August 6, 2005

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WGS 1984 ARC System Zone 11
Olsson Project # 021-05175
Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23 PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 28, 2006

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.78	4.43	5.35	3.69	NORMAL	2	3	6
2nd PRIOR MONTH*	May	2.93	4.02	4.73	0.76	DRY	1	2	2
3rd PRIOR MONTH*	April	1.93	3.12	3.77	2.54	NORMAL	2	1	2
								SUM =	10

NOTE: If sum is
6 - 9 then prior period has been drier than normal
10 - 14 then prior period has been normal
15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
Dry = 1
Normal = 2
Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

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olsson

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area B
Thurston County, Nebraska

WETS Map
Aerial Date: July 28, 2006

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 27, 2007

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.87	3.18	3.85	1.43	DRY	1	3	3
2nd PRIOR MONTH*	June	2.78	4.43	5.35	2.38	DRY	1	2	2
3rd PRIOR MONTH*	May	2.93	4.02	4.73	3.13	NORMAL	2	1	2
								SUM =	7

NOTE: If sum is
6 - 9 then prior period has been drier than normal
10 - 14 then prior period has been normal
15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
Dry = 1
Normal = 2
Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Dry

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N

0 25 50 100 ft

1 " = 100 '

olsson

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area B

Thurston County, Nebraska

WETS Map

Aerial Date: August 27, 2007

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

\\oa.ad.oaconsulting.com\fnts-ns1\projects\2021\05001-05500\021-05175\40-Design\GIS\23-06-26_NRPL_WETS Analysis.mxd PUBLISHED BY: mczerwinski DATE: June 27, 2023

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: June 22, 2009

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	May	2.93	4.02	4.73	0.85	DRY	1	3	3
2nd PRIOR MONTH*	April	1.93	3.12	3.77	1.84	DRY	1	2	2
3rd PRIOR MONTH*	March	1.03	2.07	2.53	1.29	NORMAL	2	1	2
								SUM =	7

NOTE: If sum is
6 - 9 then prior period has been drier than normal
10 - 14 then prior period has been normal
15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
Dry = 1
Normal = 2
Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Dry

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

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N

0 25 50 100

ft

1 " = 100 '

olsson

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area B

Thurston County, Nebraska

WETS Map

Aerial Date: June 22, 2009

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 27, 2010

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.78	4.43	5.35	9.18	WET	3	3	9
2nd PRIOR MONTH*	May	2.93	4.02	4.73	2.51	DRY	1	2	2
3rd PRIOR MONTH*	April	1.93	3.12	3.77	2.87	NORMAL	2	1	2
								SUM =	13

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N

0 25 50 100 ft

1 " = 100 '

olsson

Study Area

WETS Area

Winnebago Tribe Broadband Connectivity Project
Staging Area B
Thurston County, Nebraska

WETS Map
Aerial Date: July 27, 2010

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 4, 2012

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.78	4.43	5.35	0.82	DRY	1	3	3
2nd PRIOR MONTH*	May	2.93	4.02	4.73	5.15	WET	3	2	6
3rd PRIOR MONTH*	April	1.93	3.12	3.77	3.26	NORMAL	2	1	2
								SUM =	11

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N
0 25 50 100
ft
1 " = 100 '

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area B
Thurston County, Nebraska
WETS Map
Aerial Date: July 4, 2012

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WGS 1984 ARC System Zone 11
Olsson Project # 021-05175
Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: September 16, 2014

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	August	1.86	3.14	3.81	5.88	WET	3	3	9
2nd PRIOR MONTH*	July	1.87	3.18	3.85	4.35	WET	3	2	6
3rd PRIOR MONTH*	June	2.78	4.43	5.35	12.79	WET	3	1	3
								SUM =	18

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Wet

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N
0 25 50 100
ft
1 " = 100 '

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area B
Thurston County, Nebraska
WETS Map
Aerial Date: September 16, 2014

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WGS 1984 ARC System Zone 11 | Olsson Project # 021-05175 | Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Lyons

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 13, 2016

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	2.13	3.32	4.00	4.78	WET	3	3	9
2nd PRIOR MONTH*	June	2.55	4.17	5.05	1.23	DRY	1	2	2
3rd PRIOR MONTH*	May	3.10	4.49	5.35	4.07	NORMAL	2	1	2
								SUM =	13

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Lyons, NE station was 1.51 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

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N

0 25 50 100 ft

1 " = 100 '

olsson

Study Area

WETS Area

Winnebago Tribe Broadband Connectivity Project

Staging Area B

Thurston County, Nebraska

WETS Map

Aerial Date: August 13, 2016

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 15, 2020

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.87	3.18	3.85	3.82	NORMAL	2	3	6
2nd PRIOR MONTH*	June	2.78	4.43	5.35	1.29	DRY	1	2	2
3rd PRIOR MONTH*	May	2.93	4.02	4.73	2.80	DRY	1	1	1
								SUM =	9

NOTE: If sum is

6 - 9	then prior period has been drier than normal
10 - 14	then prior period has been normal
15 - 18	then prior period has been wetter than normal

CONDITION VALUE:

Dry	= 1
Normal	= 2
Wet	= 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Dry

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N

0 25 50 100

ft

1 " = 100 '

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area B
Thurston County, Nebraska
WETS Map
Aerial Date: August 15, 2020

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 4, 2022

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.87	3.18	3.85	1.54	DRY	1	3	3
2nd PRIOR MONTH*	June	2.78	4.43	5.35	1.18	DRY	1	2	2
3rd PRIOR MONTH*	May	2.93	4.02	4.73	3.22	NORMAL	2	1	2
								SUM =	7

NOTE: If sum is

- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:

- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Dry

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

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N

0 25 50 100 ft

1 " = 100 '

olsson

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area B

Thurston County, Nebraska

WETS Map

Aerial Date: August 4, 2022

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

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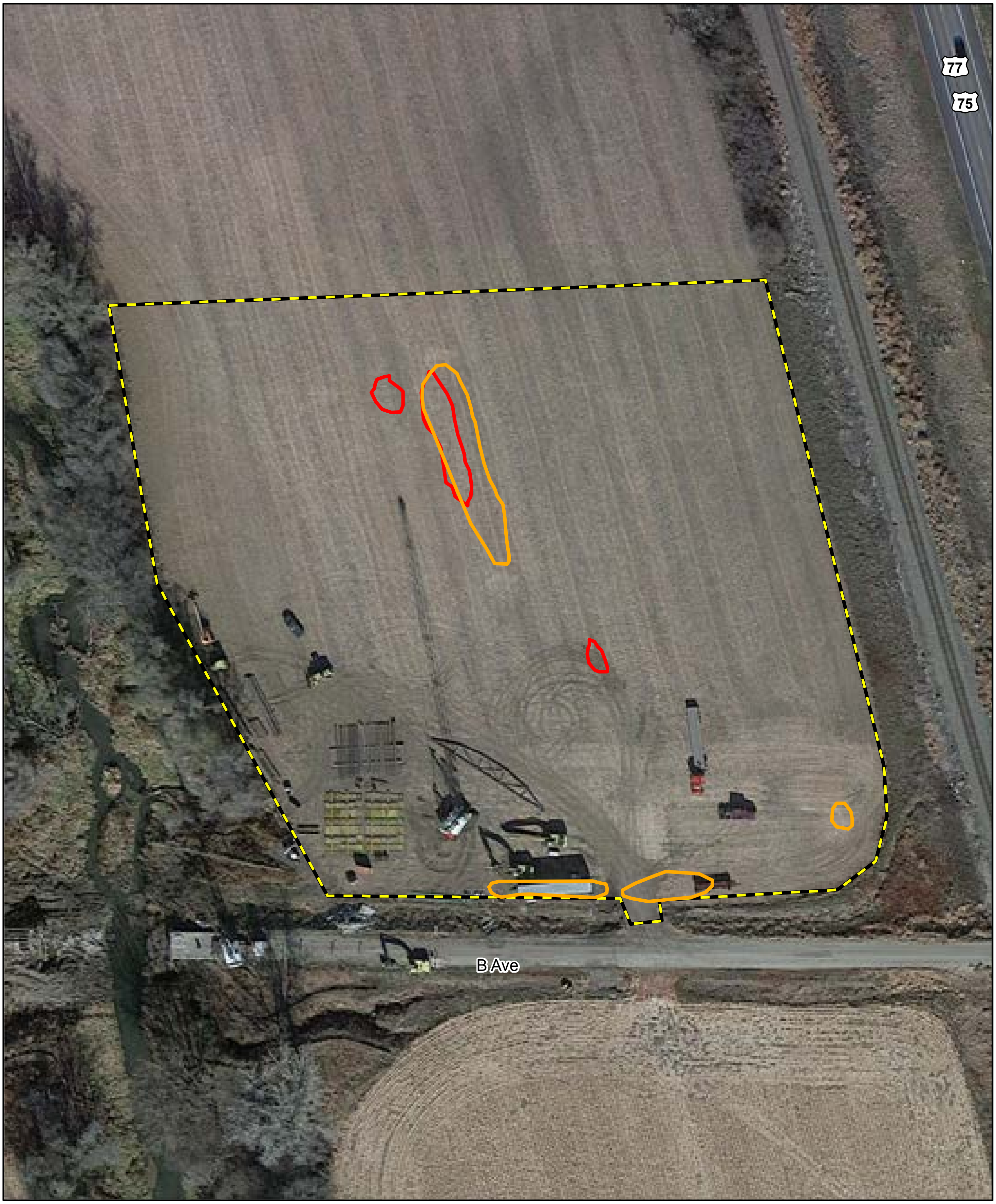

N

0 25 50 100 ft

1 " = 100 '

olsson

Study Area

Year

2010

2016

Winnebago Tribe Broadband Connectivity Project
Staging Area B
Thurston County, Nebraska
Combined WETS Map

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

N
0 25 50 100
ft
1 " = 100 '

Study Area
Final WETS

Winnebago Tribe Broadband Connectivity Project
Staging Area B
Thurston County, Nebraska
Final WETS Map

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WGS 1984 ARC System Zone 11
Olsson Project # 021-05175
Basemap: Google Satellite

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 6, 2005

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.87	3.18	3.85	2.49	NORMAL	2	3	6
2nd PRIOR MONTH*	June	2.78	4.43	5.35	6.58	WET	3	2	6
3rd PRIOR MONTH*	May	2.93	4.02	4.73	3.83	NORMAL	2	1	2
								SUM =	14

NOTE: If sum is

6 - 9	then prior period has been drier than normal
10 - 14	then prior period has been normal
15 - 18	then prior period has been wetter than normal

CONDITION VALUE:

Dry	= 1
Normal	= 2
Wet	= 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

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N

0 25 50 75 ft

1 " = 75 '

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area C
Thurston County, Nebraska
WETS Map
Aerial Date: August 6, 2005

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 28, 2006

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.78	4.43	5.35	3.69	NORMAL	2	3	6
2nd PRIOR MONTH*	May	2.93	4.02	4.73	0.76	DRY	1	2	2
3rd PRIOR MONTH*	April	1.93	3.12	3.77	2.54	NORMAL	2	1	2
								SUM =	10

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

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Winnebago Tribe Broadband Connectivity Project
Staging Area C
Thurston County, Nebraska
WETS Map
Aerial Date: July 28, 2006

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 27, 2007

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.87	3.18	3.85	1.43	DRY	1	3	3
2nd PRIOR MONTH*	June	2.78	4.43	5.35	2.38	DRY	1	2	2
3rd PRIOR MONTH*	May	2.93	4.02	4.73	3.13	NORMAL	2	1	2
								SUM =	7

NOTE: If sum is
6 - 9 then prior period has been drier than normal
10 - 14 then prior period has been normal
15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
Dry = 1
Normal = 2
Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Dry

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N
0 25 50 75 ft
1 " = 75 '

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area C
Thurston County, Nebraska
WETS Map
Aerial Date: August 27, 2007

WGS 1984 ARC System Zone 11
Olsson Project # 021-05175
Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: June 22, 2009

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	May	2.93	4.02	4.73	0.85	DRY	1	3	3
2nd PRIOR MONTH*	April	1.93	3.12	3.77	1.84	DRY	1	2	2
3rd PRIOR MONTH*	March	1.03	2.07	2.53	1.29	NORMAL	2	1	2
								SUM =	7

NOTE: If sum is

6 - 9	then prior period has been drier than normal
10 - 14	then prior period has been normal
15 - 18	then prior period has been wetter than normal

CONDITION VALUE:

Dry	= 1
Normal	= 2
Wet	= 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Dry

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N

0 25 50 75 ft

1 " = 75 '

olsson

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area C
Thurston County, Nebraska

WETS Map
Aerial Date: June 22, 2009

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23 PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 27, 2010

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.78	4.43	5.35	9.18	WET	3	3	9
2nd PRIOR MONTH*	May	2.93	4.02	4.73	2.51	DRY	1	2	2
3rd PRIOR MONTH*	April	1.93	3.12	3.77	2.87	NORMAL	2	1	2
								SUM =	13

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N
0 25 50 75
ft
1 " = 75 '

olsson

Study Area
WETS Area

Winnebago Tribe Broadband Connectivity Project
Staging Area C
Thurston County, Nebraska
WETS Map
Aerial Date: July 27, 2010

\\oa.ad.oaconsulting.com\fnts-ns1\projects\2021\05001-05500\021-05175\40-Design\GIS\23-06-26_NRPL_WETS Analysis_C_D.mxd PUBLISHED BY: mczerwinski DATE: June 27, 2023

WGS 1984 ARC System Zone 11
Olsson Project # 021-05175
Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 4, 2012

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.78	4.43	5.35	0.82	DRY	1	3	3
2nd PRIOR MONTH*	May	2.93	4.02	4.73	5.15	WET	3	2	6
3rd PRIOR MONTH*	April	1.93	3.12	3.77	3.26	NORMAL	2	1	2
								SUM =	11

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

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Winnebago Tribe Broadband Connectivity Project
Staging Area C
Thurston County, Nebraska

WETS Map
Aerial Date: July 4, 2012

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: September 16, 2014

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	August	1.86	3.14	3.81	5.88	WET	3	3	9
2nd PRIOR MONTH*	July	1.87	3.18	3.85	4.35	WET	3	2	6
3rd PRIOR MONTH*	June	2.78	4.43	5.35	12.79	WET	3	1	3
								SUM =	18

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Wet

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

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N

0 25 50 75 ft

1 " = 75 '

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area C
Thurston County, Nebraska
WETS Map
Aerial Date: September 16, 2014

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Lyons

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 13, 2016

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	2.13	3.32	4.00	4.78	WET	3	3	9
2nd PRIOR MONTH*	June	2.55	4.17	5.05	1.23	DRY	1	2	2
3rd PRIOR MONTH*	May	3.10	4.49	5.35	4.07	NORMAL	2	1	2
								SUM =	13

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Lyons, NE station was 1.51 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N

0 25 50 75 ft

1 " = 75 '

olsson

Study Area

WETS Area

Winnebago Tribe Broadband Connectivity Project
Staging Area C
Thurston County, Nebraska
WETS Map
Aerial Date: August 13, 2016

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 15, 2020

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.87	3.18	3.85	3.82	NORMAL	2	3	6
2nd PRIOR MONTH*	June	2.78	4.43	5.35	1.29	DRY	1	2	2
3rd PRIOR MONTH*	May	2.93	4.02	4.73	2.80	DRY	1	1	1
								SUM =	9

NOTE: If sum is

6 - 9	then prior period has been drier than normal
10 - 14	then prior period has been normal
15 - 18	then prior period has been wetter than normal

CONDITION VALUE:

Dry	= 1
Normal	= 2
Wet	= 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Dry

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N

0 25 50 75 ft

1 " = 75 '

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area C

Thurston County, Nebraska

WETS Map

Aerial Date: August 15, 2020

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WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 4, 2022

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.87	3.18	3.85	1.54	DRY	1	3	3
2nd PRIOR MONTH*	June	2.78	4.43	5.35	1.18	DRY	1	2	2
3rd PRIOR MONTH*	May	2.93	4.02	4.73	3.22	NORMAL	2	1	2
								SUM =	7

NOTE: If sum is

6 - 9 then prior period has been drier than normal
10 - 14 then prior period has been normal
15 - 18 then prior period has been wetter than normal

CONDITION VALUE:

Dry = 1
Normal = 2
Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Dry

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N

0 25 50 75 ft

1 " = 75 '

olsson

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area C
Thurston County, Nebraska
WETS Map
Aerial Date: August 4, 2022

WGS 1984 ARC System Zone 11 | Olsson Project # 021-05175 | Basemap: NAIP Aerial Imagery

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N
0 25 50 75 ft
1 " = 75 '

olsson

Study Area
Year
2010
2016

Winnebago Tribe Broadband Connectivity Project
Staging Area C
Thurston County, Nebraska
Combined WETS Map

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WGS 1984 ARC System Zone 11
Olsson Project # 021-05175
Basemap: Google Satellite

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N

0 25 50 75 ft

1 " = 75 '

olsson

Study Area

Final WETS

Winnebago Tribe Broadband Connectivity Project
Staging Area C
Thurston County, Nebraska
Final WETS Map

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 6, 2005

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.87	3.18	3.85	2.49	NORMAL	2	3	6
2nd PRIOR MONTH*	June	2.78	4.43	5.35	6.58	WET	3	2	6
3rd PRIOR MONTH*	May	2.93	4.02	4.73	3.83	NORMAL	2	1	2
								SUM =	14

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N

0 75 150 ft

1 " = 150 '

olsson

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area D
Thurston County, Nebraska
WETS Map
Aerial Date: August 6, 2005

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 28, 2006

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.78	4.43	5.35	3.69	NORMAL	2	3	6
2nd PRIOR MONTH*	May	2.93	4.02	4.73	0.76	DRY	1	2	2
3rd PRIOR MONTH*	April	1.93	3.12	3.77	2.54	NORMAL	2	1	2
								SUM =	10

NOTE: If sum is
6 - 9 then prior period has been drier than normal
10 - 14 then prior period has been normal
15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
Dry = 1
Normal = 2
Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

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N

0 75 150 ft

1 " = 150 '

olsson

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area D
Thurston County, Nebraska
WETS Map
Aerial Date: July 28, 2006

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 27, 2007

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.87	3.18	3.85	1.43	DRY	1	3	3
2nd PRIOR MONTH*	June	2.78	4.43	5.35	2.38	DRY	1	2	2
3rd PRIOR MONTH*	May	2.93	4.02	4.73	3.13	NORMAL	2	1	2
								SUM =	7

NOTE: If sum is
6 - 9 then prior period has been drier than normal
10 - 14 then prior period has been normal
15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
Dry = 1
Normal = 2
Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Dry

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

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N

0 75 150 ft

1 " = 150 '

olsson

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area D
Thurston County, Nebraska
WETS Map
Aerial Date: August 27, 2007

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: June 22, 2009

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	May	2.93	4.02	4.73	0.85	DRY	1	3	3
2nd PRIOR MONTH*	April	1.93	3.12	3.77	1.84	DRY	1	2	2
3rd PRIOR MONTH*	March	1.03	2.07	2.53	1.29	NORMAL	2	1	2
								SUM =	7

NOTE: If sum is

6 - 9	then prior period has been drier than normal
10 - 14	then prior period has been normal
15 - 18	then prior period has been wetter than normal

CONDITION VALUE:

Dry	= 1
Normal	= 2
Wet	= 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Dry

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N

0 75 150

ft

1 " = 150 '

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area D
Thurston County, Nebraska

WETS Map
Aerial Date: June 22, 2009

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23 PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 27, 2010

	MONTH	LONG TERM RAINFALL RECORDS 3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.78	4.43	5.35	9.18	WET	3	3	9
2nd PRIOR MONTH*	May	2.93	4.02	4.73	2.51	DRY	1	2	2
3rd PRIOR MONTH*	April	1.93	3.12	3.77	2.87	NORMAL	2	1	2
								SUM =	13

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N

0 75 150

ft

1 " = 150 '

olsson

Study Area

WETS Area

Winnebago Tribe Broadband Connectivity Project
Staging Area D
Thurston County, Nebraska
WETS Map
Aerial Date: July 27, 2010

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23 PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 4, 2012

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.78	4.43	5.35	0.82	DRY	1	3	3
2nd PRIOR MONTH*	May	2.93	4.02	4.73	5.15	WET	3	2	6
3rd PRIOR MONTH*	April	1.93	3.12	3.77	3.26	NORMAL	2	1	2
								SUM =	11

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N

0 75 150 ft

1 " = 150 '

Study Area

WETS Area

Winnebago Tribe Broadband Connectivity Project
Staging Area D

Thurston County, Nebraska

WETS Map

Aerial Date: July 4, 2012

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: September 16, 2014

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	August	1.86	3.14	3.81	5.88	WET	3	3	9
2nd PRIOR MONTH*	July	1.87	3.18	3.85	4.35	WET	3	2	6
3rd PRIOR MONTH*	June	2.78	4.43	5.35	12.79	WET	3	1	3
								SUM =	18

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Wet

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

Study Area

N

0 75 150 ft

1 " = 150 '

olsson

Winnebago Tribe Broadband Connectivity Project
Staging Area D
Thurston County, Nebraska
WETS Map
Aerial Date: September 16, 2014

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

\\oa.ad.oaconsulting.com\fnts-ns1\projects\2021\05001-05500\021-05175\40-Design\GIS\23-06-26_NRPL_WETS Analysis_C_D.mxd PUBLISHED BY: mczerwinski DATE: June 27, 2023

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23 PREPARED BY: Kari Sherman

WEATHER STATION: Lyons

COUNTY: Thurston STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 13, 2016

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	2.13	3.32	4.00	4.78	WET	3	3	9
2nd PRIOR MONTH*	June	2.55	4.17	5.05	1.23	DRY	1	2	2
3rd PRIOR MONTH*	May	3.10	4.49	5.35	4.07	NORMAL	2	1	2
								SUM =	13

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Lyons, NE station was 1.51 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

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N

0 75 150 ft

1 " = 150 '

olsson

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area D
Thurston County, Nebraska
WETS Map
Aerial Date: August 13, 2016

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23

PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 15, 2020

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.87	3.18	3.85	3.82	NORMAL	2	3	6
2nd PRIOR MONTH*	June	2.78	4.43	5.35	1.29	DRY	1	2	2
3rd PRIOR MONTH*	May	2.93	4.02	4.73	2.80	DRY	1	1	1
								SUM =	9

NOTE: If sum is
6 - 9 then prior period has been drier than normal
10 - 14 then prior period has been normal
15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
Dry = 1
Normal = 2
Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Dry

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N

0 75 150 ft

1 " = 150 '

olsson

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area D
Thurston County, Nebraska
WETS Map
Aerial Date: August 15, 2020

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 6.28.23 PREPARED BY: Kari Sherman

WEATHER STATION: Wakefield 3NW

COUNTY: Thurston STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 4, 2022

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.87	3.18	3.85	1.54	DRY	1	3	3
2nd PRIOR MONTH*	June	2.78	4.43	5.35	1.18	DRY	1	2	2
3rd PRIOR MONTH*	May	2.93	4.02	4.73	3.22	NORMAL	2	1	2
								SUM =	7

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Dry

Prior to the site visit monthly precipitation observed at the Wakefield 3NW, NE station was 5.27 inches, which would be considered heavy compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N

0 75 150

ft

1 " = 150 '

olsson

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area D

Thurston County, Nebraska

WETS Map

Aerial Date: August 4, 2022

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

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N

0 75 150

ft

1 " = 150 '

olsson

Study Area

Year

2010

2012

Winnebago Tribe Broadband Connectivity Project

Staging Area D

Thurston County, Nebraska

Combined WETS Map

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

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N

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1 " = 150 '

Study Area

Final WETS

olsson

Winnebago Tribe Broadband Connectivity Project
Staging Area D

Thurston County, Nebraska

Final WETS Map

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/17/2023

PREPARED BY: Kari Sherman

WEATHER STATION: Sioux City AP, IA

COUNTY: Woodbury

STATE: Iowa

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 6, 2005

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.77	3.22	3.93	2.51	NORMAL	2	3	6
2nd PRIOR MONTH*	June	2.33	3.74	4.52	4.13	NORMAL	2	2	4
3rd PRIOR MONTH*	May	2.73	3.77	4.44	3.39	NORMAL	2	1	2
								SUM =	12

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

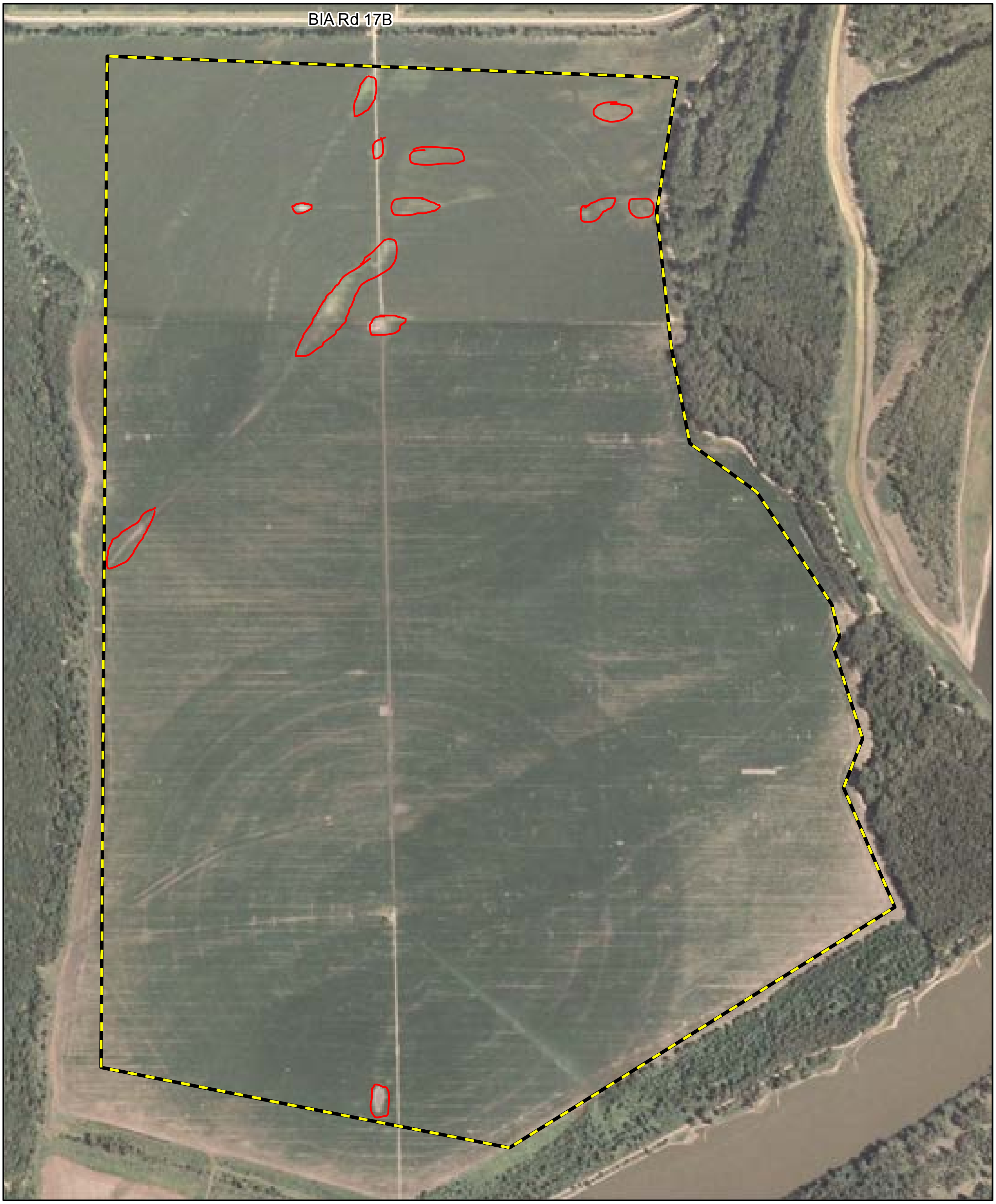
CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were: Normal

Prior to the site visit monthly precipitation observed at the Sioux City AP, IA station was 1.79 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.



Study Area
WETS Area

N
0 425 850 ft
1 " = 850 '

olsson

Winnebago Tribe Broadband Connectivity Project
Staging Area E
Thurston County, Nebraska
WETS Map
Aerial Date: August 6, 2005

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WGS 1984 ARC System Zone 11
Olsson Project # 021-05175
Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/17/2023

PREPARED BY: Kari Sherman

WEATHER STATION: Sioux City AP, IA

COUNTY: Woodbury

STATE: Iowa

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 28, 2006

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.33	3.74	4.52	3.23	NORMAL	2	3	6
2nd PRIOR MONTH*	May	2.73	3.77	4.44	0.87	DRY	1	2	2
3rd PRIOR MONTH*	April	1.76	2.83	3.42	3.37	NORMAL	2	1	2
								SUM =	10

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were: Normal

Prior to the site visit monthly precipitation observed at the Sioux City AP, IA station was 1.79 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N
0 425 850
ft
1 " = 850 '

olsson

Study Area
WETS Area

Winnebago Tribe Broadband Connectivity Project
Staging Area E
Thurston County, Nebraska
WETS Map
Aerial Date: July 28, 2006

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WGS 1984 ARC System Zone 11
Olsson Project # 021-05175
Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/17/2023 PREPARED BY: Kari Sherman

WEATHER STATION: Sioux City AP, IA

COUNTY: Woodbury STATE: Iowa

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 17, 2007

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.33	3.74	4.52	2.70	NORMAL	2	3	6
2nd PRIOR MONTH*	May	2.73	3.77	4.44	4.74	WET	3	2	6
3rd PRIOR MONTH*	April	1.76	2.83	3.42	4.64	WET	3	1	3
								SUM =	15

NOTE: If sum is
6 - 9 then prior period has been drier than normal
10 - 14 then prior period has been normal
15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
Dry = 1
Normal = 2
Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were: Wet

Prior to the site visit monthly precipitation observed at the Sioux City AP, IA station was 1.79 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

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N

0 425 850

ft

1 " = 850 '

olsson

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area E

Thurston County, Nebraska

WETS Map

Aerial Date: July 17, 2007

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/17/2023 PREPARED BY: Kari Sherman

WEATHER STATION: Sioux City AP, IA

COUNTY: Woodbury STATE: Iowa

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: June 30, 2009

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	May	2.73	3.77	4.44	1.00	DRY	1	3	3
2nd PRIOR MONTH*	April	1.76	2.83	3.42	1.62	DRY	1	2	2
3rd PRIOR MONTH*	March	1.07	1.96	2.39	1.44	NORMAL	2	1	2
								SUM =	7

NOTE: If sum is

6 - 9	then prior period has been drier than normal
10 - 14	then prior period has been normal
15 - 18	then prior period has been wetter than normal

CONDITION VALUE:

Dry	= 1
Normal	= 2
Wet	= 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were: Dry

Prior to the site visit monthly precipitation observed at the Sioux City AP, IA station was 1.79 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N

0 425 850 ft

1 " = 850 '

olsson

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area E
Thurston County, Nebraska
WETS Map
Aerial Date: June 30, 2009

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WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/17/2023

PREPARED BY: Kari Sherman

WEATHER STATION: Sioux City AP, IA

COUNTY: Woodbury

STATE: Iowa

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 27, 2010

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.33	3.74	4.52	6.40	WET	3	3	9
2nd PRIOR MONTH*	May	2.73	3.77	4.44	1.41	DRY	1	2	2
3rd PRIOR MONTH*	April	1.76	2.83	3.42	1.49	DRY	1	1	1
								SUM =	12

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

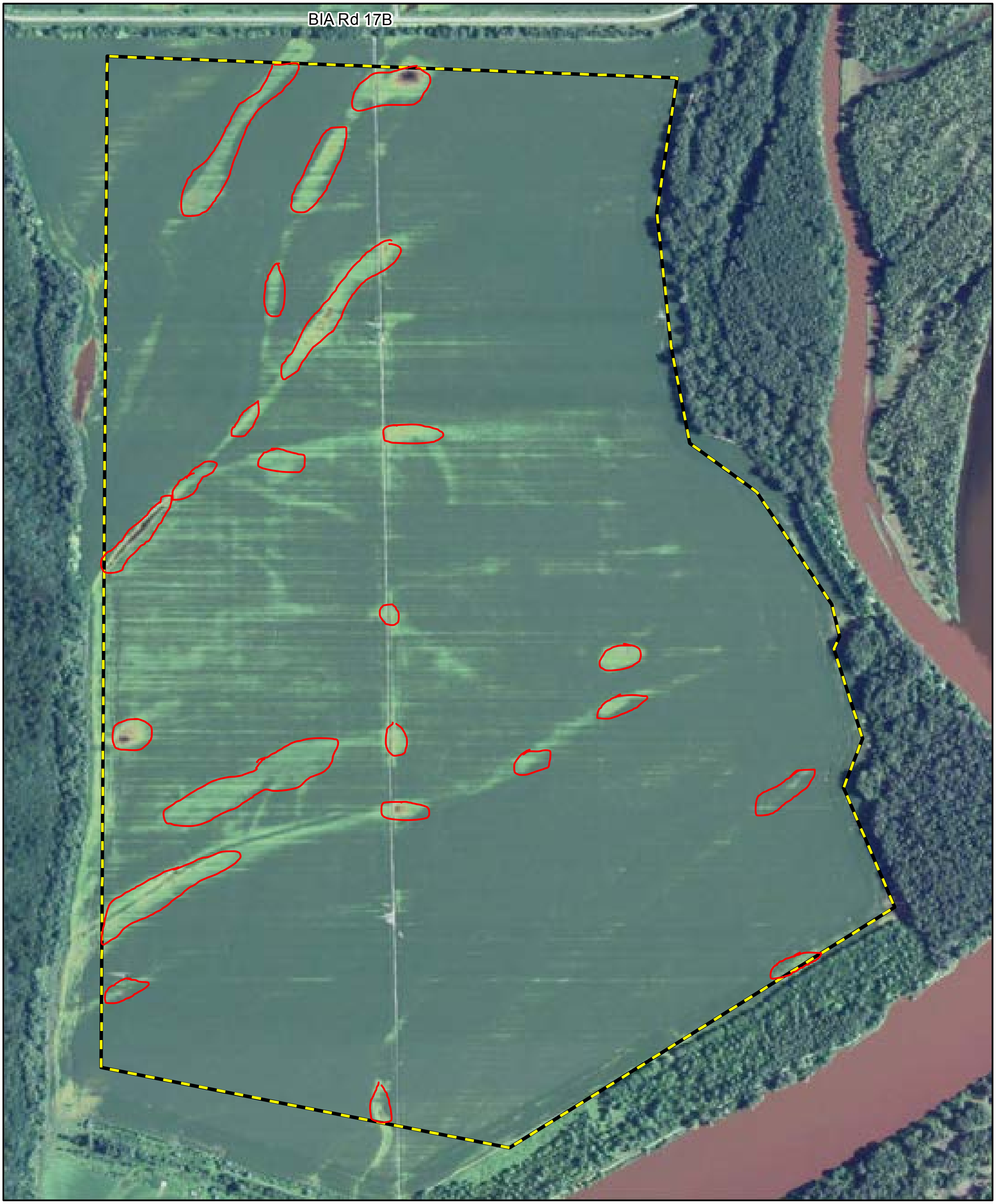
CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were: Normal

Prior to the site visit monthly precipitation observed at the Sioux City AP, IA station was 1.79 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.



N

0 425 850 ft

1 " = 850 '

Study Area

WETS Area

olsson

Winnebago Tribe Broadband Connectivity Project
Staging Area E
Thurston County, Nebraska
WETS Map
Aerial Date: July 27, 2010

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WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/17/2023 PREPARED BY: Kari Sherman

WEATHER STATION: Sioux City AP, IA

COUNTY: Woodbury STATE: Iowa

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 4, 2012

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.33	3.74	4.52	2.16	DRY	1	3	3
2nd PRIOR MONTH*	May	2.73	3.77	4.44	6.20	WET	3	2	6
3rd PRIOR MONTH*	April	1.76	2.83	3.42	4.82	WET	3	1	3
								SUM =	12

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

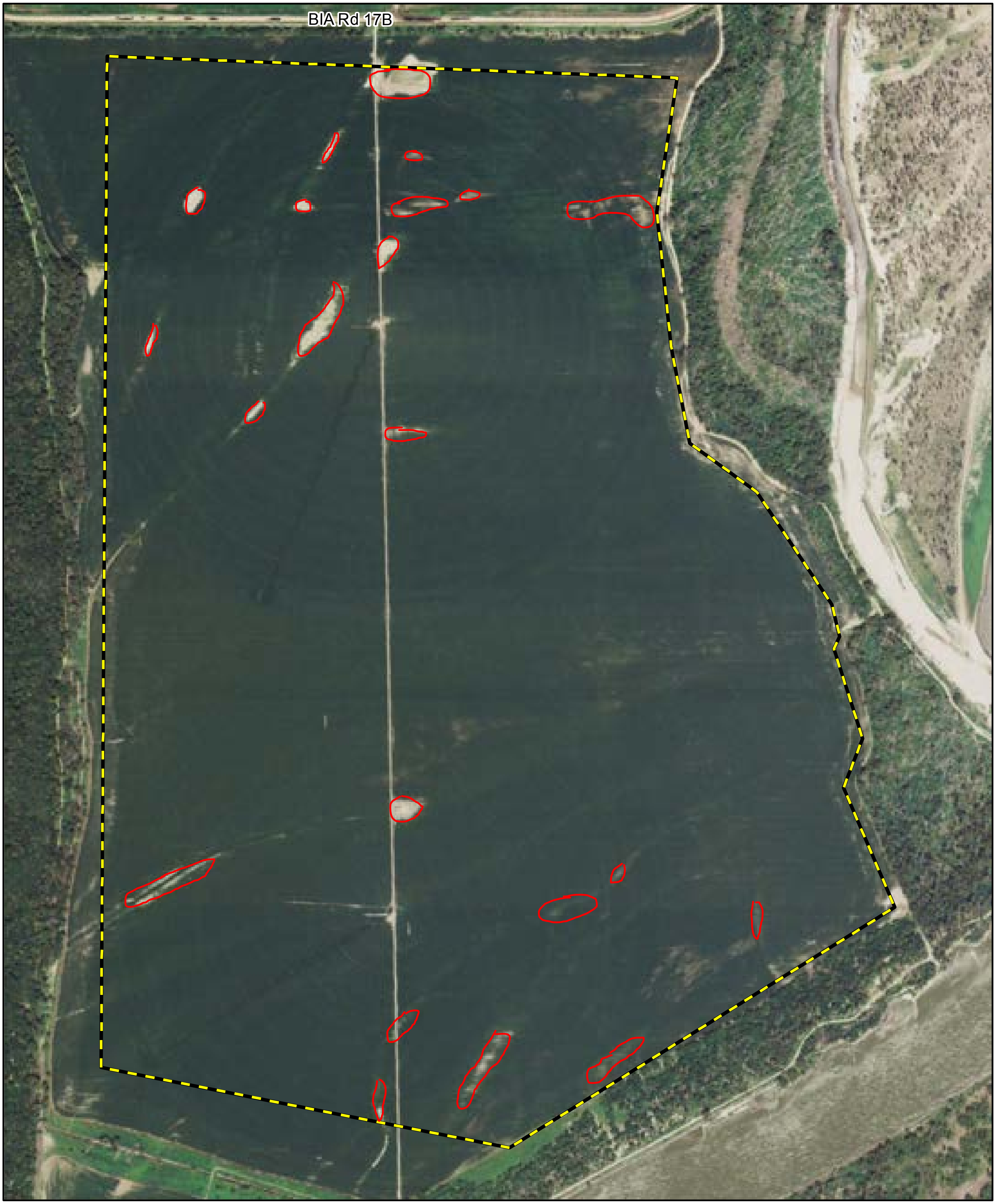
CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were: Normal

Prior to the site visit monthly precipitation observed at the Sioux City AP, IA station was 1.79 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.



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ft

1 " = 850 '

olsson

Study Area

WETS Area

Winnebago Tribe Broadband Connectivity Project

Staging Area E

Thurston County, Nebraska

WETS Map

Aerial Date: July 4, 2012

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/17/2023

PREPARED BY: Kari Sherman

WEATHER STATION: Sioux City AP, IA

COUNTY: Woodbury

STATE: Iowa

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: September 16, 2014

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	August	1.90	3.43	4.18	10.12	WET	3	3	9
2nd PRIOR MONTH*	July	1.77	3.22	3.93	3.61	NORMAL	2	2	4
3rd PRIOR MONTH*	June	2.33	3.74	4.52	16.65	WET	3	1	3
								SUM =	16

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were: Wet

Prior to the site visit monthly precipitation observed at the Sioux City AP, IA station was 1.79 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N

0 425 850 ft

1 " = 850 '

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area E
Thurston County, Nebraska
WETS Map
Aerial Date: September 16, 2014

F:\2021\05001-05500\021-05175\40-Design\GIS\23-07-17_NRPL_WETS Analysis_B-107_Staging_Locations.mxd PUBLISHED BY: mczerwinski DATE: July 17, 2023

WGS 1984 ARC System Zone 11 | Olsson Project # 021-05175 | Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/17/2023 PREPARED BY: Kari Sherman

WEATHER STATION: Sioux City AP, IA

COUNTY: Woodbury STATE: Iowa

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 13, 2016

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.77	3.22	3.93	2.19	NORMAL	2	3	6
2nd PRIOR MONTH*	June	2.33	3.74	4.52	1.38	DRY	1	2	2
3rd PRIOR MONTH*	May	2.73	3.77	4.44	5.02	WET	3	1	3
								SUM =	11

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

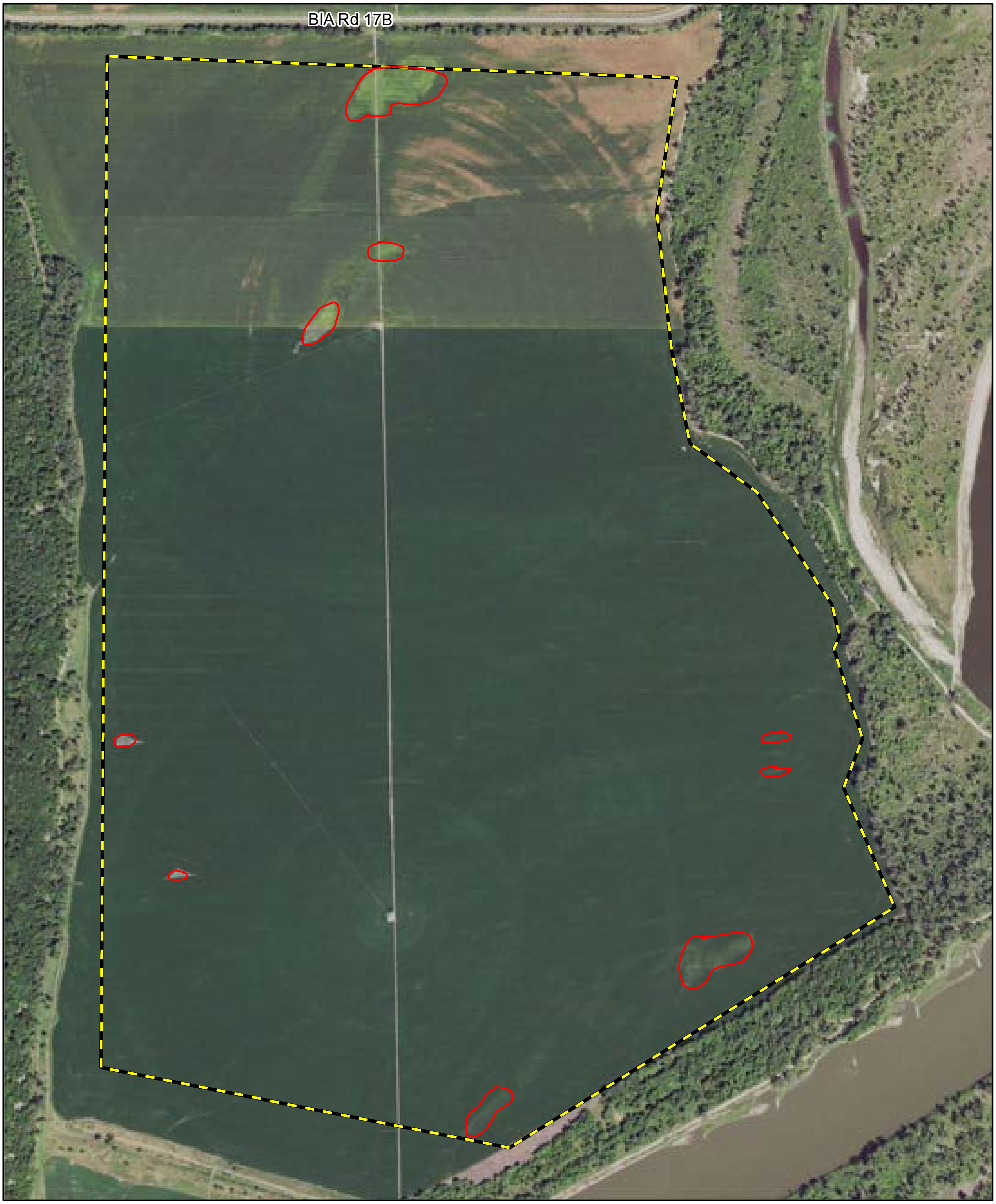
CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were: Normal

Prior to the site visit monthly precipitation observed at the Sioux City AP, IA station was 1.79 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.



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N

0 425 850 ft

1 " = 850 '

olsson

Study Area

WETS Area

Winnebago Tribe Broadband Connectivity Project
Staging Area E

Thurston County, Nebraska

WETS Map

Aerial Date: August 13, 2016

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/17/2023

PREPARED BY: Kari Sherman

WEATHER STATION: Sioux City AP, IA

COUNTY: Woodbury

STATE: Iowa

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 15, 2020

oject # 021-05175

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.77	3.22	3.93	4.15	WET	3	3	9
2nd PRIOR MONTH*	June	2.33	3.74	4.52	1.56	DRY	1	2	2
3rd PRIOR MONTH*	May	2.73	3.77	4.44	2.56	DRY	1	1	1
								SUM =	12

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

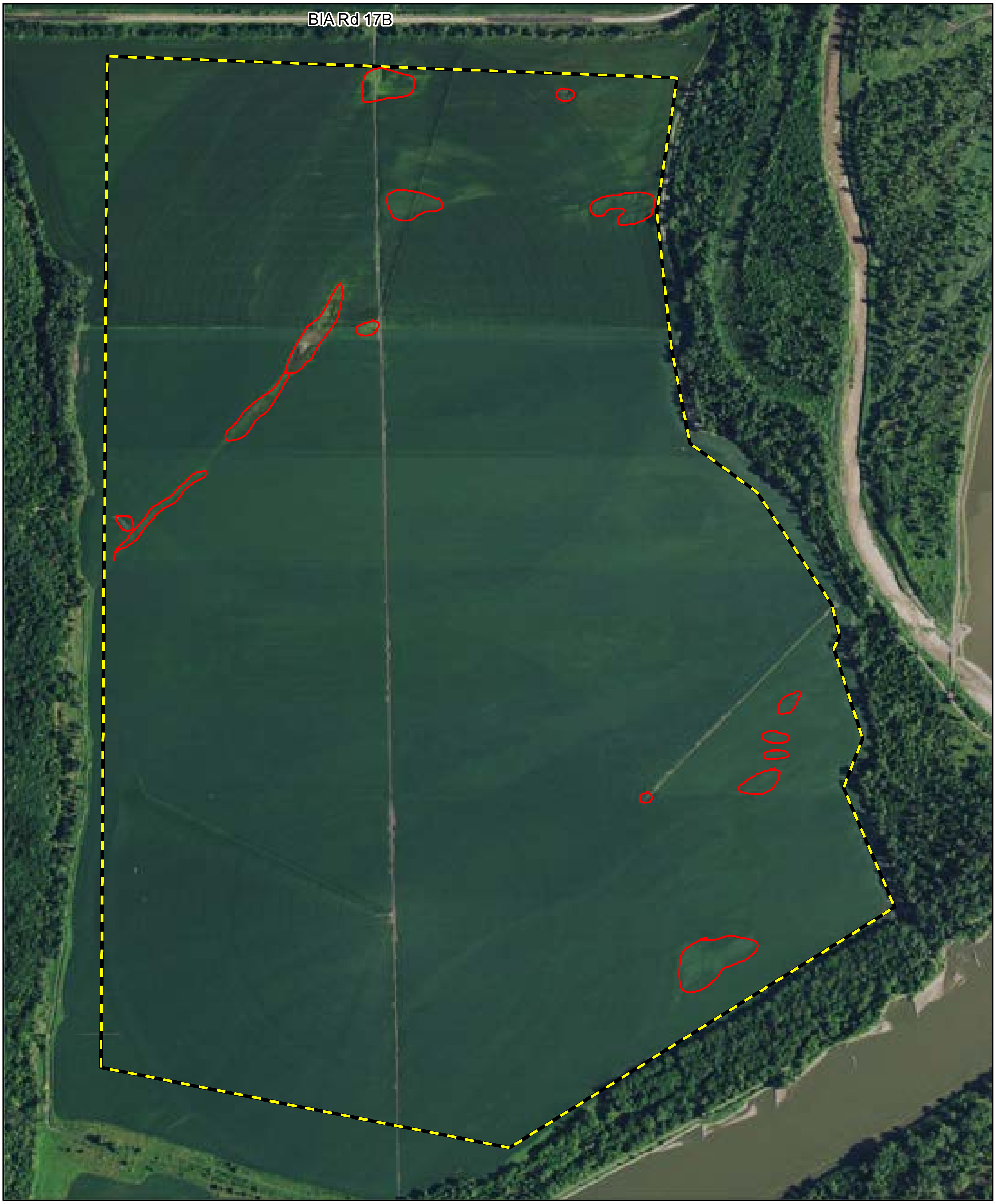
CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were: Normal

Prior to the site visit monthly precipitation observed at the Sioux City AP, IA station was 1.79 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.



F:\2021\05001-05500\021-05175\40-Design\GIS\23-07-17_NRPL_WETS Analysis_B-107_Staging_Locations.mxd PUBLISHED BY: mczerwinski DATE: July 17, 2023

N

0 425 850 ft

1 " = 850 '

Study Area

WETS Area

Winnebago Tribe Broadband Connectivity Project

Staging Area E

Thurston County, Nebraska

WETS Map

Aerial Date: August 15, 2020

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/17/2023

PREPARED BY: Kari Sherman

WEATHER STATION: Sioux City AP, IA

COUNTY: Woodbury

STATE: Iowa

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 4, 2022

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.77	3.22	3.93	1.86	NORMAL	2	3	6
2nd PRIOR MONTH*	June	2.33	3.74	4.52	1.15	DRY	1	2	2
3rd PRIOR MONTH*	May	2.73	3.77	4.44	2.18	DRY	1	1	1
								SUM =	9

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were: Dry

Prior to the site visit monthly precipitation observed at the Sioux City AP, IA station was 1.79 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N

0 425 850

ft

1 " = 850 '

olsson

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area E
Thurston County, Nebraska

WETS Map
Aerial Date: August 4, 2022

F:\2021\05001-05500\021-05175\40-Design\GIS\23-07-17_NRPL_WETS Analysis_B-107_Staging_Locations.mxd PUBLISHED BY: mczerwinski DATE: July 17, 2023

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

N

0 425 850

ft

1 " = 850 '

Study Area

Year

2005

2006

2010

2012

2016

2020

Winnebago Tribe Broadband Connectivity Project

Staging Area E

Thurston County, Nebraska

Combined WETS Map

\\oa.ad.oaconsulting.com\fnts-ns1\projects\2021\05001-05500\021-05175\40-Design\GIS\23-07-17_NRPL_WETS Analysis_B-107_Staging_Locations.mxd PUBLISHED BY: mczerwinski DATE: July 18, 2023

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

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0 425 850 ft

1 " = 850 '

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Study Area

Final WETS

Winnebago Tribe Broadband Connectivity Project
Staging Area E
Thurston County, Nebraska
Final WETS Map

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/17/2023 PREPARED BY: Kari Sherman

WEATHER STATION: Sioux City AP, IA

COUNTY: Woodbury STATE: Iowa

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: September 3, 2004

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	August	1.90	3.43	4.18	2.93	NORMAL	2	3	6
2nd PRIOR MONTH*	July	1.77	3.22	3.93	4.12	WET	3	2	6
3rd PRIOR MONTH*	June	2.33	3.74	4.52	4.32	NORMAL	2	1	2
								SUM =	14

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

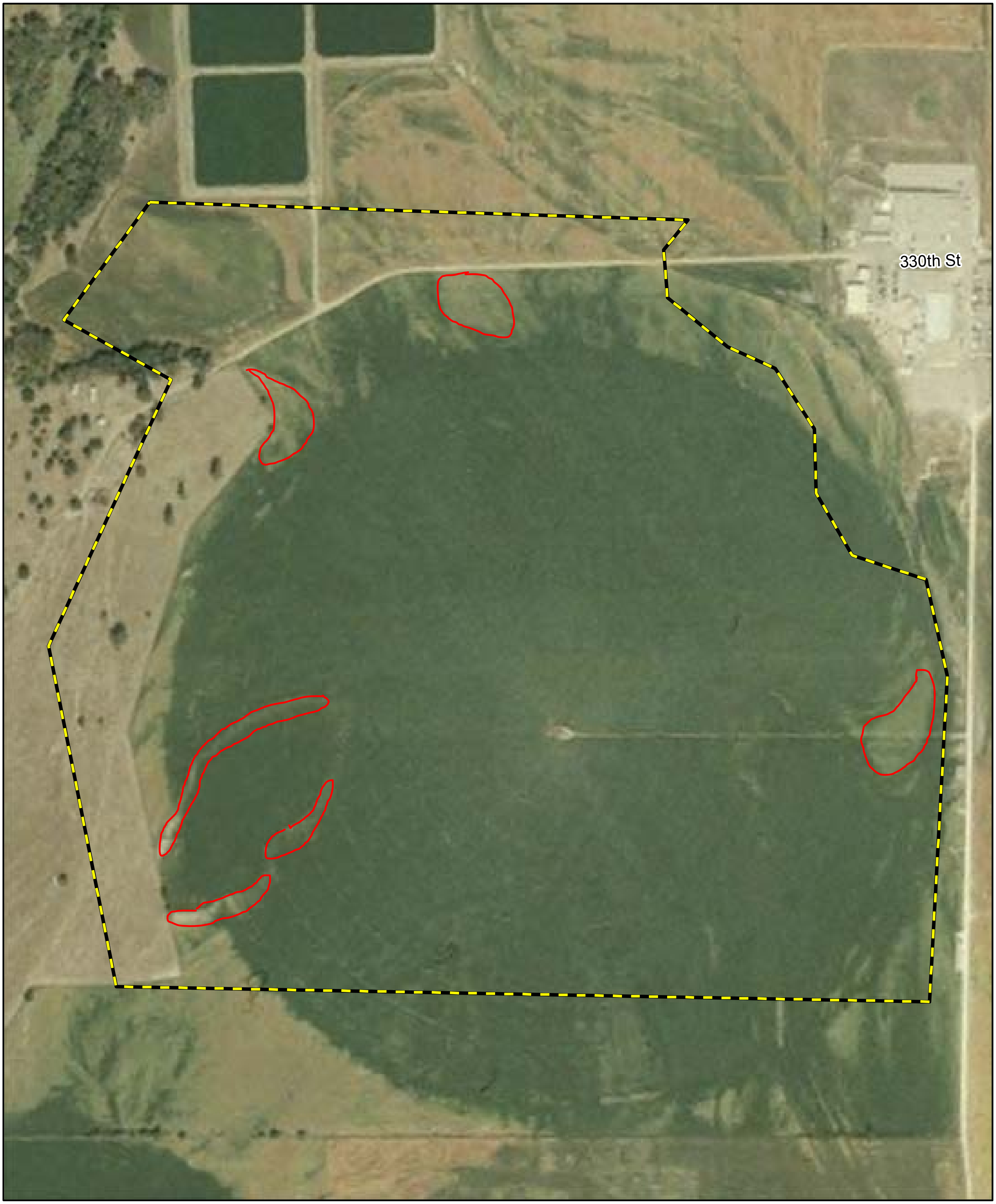
CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were: Normal

Prior to the site visit monthly precipitation observed at the Sioux City AP, IA station was 1.79 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.



N

0 275 550 ft

1 " = 550 '

olsson

Study Area

WETS Area

Winnebago Tribe Broadband Connectivity Project
Staging Area F

Woodbury County, Iowa

WETS Map

Aerial Date: September 3, 2004

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/17/2023 PREPARED BY: Kari Sherman

WEATHER STATION: Sioux City AP, IA

COUNTY: Woodbury STATE: Iowa

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 5, 2005

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.77	3.22	3.93	2.51	NORMAL	2	3	6
2nd PRIOR MONTH*	June	2.33	3.74	4.52	4.13	NORMAL	2	2	4
3rd PRIOR MONTH*	May	2.73	3.77	4.44	3.39	NORMAL	2	1	2
								SUM =	12

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

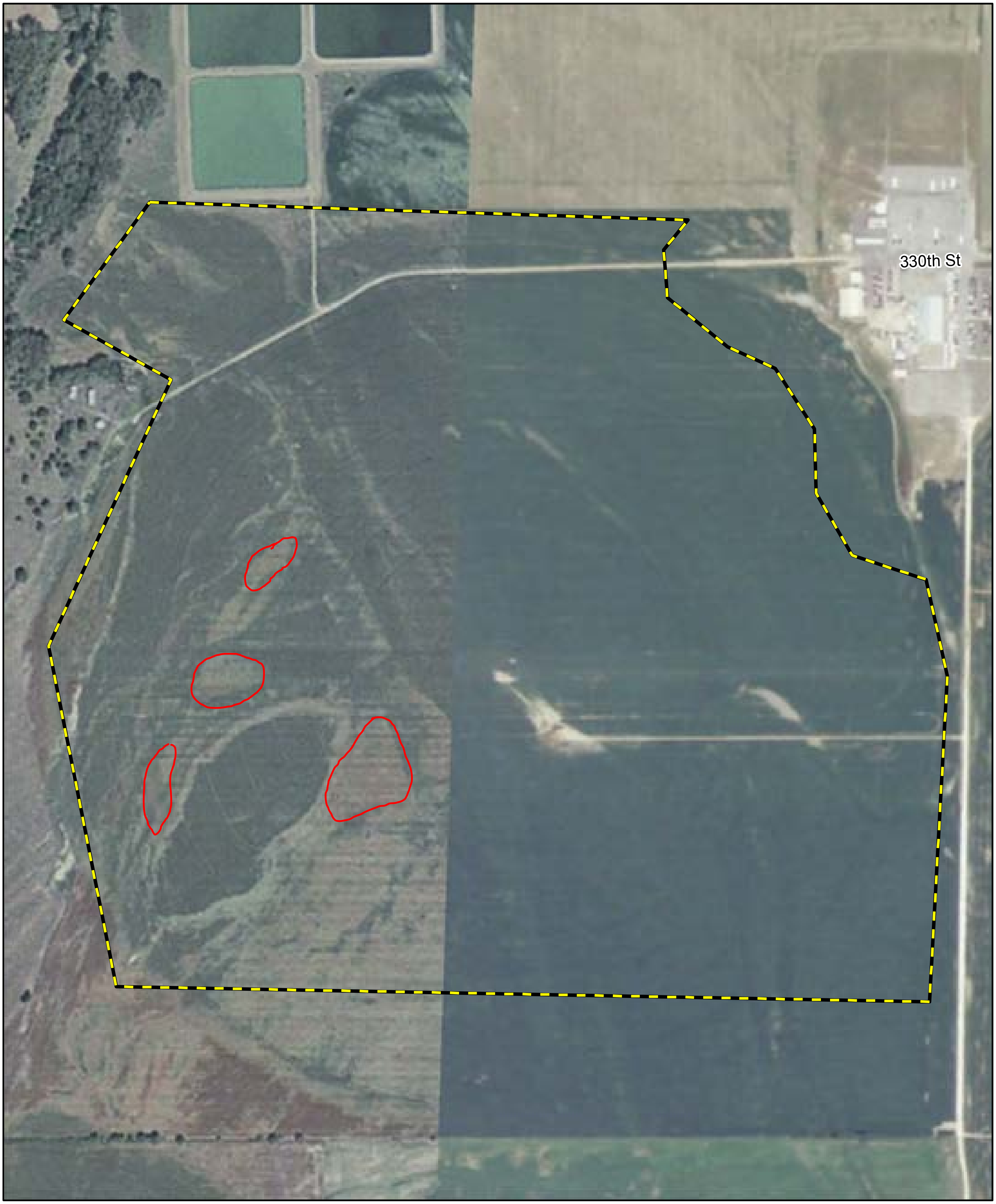
CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were: Normal

Prior to the site visit monthly precipitation observed at the Sioux City AP, IA station was 1.79 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.



F:\2021\05001-05500\021-05175\40-Design\GIS\23-07-17_NRPL_WETS Analysis_B-107_Staging_Locations.mxd PUBLISHED BY: mczerwinski DATE: July 17, 2023

N

0 275 550

ft

1 " = 550 '

Study Area

WETS Area

Winnebago Tribe Broadband Connectivity Project
Staging Area F

Woodbury County, Iowa

WETS Map

Aerial Date: August 5, 2005

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/17/2023 PREPARED BY: Kari Sherman

WEATHER STATION: Sioux City AP, IA

COUNTY: Woodbury STATE: Iowa

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 30, 2006

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.77	3.22	3.93	0.36	DRY	1	3	3
2nd PRIOR MONTH*	June	2.33	3.74	4.52	3.23	NORMAL	2	2	4
3rd PRIOR MONTH*	May	2.73	3.77	4.44	0.87	DRY	1	1	1
								SUM =	8

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were: Dry

Prior to the site visit monthly precipitation observed at the Sioux City AP, IA station was 1.79 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

Study Area

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Winnebago Tribe Broadband Connectivity Project
Staging Area F
Woodbury County, Iowa
WETS Map
Aerial Date: August 30, 2006

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WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/17/2023 PREPARED BY: Kari Sherman

WEATHER STATION: Sioux City AP, IA

COUNTY: Woodbury STATE: Iowa

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 13, 2008

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.33	3.74	4.52	3.35	NORMAL	2	3	6
2nd PRIOR MONTH*	May	2.73	3.77	4.44	5.20	WET	3	2	6
3rd PRIOR MONTH*	April	1.76	2.83	3.42	2.79	NORMAL	2	1	2
								SUM =	14

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

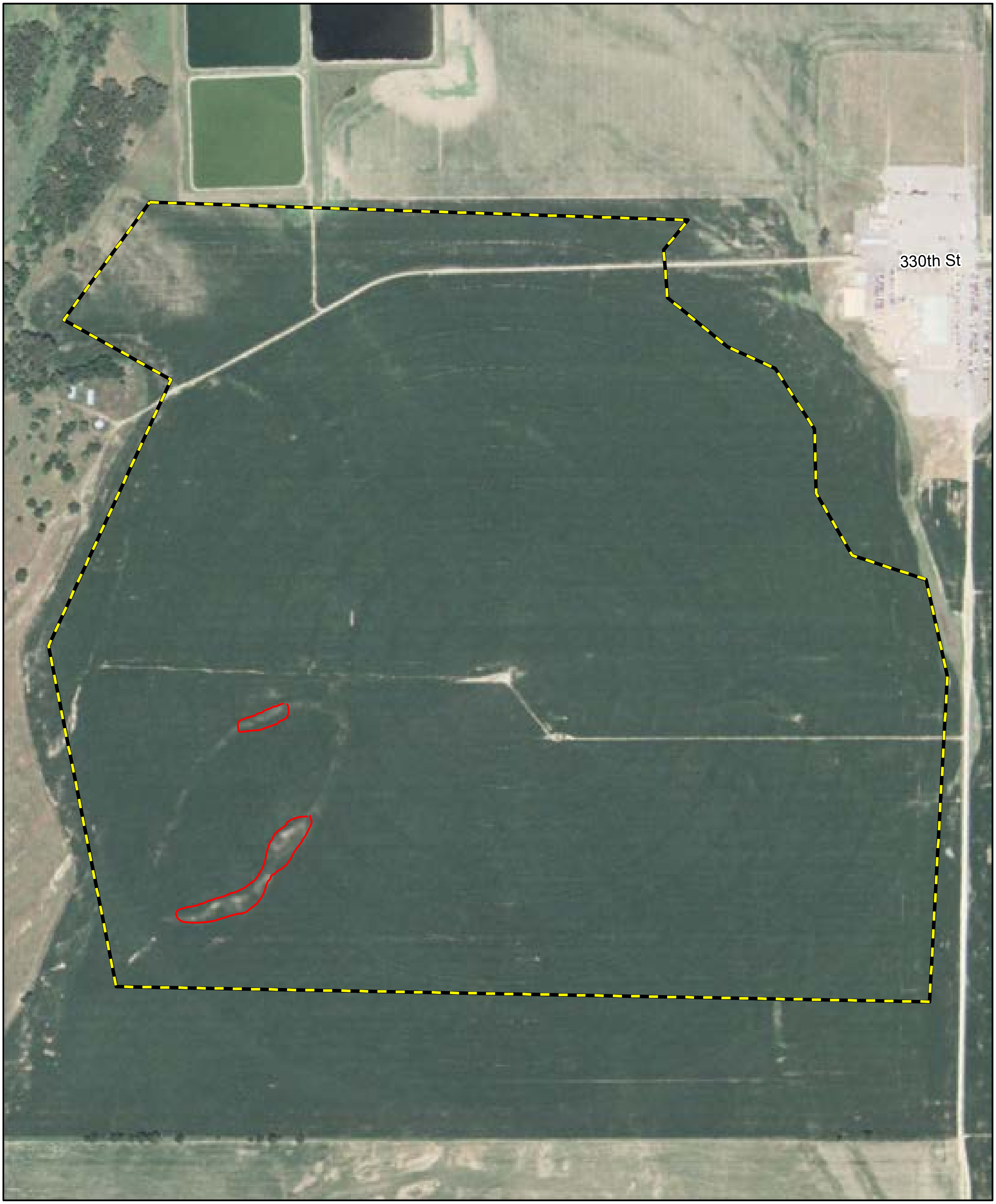
CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were: Normal

Prior to the site visit monthly precipitation observed at the Sioux City AP, IA station was 1.79 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.



N

0 275 550 ft

1 " = 550 '

Study Area

WETS Area

Winnebago Tribe Broadband Connectivity Project
Staging Area F

Woodbury County, Iowa

WETS Map

Aerial Date: July 13, 2008

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WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/17/2023 PREPARED BY: Kari Sherman

WEATHER STATION: Sioux City AP, IA

COUNTY: Woodbury STATE: Iowa

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 19, 2009

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.33	3.74	4.52	5.26	WET	3	3	9
2nd PRIOR MONTH*	May	2.73	3.77	4.44	1.00	DRY	1	2	2
3rd PRIOR MONTH*	April	1.76	2.83	3.42	1.62	DRY	1	1	1
								SUM =	12

NOTE: If sum is

			CONDITION VALUE:	
6 - 9	then prior period has been drier than normal		Dry	= 1
10 - 14	then prior period has been normal		Normal	= 2
15 - 18	then prior period has been wetter than normal		Wet	= 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were: Normal

Prior to the site visit monthly precipitation observed at the Sioux City AP, IA station was 1.79 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

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0 275 550 ft

1 " = 550 '

olsson

Study Area

WETS Area

Winnebago Tribe Broadband Connectivity Project
Staging Area F

Woodbury County, Iowa

WETS Map

Aerial Date: July 19, 2009

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/17/2023 PREPARED BY: Kari Sherman

WEATHER STATION: Sioux City AP, IA

COUNTY: Woodbury STATE: Iowa

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: September 20, 2010

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	August	1.90	3.43	4.18	4.50	WET	3	3	9
2nd PRIOR MONTH*	July	1.77	3.22	3.93	9.23	WET	3	2	6
3rd PRIOR MONTH*	June	2.33	3.74	4.52	6.40	WET	3	1	3
								SUM =	18

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

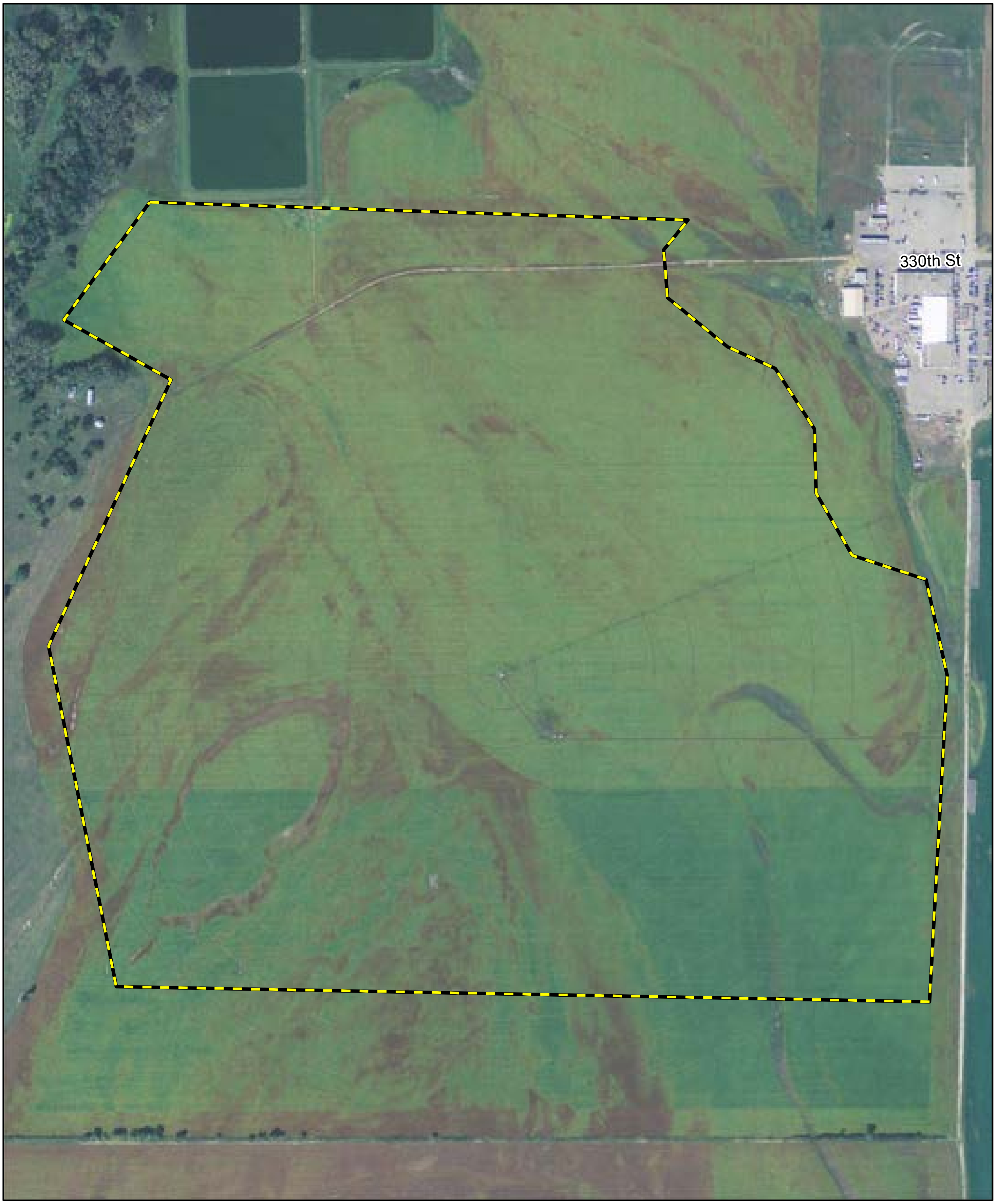
CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were: Wet

Prior to the site visit monthly precipitation observed at the Sioux City AP, IA station was 1.79 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.



F:\2021\05001-05500\021-05175\40-Design\GIS\23-07-17_NRPL_WETS Analysis_B-107_Staging_Locations.mxd PUBLISHED BY: mczerwinski DATE: July 17, 2023

N

0 275 550 ft

1 " = 550 '

olsson

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area F

Woodbury County, Iowa

WETS Map

Aerial Date: September 20, 2010

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/17/2023

PREPARED BY: Kari Sherman

WEATHER STATION: Sioux City AP, IA

COUNTY: Woodbury

STATE: Iowa

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 24, 2011

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.77	3.22	3.93	0.78	DRY	1	3	3
2nd PRIOR MONTH*	June	2.33	3.74	4.52	5.03	WET	3	2	6
3rd PRIOR MONTH*	May	2.73	3.77	4.44	6.67	WET	3	1	3
								SUM =	12

NOTE: If sum is
6 - 9 then prior period has been drier than normal
10 - 14 then prior period has been normal
15 - 18 then prior period has been wetter than normal

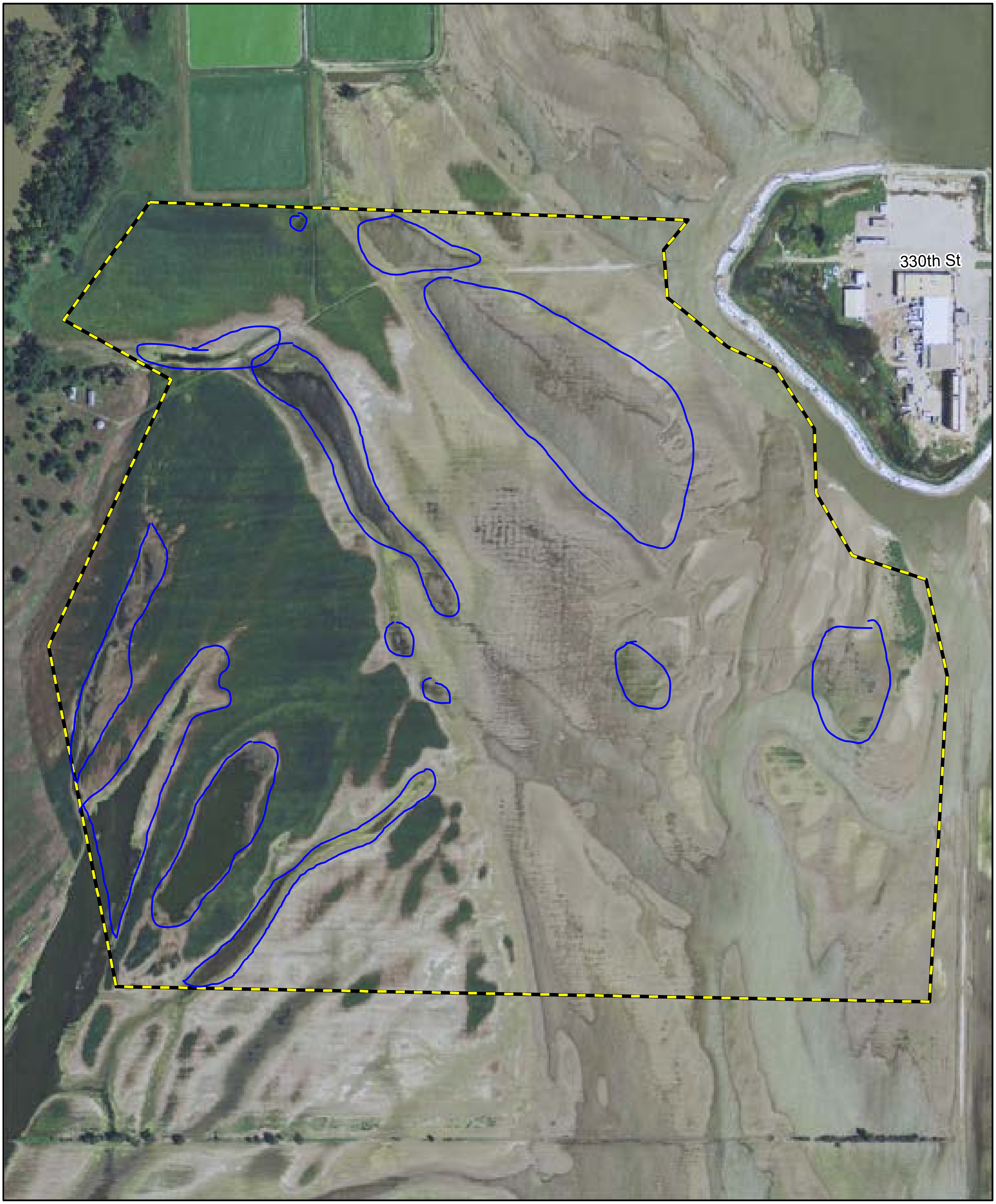
CONDITION VALUE:
Dry = 1
Normal = 2
Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were: Normal

Prior to the site visit monthly precipitation observed at the Sioux City AP, IA station was 1.79 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.



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0 275 550 ft

1 " = 550 '

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Study Area

2011 Flood Event Signatures*

*These signatures were not included to determine the Final WETS Map.

Winnebago Tribe Broadband Connectivity Project
Staging Area F
Woodbury County, Iowa
WETS Map
Aerial Date: August 24, 2011

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WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/17/2023
PREPARED BY: Kari Sherman

WEATHER STATION: Sioux City AP, IA

COUNTY: Woodbury
STATE: Iowa

SOIL NAME: Multiple (See Delineation Report)
GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 11, 2013

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.33	3.74	4.52	3.13	NORMAL	2	3	6
2nd PRIOR MONTH*	May	2.73	3.77	4.44	5.28	WET	3	2	6
3rd PRIOR MONTH*	April	1.76	2.83	3.42	4.85	WET	3	1	3
								SUM =	15

NOTE: If sum is
6 - 9 then prior period has been drier than normal
10 - 14 then prior period has been normal
15 - 18 then prior period has been wetter than normal

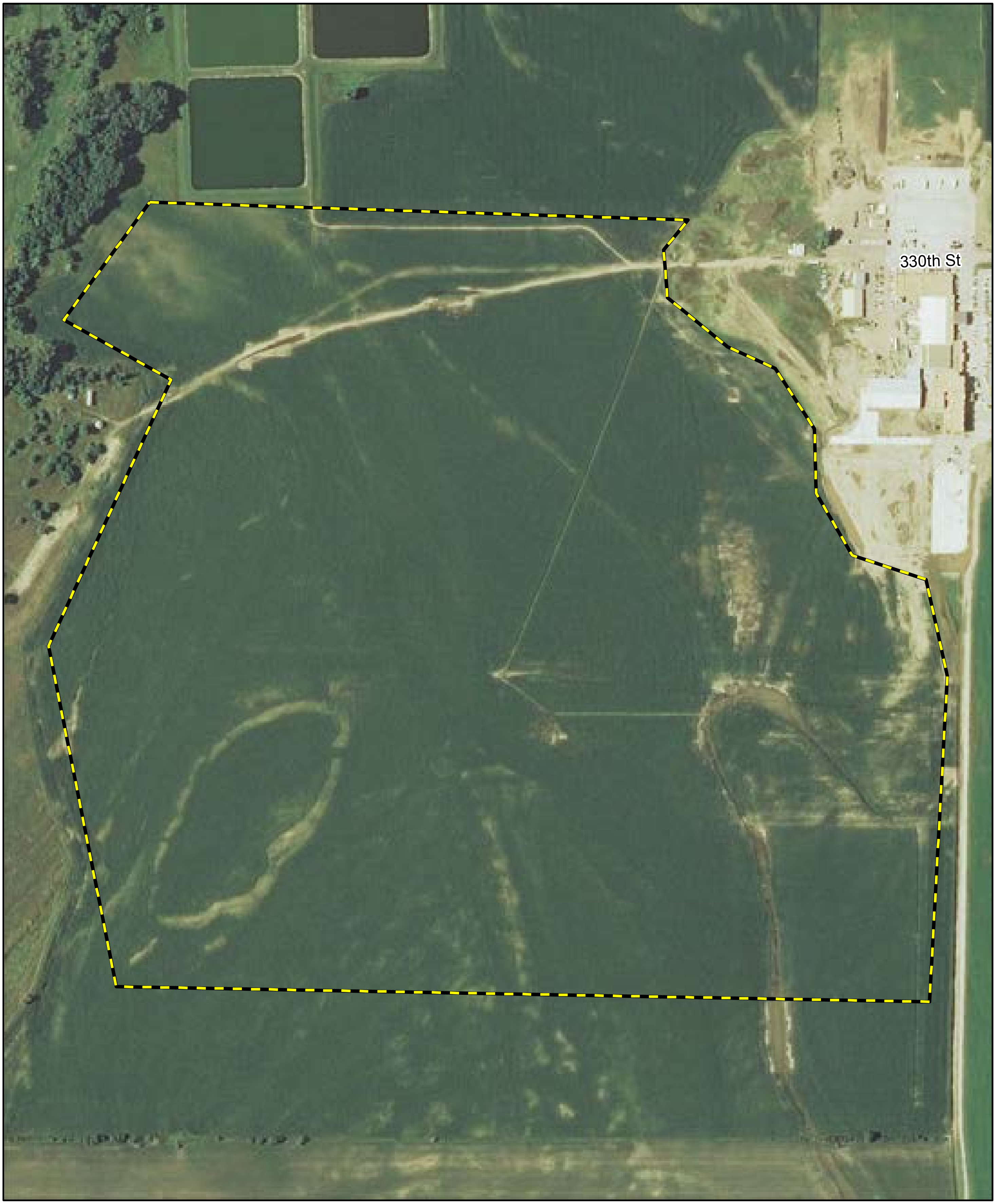
CONDITION VALUE:
Dry = 1
Normal = 2
Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were: Wet

Prior to the site visit monthly precipitation observed at the Sioux City AP, IA station was 1.79 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.



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0 275 550 ft

1 " = 550 '

olsson

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area F
Woodbury County, Iowa
WETS Map
Aerial Date: July 11, 2013

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/17/2023

PREPARED BY: Kari Sherman

WEATHER STATION: Sioux City AP, IA

COUNTY: Woodbury

STATE: Iowa

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 23, 2015

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.77	3.22	3.93	5.68	WET	3	3	9
2nd PRIOR MONTH*	June	2.33	3.74	4.52	4.19	NORMAL	2	2	4
3rd PRIOR MONTH*	May	2.73	3.77	4.44	3.53	NORMAL	2	1	2
								SUM =	15

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were: Wet

Prior to the site visit monthly precipitation observed at the Sioux City AP, IA station was 1.79 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N

0 275 550 ft

1 " = 550 '

olsson

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area F
Woodbury County, Iowa
WETS Map
Aerial Date: August 23, 2015

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WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/17/2023

PREPARED BY: Kari Sherman

WEATHER STATION: Sioux City AP, IA

COUNTY: Woodbury

STATE: Iowa

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 16, 2017

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.33	3.74	4.52	1.72	DRY	1	3	3
2nd PRIOR MONTH*	May	2.73	3.77	4.44	3.44	NORMAL	2	2	4
3rd PRIOR MONTH*	April	1.76	2.83	3.42	2.93	NORMAL	2	1	2
								SUM =	9

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Dry

Prior to the site visit monthly precipitation observed at the Sioux City AP, IA station was 1.79 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

Study Area

N

0 275 550 ft

1 " = 550 '

olsson

Winnebago Tribe Broadband Connectivity Project
Staging Area F

Woodbury County, Iowa

WETS Map

Aerial Date: July 16, 2017

F:\2021\05001-05500\021-05175\40-Design\GIS\23-07-17_NRPL_WETS Analysis_B-107_Staging_Locations.mxd PUBLISHED BY: mczerwinski DATE: July 17, 2023

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/17/2023

PREPARED BY: Kari Sherman

WEATHER STATION: Sioux City AP, IA

COUNTY: Woodbury

STATE: Iowa

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 12, 2021

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.77	3.22	3.93	1.43	DRY	1	3	3
2nd PRIOR MONTH*	June	2.33	3.74	4.52	1.31	DRY	1	2	2
3rd PRIOR MONTH*	May	2.73	3.77	4.44	2.77	NORMAL	2	1	2
								SUM =	7

NOTE: If sum is

6 - 9 then prior period has been drier than normal
10 - 14 then prior period has been normal
15 - 18 then prior period has been wetter than normal

CONDITION VALUE:

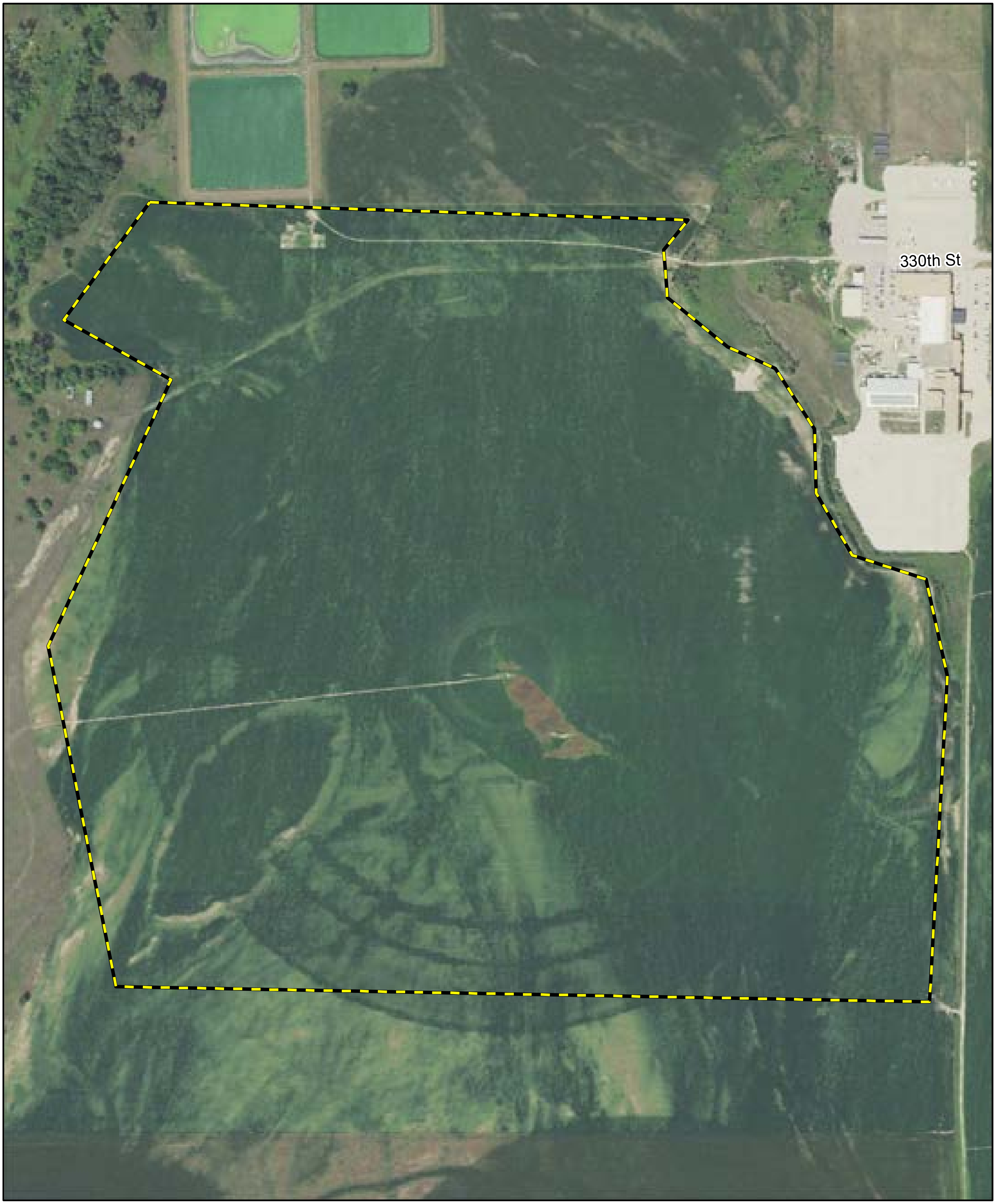
Dry = 1
Normal = 2
Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Dry

Prior to the site visit monthly precipitation observed at the Sioux City AP, IA station was 1.79 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.



N

0 275 550

ft

1 " = 550 '

Study Area

Winnebago Tribe Broadband Connectivity Project
Staging Area F

Woodbury County, Iowa

WETS Map

Aerial Date: August 12, 2021

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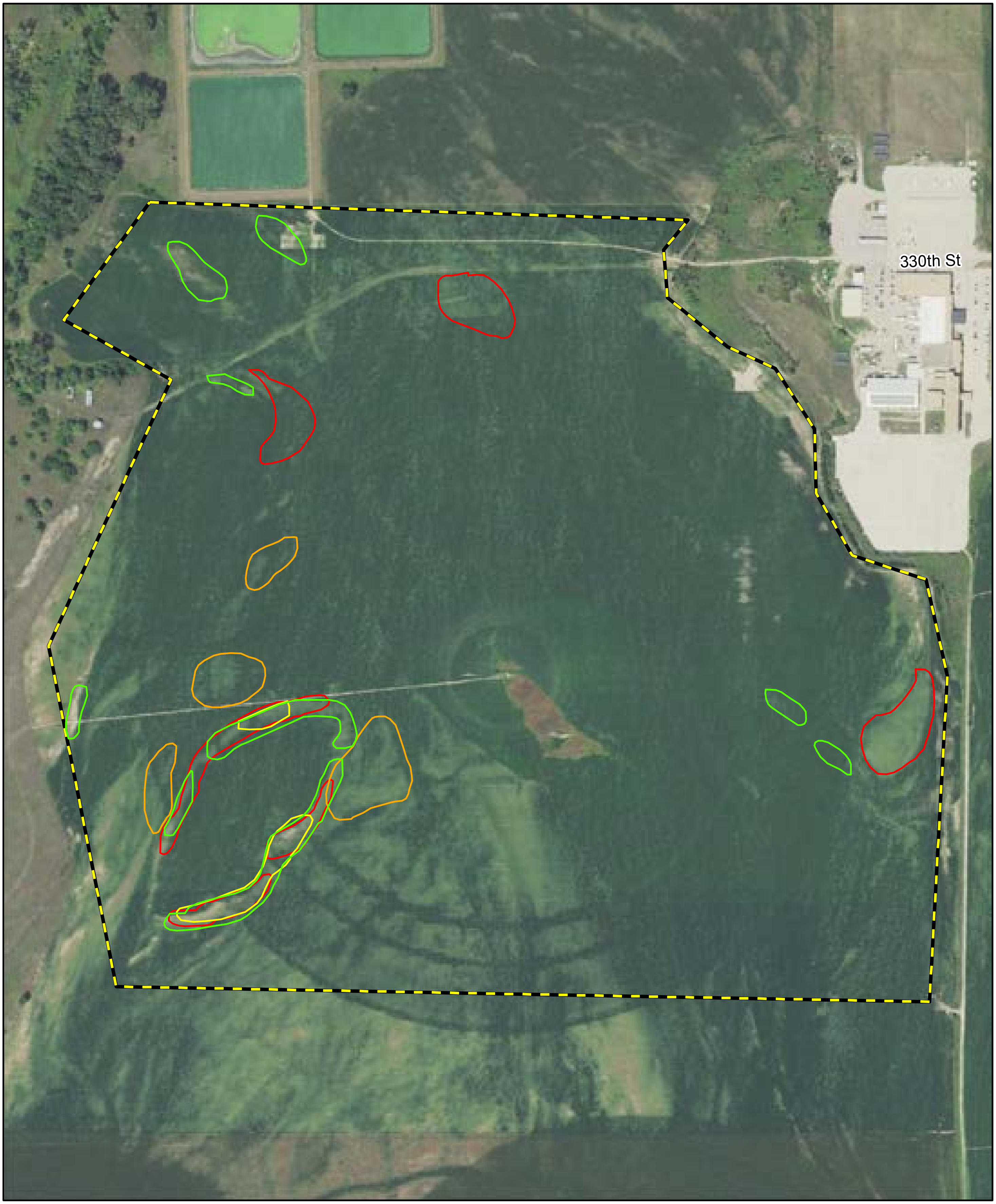
WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery



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N

0 275 550 ft

1 " = 550 '

olsson

Study Area

Year

2004

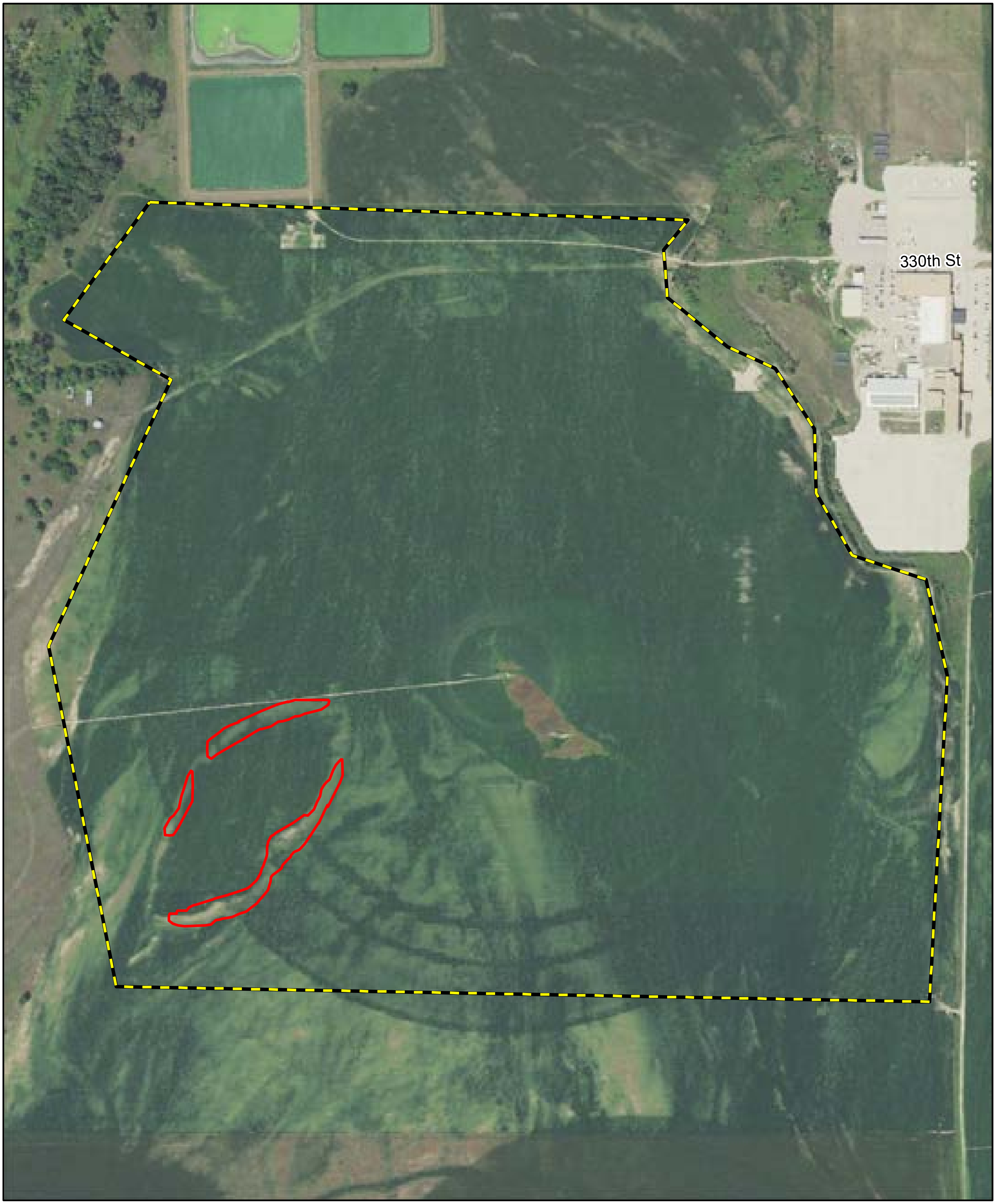
2005

2008

2009

Winnebago Tribe Broadband Connectivity Project
Staging Area F
Woodbury County, Iowa
Combined WETS Map

WGS 1984 ARC System Zone 11 | Olsson Project # 021-05175 | Basemap: Google Satellite



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N

0 275 550 ft

1 " = 550 '

olsson

Study Area

Final WETS

Winnebago Tribe Broadband Connectivity Project
Staging Area F
Woodbury County, Iowa
Final WETS Map

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/14/2023 PREPARED BY: Kari Sherman

WEATHER STATION: Wayne, NE

COUNTY: Wayne STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 8, 2005

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.69	2.79	3.36	2.57	NORMAL	2	3	6
2nd PRIOR MONTH*	June	2.57	4.01	4.83	6.64	WET	3	2	6
3rd PRIOR MONTH*	May	2.82	4.07	4.84	3.67	NORMAL	2	1	2
								SUM =	14

NOTE: If sum is

6 - 9	then prior period has been drier than normal
10 - 14	then prior period has been normal
15 - 18	then prior period has been wetter than normal

CONDITION VALUE:

Dry	= 1
Normal	= 2
Wet	= 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wayne, NE station was 2.67 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N

0 25 50 ft

1 " = 50 '

olsson

Bore Point 101

Bore Point 100ft Buffer

Winnebago Tribe Broadband Connectivity Project

Bore Point 101

Dixon County, Nebraska

WETS Map

Aerial Date: August 8, 2005

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WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/14/2023

PREPARED BY: Kari Sherman

WEATHER STATION: Wayne, NE

COUNTY: Wayne

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 19, 2006

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.57	4.01	4.83	3.02	NORMAL	2	3	6
2nd PRIOR MONTH*	May	2.82	4.07	4.84	1.49	DRY	1	2	2
3rd PRIOR MONTH*	April	1.54	2.80	3.41	2.13	NORMAL	2	1	2
								SUM =	10

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wayne, NE station was 2.67 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N

0 25 50 ft

1 " = 50 '

Bore Point 101

Bore Point 100ft Buffer

Winnebago Tribe Broadband Connectivity Project
Bore Point 101
Dixon County, Nebraska
WETS Map
Aerial Date: July 19, 2006

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/14/2023 PREPARED BY: Kari Sherman

WEATHER STATION: Wayne, NE

COUNTY: Wayne STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 8, 2007

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.57	4.01	4.83	1.54	DRY	1	3	3
2nd PRIOR MONTH*	May	2.82	4.07	4.84	3.37	NORMAL	2	2	4
3rd PRIOR MONTH*	April	1.54	2.80	3.41	6.14	WET	3	1	3
								SUM =	10

NOTE: If sum is

6 - 9	then prior period has been drier than normal	Dry	= 1
10 - 14	then prior period has been normal	Normal	= 2
15 - 18	then prior period has been wetter than normal	Wet	= 3

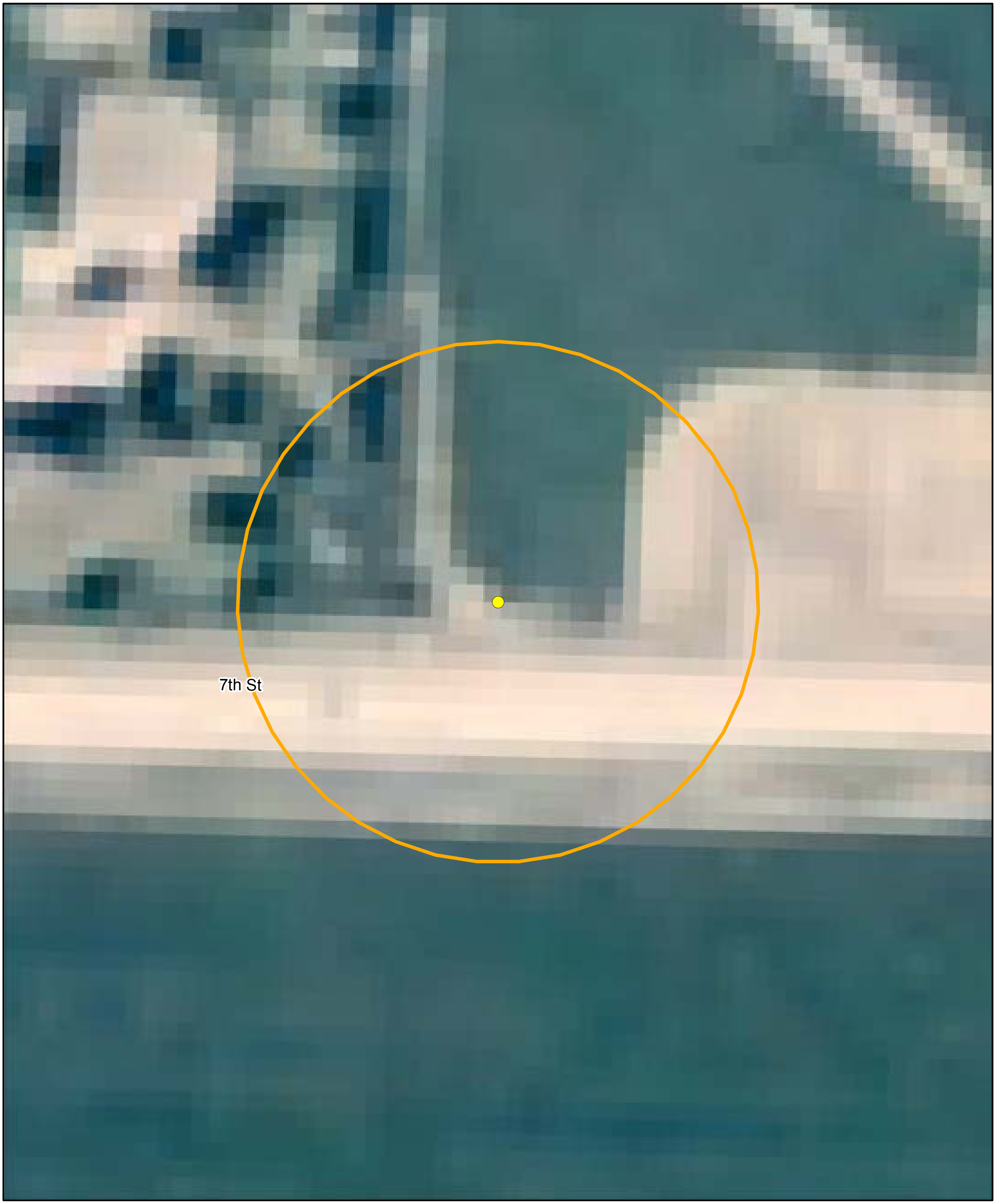
CONDITION VALUE:
Dry = 1
Normal = 2
Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wayne, NE station was 2.67 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.



N

0 25 50 ft

1 " = 50 '

olsson

Bore Point 101

Bore Point 100ft Buffer

Winnebago Tribe Broadband Connectivity Project
Bore Point 101
Dixon County, Nebraska
WETS Map
Aerial Date: July 8, 2007

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/14/2023 PREPARED BY: Kari Sherman

WEATHER STATION: Wayne, NE

COUNTY: Wayne STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 1, 2009

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.57	4.01	4.83	5.54	WET	3	3	9
2nd PRIOR MONTH*	May	2.82	4.07	4.84	0.61	DRY	1	2	2
3rd PRIOR MONTH*	April	1.54	2.80	3.41	1.87	NORMAL	2	1	2
								SUM =	13

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wayne, NE station was 2.67 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N

0 25 50 ft

1 " = 50 '

olsson

Bore Point 101

Bore Point 100ft Buffer

Winnebago Tribe Broadband Connectivity Project
Bore Point 101
Dixon County, Nebraska
WETS Map
Aerial Date: July 1, 2009

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/14/2023

PREPARED BY: Kari Sherman

WEATHER STATION: Wayne, NE

COUNTY: Wayne

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 10, 2010

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.57	4.01	4.83	7.60	WET	3	3	9
2nd PRIOR MONTH*	May	2.82	4.07	4.84	2.12	DRY	1	2	2
3rd PRIOR MONTH*	April	1.54	2.80	3.41	2.24	NORMAL	2	1	2
								SUM =	13

NOTE: If sum is

6 - 9	then prior period has been drier than normal
10 - 14	then prior period has been normal
15 - 18	then prior period has been wetter than normal

CONDITION VALUE:

Dry	= 1
Normal	= 2
Wet	= 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wayne, NE station was 2.67 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N

0 25 50 ft

1 " = 50 '

olsson

Bore Point 101

Bore Point 100ft Buffer

Winnebago Tribe Broadband Connectivity Project
Bore Point 101

Dixon County, Nebraska

WETS Map

Aerial Date: July 10, 2010

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/14/2023 PREPARED BY: Kari Sherman

WEATHER STATION: Wayne, NE

COUNTY: Wayne STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 3, 2012

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.57	4.01	4.83	0.67	DRY	1	3	3
2nd PRIOR MONTH*	May	2.82	4.07	4.84	5.96	WET	3	2	6
3rd PRIOR MONTH*	April	1.54	2.80	3.41	3.09	NORMAL	2	1	2
								SUM =	11

NOTE: If sum is
6 - 9 then prior period has been drier than normal
10 - 14 then prior period has been normal
15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
Dry = 1
Normal = 2
Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wayne, NE station was 2.67 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N

0 25 50 ft

1 " = 50 '

olsson

Bore Point 101

Bore Point 100ft Buffer

Winnebago Tribe Broadband Connectivity Project
Bore Point 101

Dixon County, Nebraska

WETS Map

Aerial Date: July 3, 2012

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/14/2023 PREPARED BY: Kari Sherman

WEATHER STATION: Wayne, NE

COUNTY: Wayne STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: September 7, 2014

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	August	1.75	3.09	3.76	5.53	WET	3	3	9
2nd PRIOR MONTH*	July	1.69	2.79	3.36	3.15	NORMAL	2	2	4
3rd PRIOR MONTH*	June	2.57	4.01	4.83	12.58	WET	3	1	3
								SUM =	16

NOTE: If sum is

6 - 9	then prior period has been drier than normal
10 - 14	then prior period has been normal
15 - 18	then prior period has been wetter than normal

CONDITION VALUE:

Dry	= 1
Normal	= 2
Wet	= 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Wet

Prior to the site visit monthly precipitation observed at the Wayne, NE station was 2.67 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

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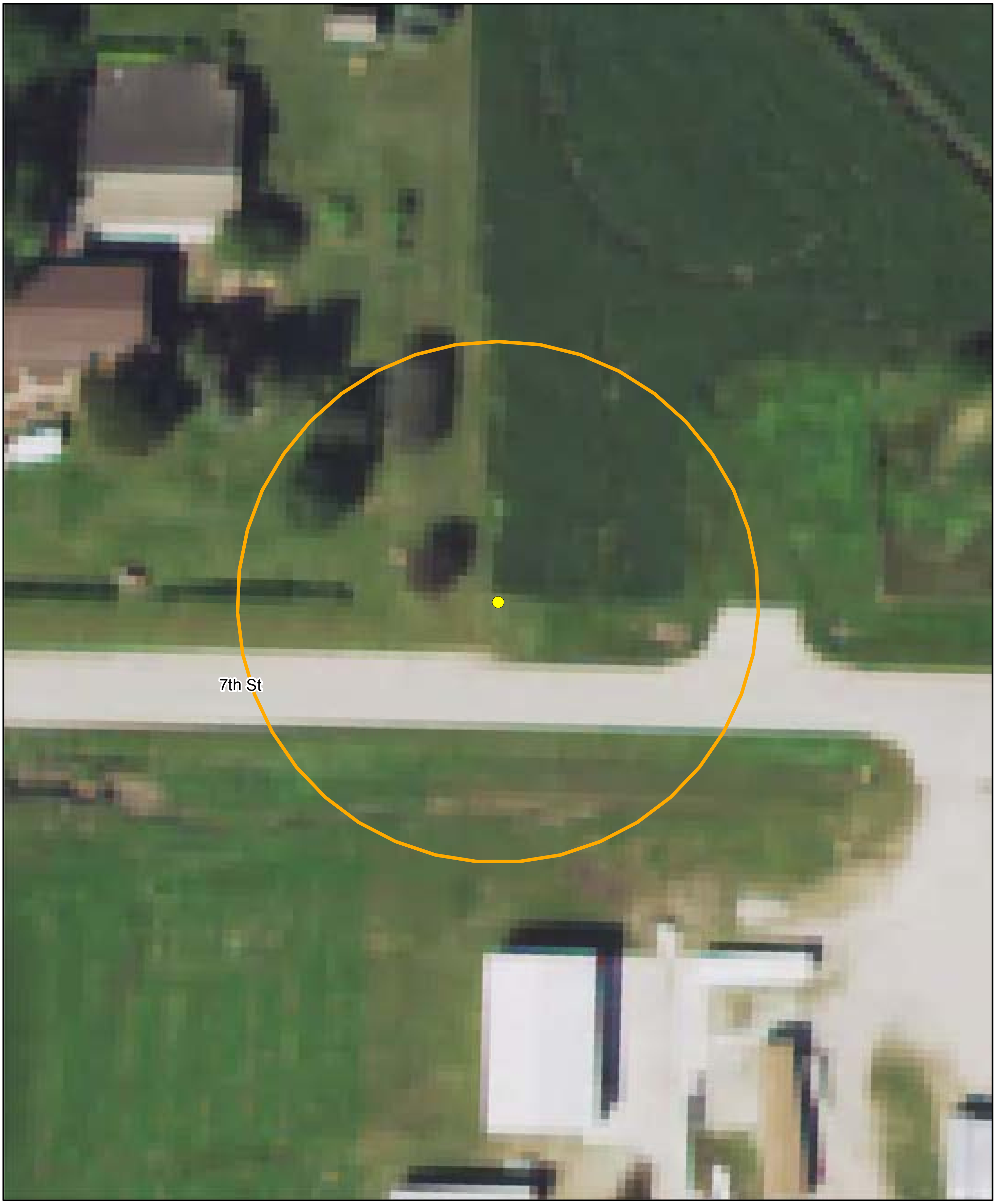

Winnebago Tribe Broadband Connectivity Project
Bore Point 101
Dixon County, Nebraska
WETS Map
Aerial Date: September 7, 2014

WGS 1984 ARC System Zone 11 | Olsson Project # 021-05175 | Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/14/2023

PREPARED BY: Kari Sherman

WEATHER STATION: Wayne, NE

COUNTY: Wayne

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 14, 2016

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.69	2.79	3.36	1.62	DRY	1	3	3
2nd PRIOR MONTH*	June	2.57	4.01	4.83	3.08	NORMAL	2	2	4
3rd PRIOR MONTH*	May	2.82	4.07	4.84	4.35	NORMAL	2	1	2
								SUM =	9

NOTE: If sum is

6 - 9	then prior period has been drier than normal
10 - 14	then prior period has been normal
15 - 18	then prior period has been wetter than normal

CONDITION VALUE:

Dry	= 1
Normal	= 2
Wet	= 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Dry

Prior to the site visit monthly precipitation observed at the Wayne, NE station was 2.67 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N
0 25 50
ft
1 " = 50 '

olsson

Bore Point 101
Bore Point 100ft Buffer

Winnebago Tribe Broadband Connectivity Project
Bore Point 101
Dixon County, Nebraska
WETS Map
Aerial Date: August 14, 2016

WGS 1984 ARC System Zone 11
Olsson Project # 021-05175
Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/14/2023

PREPARED BY: Kari Sherman

WEATHER STATION: Wayne, NE

COUNTY: Wayne

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 15, 2020

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.69	2.79	3.36	4.07	WET	3	3	9
2nd PRIOR MONTH*	June	2.57	4.01	4.83	1.60	DRY	1	2	2
3rd PRIOR MONTH*	May	2.82	4.07	4.84	3.81	NORMAL	2	1	2
								SUM =	13

NOTE: If sum is
6 - 9 then prior period has been drier than normal
10 - 14 then prior period has been normal
15 - 18 then prior period has been wetter than normal

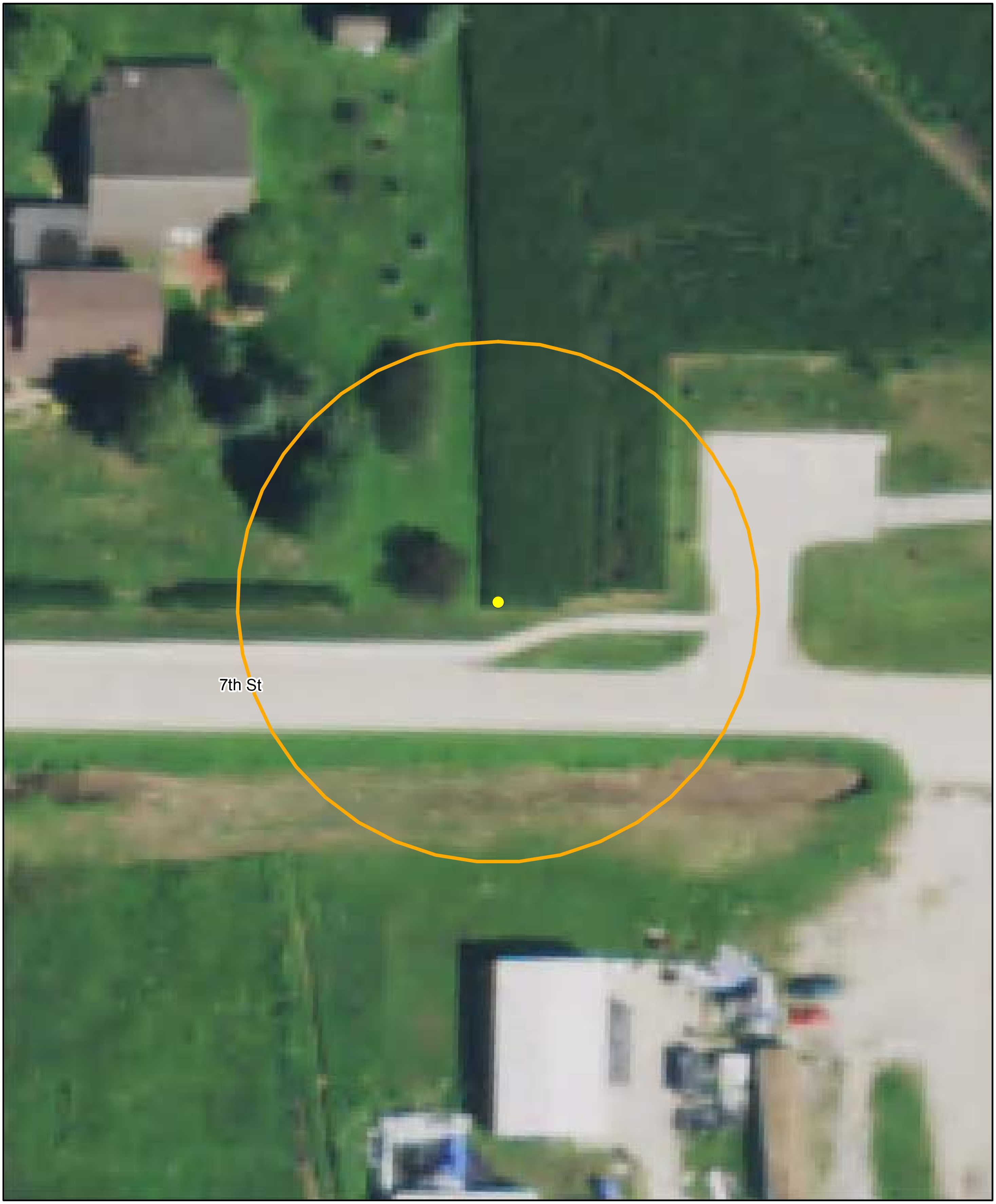
CONDITION VALUE:
Dry = 1
Normal = 2
Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wayne, NE station was 2.67 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.



N

0 25 50 ft

1 " = 50 '

olsson

Bore Point 101

Bore Point 100ft Buffer

Winnebago Tribe Broadband Connectivity Project
Bore Point 101
Dixon County, Nebraska
WETS Map
Aerial Date: August 15, 2020

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WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/14/2023 PREPARED BY: Kari Sherman

WEATHER STATION: Wayne, NE

COUNTY: Wayne STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 9, 2022

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.69	2.79	3.36	1.05	DRY	1	3	3
2nd PRIOR MONTH*	June	2.57	4.01	4.83	1.75	DRY	1	2	2
3rd PRIOR MONTH*	May	2.82	4.07	4.84	4.55	NORMAL	2	1	2
								SUM =	7

NOTE: If sum is
6 - 9 then prior period has been drier than normal
10 - 14 then prior period has been normal
15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
Dry = 1
Normal = 2
Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Dry

Prior to the site visit monthly precipitation observed at the Wayne, NE station was 2.67 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

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N

0 25 50 ft

1 " = 50 '

Bore Point 101

Bore Point 100ft Buffer

Winnebago Tribe Broadband Connectivity Project
Bore Point 101
Dixon County, Nebraska
WETS Map
Aerial Date: August 9, 2022

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

N

0 25 50 ft

1 " = 50 '

olsson

Bore Point 101

Bore Point 100ft Buffer

Winnebago Tribe Broadband Connectivity Project
Bore Point 101
Dixon County, Nebraska
Combined WETS Map

WGS 1984 ARC System Zone 11 | Olsson Project # 021-05175 | Basemap: Google Satellite

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ft

1 " = 50 '

Bore Point 101

Bore Point 100ft Buffer

Winnebago Tribe Broadband Connectivity Project
Bore Point 101
Dixon County, Nebraska
Final WETS Map

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WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/14/2023

PREPARED BY: Kari Sherman

WEATHER STATION: Wayne, NE

COUNTY: Wayne

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 8, 2005

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.69	2.79	3.36	2.57	NORMAL	2	3	6
2nd PRIOR MONTH*	June	2.57	4.01	4.83	6.64	WET	3	2	6
3rd PRIOR MONTH*	May	2.82	4.07	4.84	3.67	NORMAL	2	1	2
								SUM =	14

NOTE: If sum is
6 - 9 then prior period has been drier than normal
10 - 14 then prior period has been normal
15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
Dry = 1
Normal = 2
Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wayne, NE station was 2.67 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N

0 25 50

ft

1 " = 50 '

Bore Point 102

Bore Point 100ft Buffer

Winnebago Tribe Broadband Connectivity Project
Bore Point 102

Dixon County, Nebraska

WETS Map

Aerial Date: August 8, 2005

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/14/2023

PREPARED BY: Kari Sherman

WEATHER STATION: Wayne, NE

COUNTY: Wayne

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 19, 2006

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.57	4.01	4.83	3.02	NORMAL	2	3	6
2nd PRIOR MONTH*	May	2.82	4.07	4.84	1.49	DRY	1	2	2
3rd PRIOR MONTH*	April	1.54	2.80	3.41	2.13	NORMAL	2	1	2
								SUM =	10

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wayne, NE station was 2.67 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N

0 25 50 ft

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olsson

Bore Point 102

Bore Point 100ft Buffer

Winnebago Tribe Broadband Connectivity Project

Bore Point 102

Dixon County, Nebraska

WETS Map

Aerial Date: July 19, 2006

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/14/2023

PREPARED BY: Kari Sherman

WEATHER STATION: Wayne, NE

COUNTY: Wayne

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 8, 2007

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.57	4.01	4.83	1.54	DRY	1	3	3
2nd PRIOR MONTH*	May	2.82	4.07	4.84	3.37	NORMAL	2	2	4
3rd PRIOR MONTH*	April	1.54	2.80	3.41	6.14	WET	3	1	3
								SUM =	10

NOTE: If sum is

6 - 9	then prior period has been drier than normal
10 - 14	then prior period has been normal
15 - 18	then prior period has been wetter than normal

CONDITION VALUE:

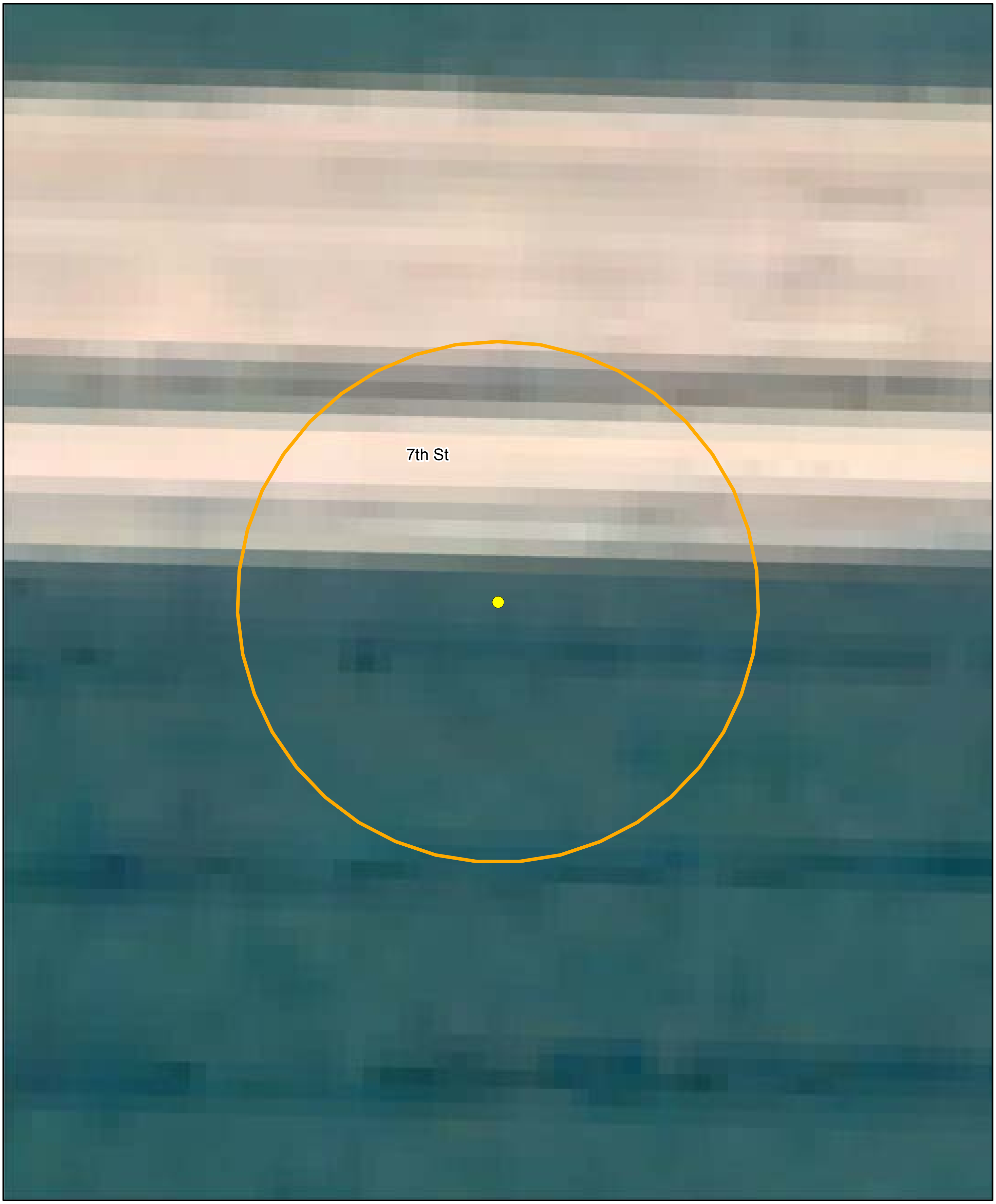
Dry	= 1
Normal	= 2
Wet	= 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wayne, NE station was 2.67 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.



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0 25 50 ft

1 " = 50 '

Bore Point 102

Bore Point 100ft Buffer

Winnebago Tribe Broadband Connectivity Project
Bore Point 102
Dixon County, Nebraska
WETS Map
Aerial Date: July 8, 2007

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/14/2023

PREPARED BY: Kari Sherman

WEATHER STATION: Wayne, NE

COUNTY: Wayne

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 1, 2009

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.57	4.01	4.83	5.54	WET	3	3	9
2nd PRIOR MONTH*	May	2.82	4.07	4.84	0.61	DRY	1	2	2
3rd PRIOR MONTH*	April	1.54	2.80	3.41	1.87	NORMAL	2	1	2
								SUM =	13

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wayne, NE station was 2.67 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N

0 25 50 ft

1 " = 50 '

Bore Point 102

Bore Point 100ft Buffer

Winnebago Tribe Broadband Connectivity Project
Bore Point 102
Dixon County, Nebraska

WETS Map
Aerial Date: July 1, 2009

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/14/2023 PREPARED BY: Kari Sherman

WEATHER STATION: Wayne, NE

COUNTY: Wayne STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 12, 2010

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.57	4.01	4.83	7.60	WET	3	3	9
2nd PRIOR MONTH*	May	2.82	4.07	4.84	2.12	DRY	1	2	2
3rd PRIOR MONTH*	April	1.54	2.80	3.41	2.24	NORMAL	2	1	2
								SUM =	13

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wayne, NE station was 2.67 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

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0 25 50 ft

1 " = 50 '

olsson

Bore Point 102

Bore Point 100ft Buffer

Winnebago Tribe Broadband Connectivity Project
Bore Point 102
Dixon County, Nebraska
WETS Map
Aerial Date: July 12, 2010

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/14/2023

PREPARED BY: Kari Sherman

WEATHER STATION: Wayne, NE

COUNTY: Wayne

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: July 3, 2012

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	June	2.57	4.01	4.83	0.67	DRY	1	3	3
2nd PRIOR MONTH*	May	2.82	4.07	4.84	5.96	WET	3	2	6
3rd PRIOR MONTH*	April	1.54	2.80	3.41	3.09	NORMAL	2	1	2
								SUM =	11

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wayne, NE station was 2.67 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

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N

0 25 50 ft

1 " = 50 '

olsson

Bore Point 102

Bore Point 100ft Buffer

Winnebago Tribe Broadband Connectivity Project
Bore Point 102

Dixon County, Nebraska

WETS Map

Aerial Date: July 3, 2012

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/14/2023

PREPARED BY: Kari Sherman

WEATHER STATION: Wayne, NE

COUNTY: Wayne

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: September 7, 2014

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	August	1.75	3.09	3.76	5.53	WET	3	3	9
2nd PRIOR MONTH*	July	1.69	2.79	3.36	3.15	NORMAL	2	2	4
3rd PRIOR MONTH*	June	2.57	4.01	4.83	12.58	WET	3	1	3
								SUM =	16

NOTE: If sum is

6 - 9	then prior period has been drier than normal
10 - 14	then prior period has been normal
15 - 18	then prior period has been wetter than normal

CONDITION VALUE:

Dry	= 1
Normal	= 2
Wet	= 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Wet

Prior to the site visit monthly precipitation observed at the Wayne, NE station was 2.67 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N

0 25 50 ft

1 " = 50 '

olsson

Bore Point 102

Bore Point 100ft Buffer

Winnebago Tribe Broadband Connectivity Project

Bore Point 102

Dixon County, Nebraska

WETS Map

Aerial Date: September 7, 2014

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/14/2023

PREPARED BY: Kari Sherman

WEATHER STATION: Wayne, NE

COUNTY: Wayne

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 14, 2016

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.69	2.79	3.36	1.62	DRY	1	3	3
2nd PRIOR MONTH*	June	2.57	4.01	4.83	3.08	NORMAL	2	2	4
3rd PRIOR MONTH*	May	2.82	4.07	4.84	4.35	NORMAL	2	1	2
								SUM =	9

NOTE: If sum is

6 - 9	then prior period has been drier than normal
10 - 14	then prior period has been normal
15 - 18	then prior period has been wetter than normal

CONDITION VALUE:

Dry	= 1
Normal	= 2
Wet	= 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Dry

Prior to the site visit monthly precipitation observed at the Wayne, NE station was 2.67 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

N
0 25 50
ft
1 " = 50 '

olsson

Bore Point 102
Bore Point 100ft Buffer

Winnebago Tribe Broadband Connectivity Project
Bore Point 102
Dixon County, Nebraska
WETS Map
Aerial Date: August 14, 2016

WGS 1984 ARC System Zone 11
Olsson Project # 021-05175
Basemap: NAIP Aerial Imagery

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RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/14/2023 PREPARED BY: Kari Sherman

WEATHER STATION: Wayne, NE

COUNTY: Wayne STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report) GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 15, 2020

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.69	2.79	3.36	4.07	WET	3	3	9
2nd PRIOR MONTH*	June	2.57	4.01	4.83	1.60	DRY	1	2	2
3rd PRIOR MONTH*	May	2.82	4.07	4.84	3.81	NORMAL	2	1	2
								SUM =	13

NOTE: If sum is
6 - 9 then prior period has been drier than normal
10 - 14 then prior period has been normal
15 - 18 then prior period has been wetter than normal

CONDITION VALUE:
Dry = 1
Normal = 2
Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Normal

Prior to the site visit monthly precipitation observed at the Wayne, NE station was 2.67 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.

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N

0 25 50 ft

1 " = 50 '

olsson

Bore Point 102

Bore Point 100ft Buffer

Winnebago Tribe Broadband Connectivity Project
Bore Point 102

Dixon County, Nebraska

WETS Map

Aerial Date: August 15, 2020

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery

RAINFALL DOCUMENTATION
USE WITH PHOTOGRAPHS

DATE: 7/14/2023

PREPARED BY: Kari Sherman

WEATHER STATION: Wayne, NE

COUNTY: Wayne

STATE: Nebraska

SOIL NAME: Multiple (See Delineation Report)

GROWING SEASON: May 1 - October 31

SITE VISIT DATE: Aerial Taken: August 9, 2022

		LONG TERM RAINFALL RECORDS							
	MONTH	3 YRS IN 10 LESS THAN	AVERAGE	3 YRS IN 10 MORE THAN	RAIN FALL	CONDITION WET, DRY, NORMAL	CONDITION VALUE	MONTH WEIGHT VALUE	PRODUCT OF PREVIOUS TWO COLUMNS
1st PRIOR MONTH*	July	1.69	2.79	3.36	1.05	DRY	1	3	3
2nd PRIOR MONTH*	June	2.57	4.01	4.83	1.75	DRY	1	2	2
3rd PRIOR MONTH*	May	2.82	4.07	4.84	4.55	NORMAL	2	1	2
								SUM =	7

NOTE: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

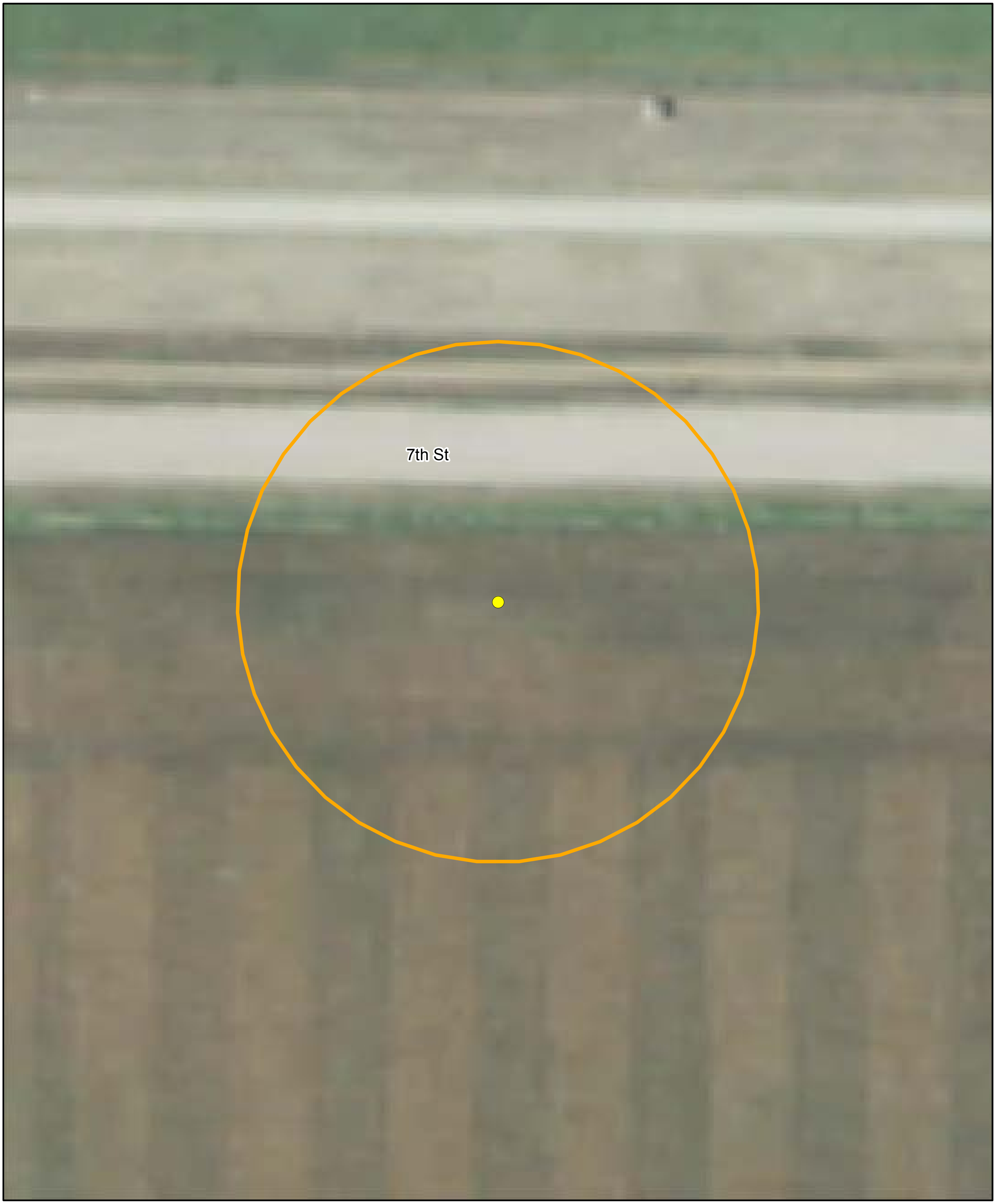
CONDITION VALUE:
- Dry = 1
- Normal = 2
- Wet = 3

*Photo Date

CONCLUSIONS:

At the time of the site visit, hydrologic conditions for the prior period were Dry

Prior to the site visit monthly precipitation observed at the Wayne, NE station was 2.67 inches, which would be considered light compared to the monthly average. These data indicate that hydrology indicators observed during the site visit were not reliable indicators.



N

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ft

1 " = 50 '

olsson

Bore Point 102

Bore Point 100ft Buffer

Winnebago Tribe Broadband Connectivity Project
Bore Point 102
Dixon County, Nebraska
WETS Map
Aerial Date: August 9, 2022

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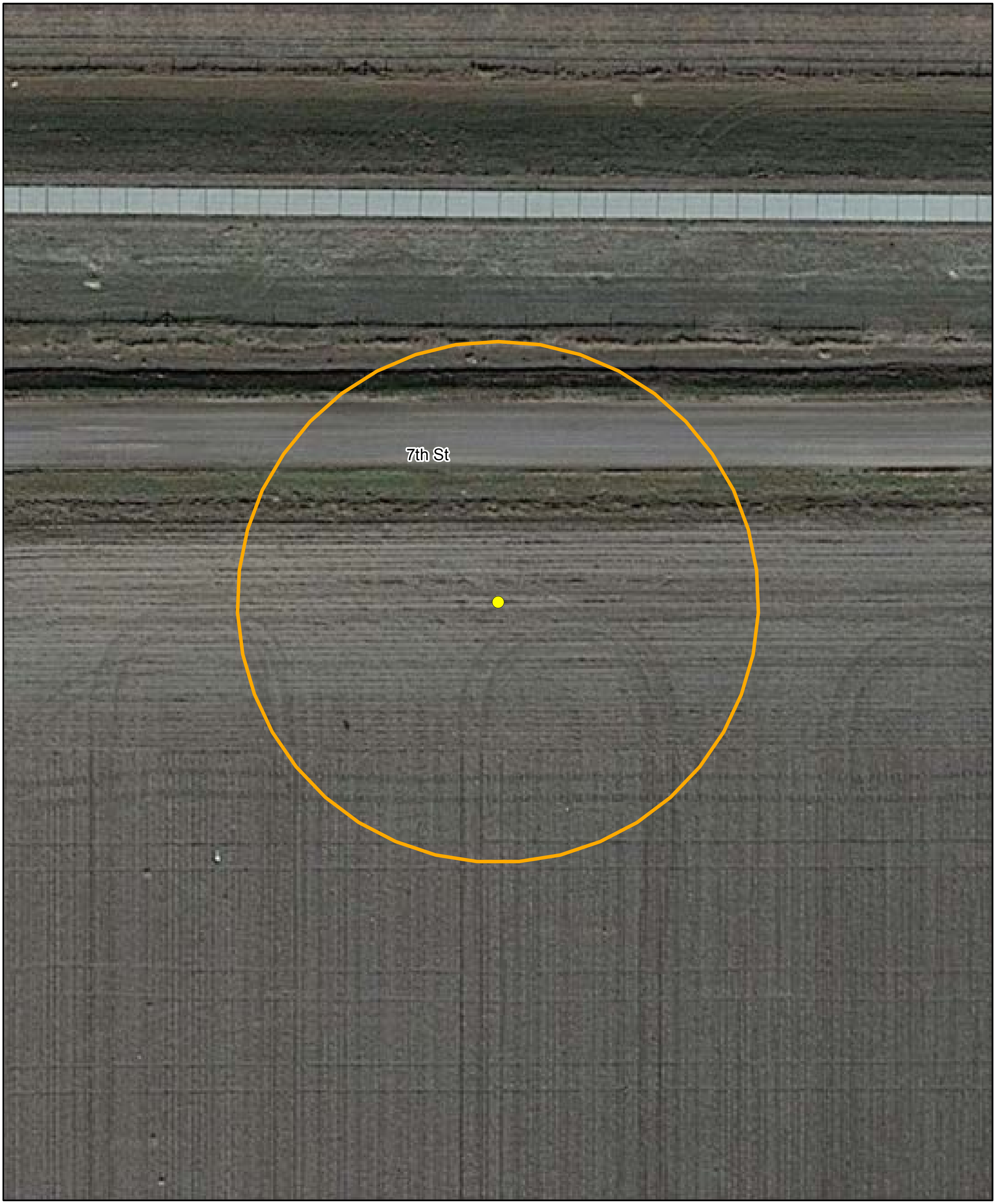
WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: NAIP Aerial Imagery



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ft
1 " = 50 '

olsson

Bore Point 102
Bore Point 100ft Buffer

Winnebago Tribe Broadband Connectivity Project
Bore Point 102
Dixon County, Nebraska
Combined WETS Map

WGS 1984 ARC System Zone 11

Olsson Project # 021-05175

Basemap: Google Satellite

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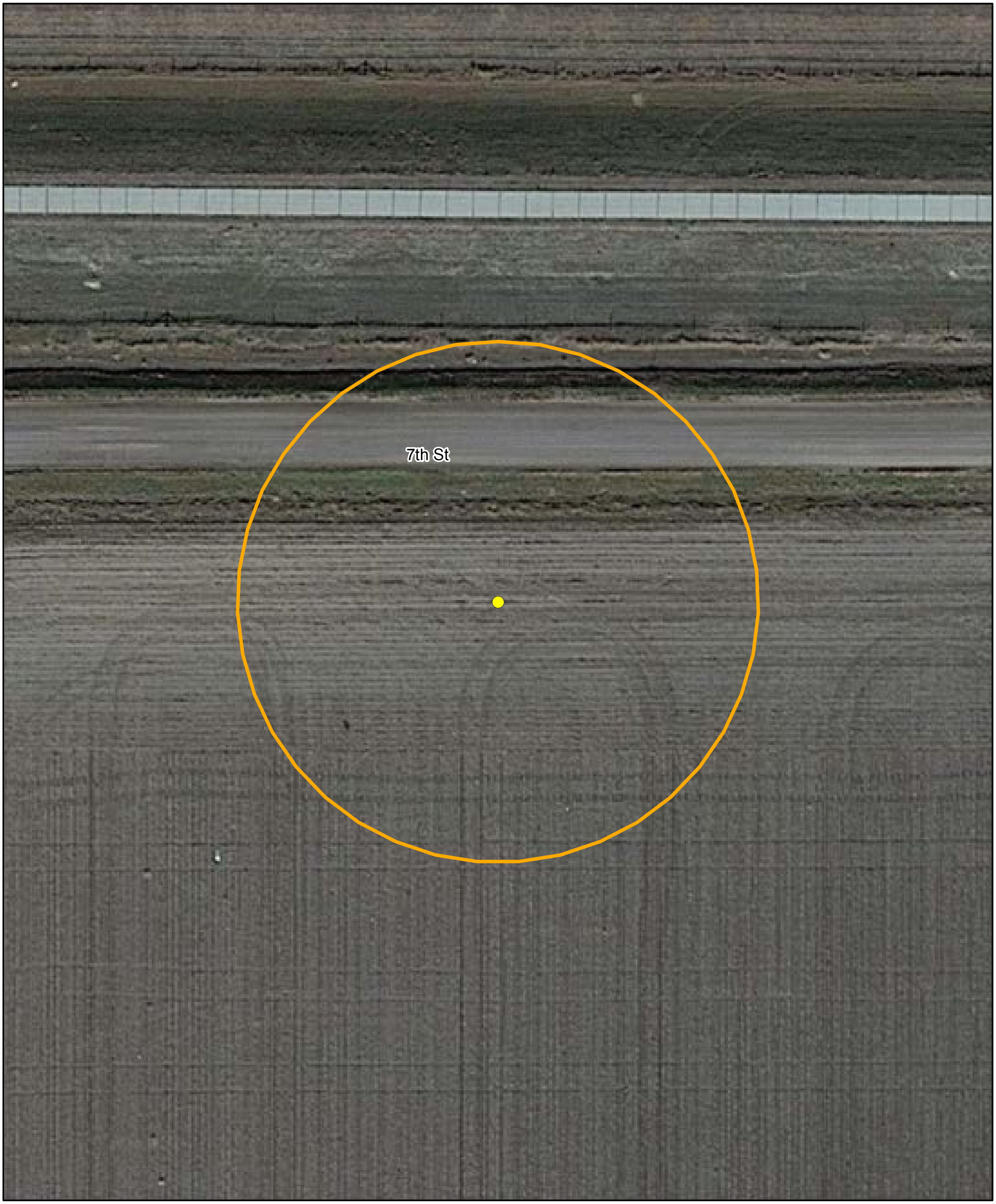


N
0 25 50 ft
1 " = 50 '

olsson

Bore Point 102
Bore Point 100ft Buffer

Winnebago Tribe Broadband Connectivity Project
Bore Point 102
Dixon County, Nebraska
Final WETS Map

WGS 1984 ARC System Zone 11
Olsson Project # 021-05175
Basemap: Google Satellite

APPENDIX C

Wetland Determination Data Forms

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Thurston** Sampling Date: **7/11/2023**

Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **1**

Investigator(s): **C. Booth, K. Sherman (Olsson)** Section, Township, Range: **S15 T26N R6E**

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

Slope (%): **0-2** Lat: **42.232194** Long: **-96.707792** Datum: **NAD83**

Soil Map Unit Name: **7716—McPaul silt loam, occasionally flooded** NWI classification: **Riverine**

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

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

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.

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

Remarks:
Sample Point (SP) 1 is an upland area in a pasture in Staging Area A. The National Wetlands Inventory (NWI) and National Hydrography Dataset (NHD) depict this area as a riverine and stream channel, respectively. The area lacks all three wetland indicators, a defined bed and bank, and ordinary high-water mark (OHWM) and is not a wetland or stream channel.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5')			
1. *Bromus inermis*	100	X	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	100		
Woody Vine Stratum (Plot size: 30')			
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	(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.)
Photo Point (PP) 1

SOIL

Sampling Point: 1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 3/1	100					Loam	Dry
7-30	10YR 3/3	100					Loam	

[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)
__ 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)
__ Dark Surface (S7)
__ Iron-Manganese Masses (F12)
__ Very Shallow Dark Surface (TF12)
__ 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:

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:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Thurston** Sampling Date: **7/11/2023**

Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **2**

Investigator(s): **C. Booth, K. Sherman (Olsson)** Section, Township, Range: **S15 T26N R6E**

Landform (hillslope, terrace, etc.): **Depression** Local relief (concave, convex, none): **Concave**

Slope (%): **2-3** Lat: **42.233521** Long: **-96.707037** Datum: **NAD83**

Soil Map Unit Name: **7788—Luton silty clay loam, rarely flooded** NWI classification: **Riverine**

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

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

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.

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

Remarks:
SP 2 is an upland area in an agricultural pasture that slopes north in Staging Area A. The NWI and NHD depict this area as a riverine and stream channel, respectively; however, the area lacks a defined bed and bank and OHWM and is not a stream channel. Although hydric soil is present, the area lacks dominant hydrophytic vegetation and sufficient wetland hydrology and is upland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5')			
1. *Bromus inermis*	55	X	FACU
2. *Cyperus esculentus*	20	X	FACW
3. *Phalaris arundinacea*	10		FACW
4. *Thinopyrum intermedium*	5		UPL
5. *Poa pratensis*	5		FAC
6. *Taraxacum officinale*	5		FACU
7.			
8.			
9.			
10.			
= Total Cover	100		
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
= 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	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	5	x 3 =	15
FACU species	60	x 4 =	240
UPL species	5	x 5 =	25
Column Totals:	100 (A)		340 (B)

Prevalence Index = B/A = 3.40

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.)
PP 2

SOIL

Sampling Point: 2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-30	10YR 3/1	85	7.5YR 4/6	15	C	M	Clay Loam	

[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)
- _ 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)
- _ Dark Surface (S7)
- _ Iron-Manganese Masses (F12)
- _ Very Shallow Dark Surface (TF12)
- _ 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:

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:

	Yes	No	Depth (inches)
Surface Water Present?		X	
Water Table Present?		X	
Saturation Present? (includes capillary fringe)		X	

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Thurston** Sampling Date: **7/11/2023**

Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **3**

Investigator(s): **C. Booth, K. Sherman (Olsson)** Section, Township, Range: **S15 T26N R6E**

Landform (hillslope, terrace, etc.): **Depression** Local relief (concave, convex, none): **Concave**

Slope (%): **2-3** Lat: **42.233588** Long: **-96.708003** Datum: **NAD83**

Soil Map Unit Name: **7788—Luton silty clay loam, rarely flooded** NWI classification: **None**

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

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

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.

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

Remarks:
SP 3 is an upland area located in an agricultural pasture in Staging Area A. This area was identified during the Climates Analysis for Wetlands Tables (WETS Tables) analysis as a potential wetland. Although this area contains hydric soil, it lacks dominant hydrophytic vegetation and sufficient wetland hydrology and is upland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5')			
1. *Bromus inermis*	45	X	FACU
2. *Thinopyrum intermedium*	20	X	UPL
3. *Cyperus esculentus*	15		FACW
4. *Phalaris arundinacea*	10		FACW
5. *Mentha arvensis*	10		FACW
6.			
7.			
8.			
9.			
10.			
= Total Cover	100		
Woody Vine Stratum (Plot size: 30')			
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:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(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.)
PP 3

SOIL

Sampling Point: 3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 3/1	75	7.5YR 5/8	25	C	M	Clay	
20-30	10YR 3/1	80	7.5YR 5/8	10	C	M	Clay	
			2.5YR 8/6	10	C	M	Clay	

[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)
- ___ 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)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

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:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Thurston** Sampling Date: **7/11/2023**

Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **4**

Investigator(s): **C. Booth, K. Sherman (Olsson)** Section, Township, Range: **S15 T26N R6E**

Landform (hillslope, terrace, etc.): **Bank/Shelf** Local relief (concave, convex, none): **Concave**

Slope (%): **5-6** Lat: **42.233843** Long: **-96.707449** Datum: **NAD83**

Soil Map Unit Name: **7788—Luton silty clay loam, rarely flooded** NWI classification: **Riverine**

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

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

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 X	No ___
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes X	No ___

Is the Sampled Area within a Wetland? **Yes** X **No** ___

Remarks:
Wetland 4 is a Palustrine Emergent Temporarily Flooded/Seasonally Flooded (PEMA/C) wetland fringe along the southern bank of Channel 4, an intermittent channel, within Staging Area A. Channel 4 is approximately two feet wide at the OHWM and flows west to east across Staging Area A. This area was identified during the WETS Tables analysis as a potential wetland. The NWI and NHD depict this area as a riverine and stream channel, respectively.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix amygdaloides*	5	X	FACW
2.			
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Thinopyrum intermedium*	35	X	UPL
2. *Phalaris arundinacea*	20	X	FACW
3. *Spartina pectinata*	20	X	FACW
4. *Bromus inermis*	10		FACU
5. *Rumex altissimus*	10		FACW
6. *Rumex crispus*	5		FAC
7.			
8.			
9.			
10.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
		= 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:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	75	(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
- X 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** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
PP 4a and 4b

SOIL

Sampling Point: 4

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 3/1	98	7.5YR 4/6	2	C	M	Clay Loam	
9-22	10YR 3/1	95	7.5YR 4/6	5	C	M	Clay Loam	

[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)
- ___ 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)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

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)
- X 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)	___

Wetland Hydrology Present? Yes X **No** ___

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

Remarks:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Thurston** Sampling Date: **7/11/2023**
Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **5**
Investigator(s): **C. Booth, K. Sherman (Olsson)** Section, Township, Range: **S15 T26N R6E**
Landform (hillslope, terrace, etc.): **Shelf** Local relief (concave, convex, none): **Convex**
Slope (%): **1-2** Lat: **42.233886** Long: **-96.707545** Datum: **NAD83**
Soil Map Unit Name: **7788—Luton silty clay loam, rarely flooded** NWI classification: **None**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
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.

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

Remarks:
SP 5 is an upland outpoint for Wetland 4 (PEMA/C) in Staging Area A. This area was identified during the WETS Tables analysis as a potential wetland; however, the area lacks all three wetland indicators.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5')			
1. *Bromus inermis*	80	X	FACU
2. *Phalaris arundinacea*	10		FACW
3. *Asclepias syriaca*	10		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	100		
Woody Vine Stratum (Plot size: 30')			
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	(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.)
PP 5

SOIL

Sampling Point: 5

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/1	100					Clay Loam	
10-22	10YR 3/1	98	7.5YR 4/6	2	C	M	Clay Loam	

[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)
- __ 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)
- __ Dark Surface (S7)
- __ Iron-Manganese Masses (F12)
- __ Very Shallow Dark Surface (TF12)
- __ 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:

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:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Thurston** Sampling Date: **7/11/2023**

Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **6**

Investigator(s): **C. Booth, K. Sherman (Olsson)** Section, Township, Range: **S15 T26N R6E**

Landform (hillslope, terrace, etc.): **Bank/Shelf** Local relief (concave, convex, none): **Concave**

Slope (%): **2-3** Lat: **42.233911** Long: **-96.707454** Datum: **NAD83**

Soil Map Unit Name: **7788—Luton silty clay loam, rarely flooded** NWI classification: **Riverine**

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

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

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 X No ___	**Is the Sampled Area within a Wetland?**	**Yes** X **No** ___
Hydric Soil Present?	Yes X No ___		
Wetland Hydrology Present?	Yes X No ___		

Remarks:
Wetland 6 is a PEMA/C wetland fringe along the southern bank of Channel 4, an intermittent channel, within Staging Area A. Channel 4 is approximately two feet wide at the OHWM and flows west and east across Staging Area A. This area was identified during the WETS Tables analysis as a potential wetland. The NWI and NHD depict this area as a riverine and stream channel, respectively.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Phalaris arundinacea*	65	X	FACW
2. *Spartina pectinata*	20	X	FACW
3. *Thinopyrum intermedium*	10		UPL
4. *Bromus inermis*	5		FACU
5.			
6.			
7.			
8.			
9.			
10.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
		= 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	(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
- X 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** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
PP 6

SOIL

Sampling Point: 6

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1	100					Silty Clay	
4-22	10YR 2/1	80	7.5YR 5/8	20	C	M	Silty Clay	

[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)
- __ 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)
- __ Dark Surface (S7)
- __ Iron-Manganese Masses (F12)
- __ Very Shallow Dark Surface (TF12)
- __ 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:

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):

Wetland Hydrology Present? Yes X **No**

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

Remarks:

Wetland Determination Data Form - Midwest Region

Project/Site:	Winnebago Tribe Broadband Connectivity Project	City/County:	Thurston	Sampling Date:	7/11/2023
Applicant/Owner:	Winnebago Tribe of Nebraska	State:	NE	Sampling Point:	7
Investigator(s):	C. Booth, K. Sherman (Olsson)			Section, Township, Range:	S15 T26N R6E
Landform (hillslope, terrace, etc.):	Field	Local relief (concave, convex, none):	None		
Slope (%): 0	Lat: 42.233954	Long:	-96.707348	Datum:	NAD83
Soil Map Unit Name:	3518—Lamo silty clay loam, 0 to 2 percent slopes, occasionally flooded			NWI classification:	None

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

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

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.

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

Remarks:
SP 7 is an upland outpoint for Wetland 6 (PEMA/C) within a grassy field abutting the northern edge of the wetland in Staging Area A.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Bromus inermis*	90	X	FACU
2. *Thinopyrum intermedium*	10		UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
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	(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.)
PP 7

SOIL

Sampling Point: 7

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-22	10YR 3/2	100					Silty Clay	

[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)
- ___ 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)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

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:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Thurston** Sampling Date: **7/11/2023**

Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **8**

Investigator(s): **C. Booth, K. Sherman (Olsson)** Section, Township, Range: **S15 T26N R6E**

Landform (hillslope, terrace, etc.): **Field** Local relief (concave, convex, none): **Concave**

Slope (%): **2-3** Lat: **42.234352** Long: **-96.711639** Datum: **NAD83**

Soil Map Unit Name: **3518—Lamo silty clay loam, 0 to 2 percent slopes, occasionally flooded** NWI classification: **None**

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

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

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
Hydric Soil Present?	Yes ___	No X
Wetland Hydrology Present?	Yes ___	No X

Is the Sampled Area within a Wetland? **Yes** ___ **No** X

Remarks:
SP 8 documents an upland area located within a depression along the western edge of Staging Area A.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Phalaris arundinacea*	60	X	FACW
2. *Thinopyrum intermedium*	30	X	UPL
3. *Bromus inermis*	10		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
		= 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	0	x 3 =	0
FACU species	10	x 4 =	40
UPL species	30	x 5 =	150
Column Totals:	100 (A)		310 (B)

Prevalence Index = B/A = 3.10

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.)
PP 8

SOIL

Sampling Point: 8

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/1	100					Silty Loam	
16-28	10YR 3/1	99	7.5YR 4/6	1	C	M	Silty Loam	

[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)
- ___ 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)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

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:

	Yes	No	Depth (inches)
Surface Water Present?		X	
Water Table Present?		X	
Saturation Present? (includes capillary fringe)		X	

Wetland Hydrology Present? Yes ______ **No** X

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

Remarks:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Thurston** Sampling Date: **7/11/2023**

Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **9**

Investigator(s): **C. Booth, K. Sherman (Olsson)** Section, Township, Range: **S35 T27N R8E**

Landform (hillslope, terrace, etc.): **Slope** Local relief (concave, convex, none): **Convex**

Slope (%): **2-3** Lat: **42.263578** Long: **-96,483,274** Datum: **NAD83**

Soil Map Unit Name: **7053—Kennebec silt loam, 0 to 3 percent slopes, occasionally flooded, overwash** NWI classification: **None**

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

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

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.

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

Remarks:
SP 9 is an upland area along the southern boundary of Staging Area B. This area is depicted by the NHD as a stream channel; however, this area lacks a defined bed and bank and OHWM and is not a stream channel. Although the area contains hydric soil, the area lacks dominant hydrophytic vegetation and sufficient wetland hydrology and is upland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Abutilon theophrasti*	10	X	FACU
2. *Bromus inermis*	5	X	FACU
3. *Cirsium arvense*	5	X	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (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.)
PP 9

SOIL

Sampling Point: 9

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1	100					Loam	
4-8	10YR 2/1	95	7.5YR 4/6	5	C	M	Loam	Small rocks throughout

[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)
- ___ 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)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Compact

Depth (inches): 8

Hydric Soil Present? Yes X No ___

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) ___

Wetland Hydrology Present? Yes ___ No X

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

Remarks:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Thurston** Sampling Date: **7/11/2023**
Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **10**
Investigator(s): **C. Booth, K. Sherman (Olsson)** Section, Township, Range: **S35 T27N R8E**
Landform (hillslope, terrace, etc.): **Field** Local relief (concave, convex, none): **None**
Slope (%): **0-1** Lat: **42.264580** Long: **-96.483843** Datum: **NAD83**
Soil Map Unit Name: **7053—Kennebec silt loam, 0 to 3 percent slopes, occasionally flooded, overwash** NWI classification: **None**

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 X No ___
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 X	No ___	Is the Sampled Area within a Wetland?	Yes ___ No X
Hydric Soil Present?	Yes ___	No X		
Wetland Hydrology Present?	Yes ___	No X		

Remarks:
SP 10 is an upland area in an agricultural field planted with corn in Staging Area B. This area was identified during the WETS Tables analysis as a potential wetland; however, the area lacks hydric soil and sufficient wetland hydrology is upland. This area contains dominant hydrophytic vegetation; however, if vegetation had not been disturbed by farming practices it is unlikely that additional hydrophytic species would be present due to the lack of hydric soils and wetland hydrology. Planted corn is present at this SP; however, it is not included in the vegetation calculations.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Cyperus esculentus*	2	X	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	2	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
		= 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	(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
- X 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** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
PP 10

SOIL

Sampling Point: 10

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	50					Clay Loam	
	10YR 3/3	50					Clay Loam	
12-30	10YR 3/2	50	7.5YR 4/6	2	C	M	Clay Loam	
	10YR 3/3	48					Clay Loam	

[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)
- _ 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)
- _ Dark Surface (S7)
- _ Iron-Manganese Masses (F12)
- _ Very Shallow Dark Surface (TF12)
- _ 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:
Although redox is present in the soil profile, it is too low in the profile to meet hydric soil indicator criteria; therefore, this soil is non-hydric.

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:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Thurston** Sampling Date: **7/11/2023**
Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **11**
Investigator(s): **C. Booth, K. Sherman (Olsson)** Section, Township, Range: **S12 T26N R8E**
Landform (hillslope, terrace, etc.): **Field** Local relief (concave, convex, none): **Convex**
Slope (%): **2-3** Lat: **42.235458** Long: **-96.466750** Datum: **NAD83**
Soil Map Unit Name: **8071—Monona silt loam, 11 to 17 percent slopes** NWI classification: **None**
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
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 11 is an upland area in an abandoned agricultural field in Staging Area C. Corn is present at this SP; however, it is not included in the vegetation calculations. This area was identified during the WETS Tables analysis as a potential wetland; however, the area lacks all three wetland indicators.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Echinochloa crus-galli*	25	X	FACW
2. *Amaranthus albus*	25	X	FACU
3. *Abutilon theophrasti*	20	X	FACU
4. *Setaria viridis*	15		UPL
5. *Convolvulus arvensis*	5		UPL
6. *Xanthium spinosum*	5		FACU
7. *Chenopodium album*	5		FACU
8.			
9.			
10.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
		= 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:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	33	(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.)
PP 11

SOIL

Sampling Point: 11

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-30	10YR 3/2	50					Silt Loam	
	10YR 3/3	50					Silt Loam	

[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)
- ___ 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)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

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:

	Yes	No	Depth (inches)
Surface Water Present?		X	
Water Table Present?		X	
Saturation Present? (includes capillary fringe)		X	

Wetland Hydrology Present? Yes ______ **No** X

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

Remarks:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project**	City/County: **Thurston**		Sampling Date: **7/11/2023**
Applicant/Owner: **Winnebago Tribe of Nebraska**		State: **Ne**	Sampling Point: **12**
Investigator(s): **C. Booth, K. Sherman (Olsson)**			Section, Township, Range: **S18 T26N R9E**
Landform (hillslope, terrace, etc.): **Field**	Local relief (concave, convex, none): **Convex**		
Slope (%): **2-3** Lat: **42.231246**	Long: **-96.451215**		Datum: **NAD83**
Soil Map Unit Name: **6603—Alcester silty clay loam, 2 to 6 percent slopes**			NWI classification: **None**

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 X No ___

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.

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

Remarks:
SP 12 is an upland area located within an agricultural field in Staging Area D. This area was identified during the WETS Tables analysis as a potential wetland. Although this area contains hydric soil, it lacks dominant hydrophytic vegetation and sufficient wetland hydrology and is upland. Planted corn is present at this SP; however, it is not included in the vegetation calculations.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Cirsium altissimum*	15	X	UPL
2. *Polygonum sp.*	15	X	OBL-UPL
3. *Helianthus annuus*	5		UPL
4. *Abutilon theophrasti*	5		FACU
5. *Setaria viridis*	5		UPL
6. *Chamaecrista fasciculata*	5		FACU
7.			
8.			
9.			
10.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
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:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(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:	0	(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.)
PP 12

SOIL

Sampling Point: 12

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-22	10YR 3/2	90	7.5YR 4/6	10	C	M	Silty Clay	

[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)
- ___ 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)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

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:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Thurston** Sampling Date: **7/11/2023**

Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **13**

Investigator(s): **C. Booth, K. Sherman (Olsson)** Section, Township, Range: **S18 T26N R9E**

Landform (hillslope, terrace, etc.): **Field** Local relief (concave, convex, none): **Concave**

Slope (%): **2-3** Lat: **42.230944** Long: **-96.451312** Datum: **NAD83**

Soil Map Unit Name: **7716—McPaul silt loam, occasionally flooded** NWI classification: **None**

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 X No ___

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.

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

Remarks:
SP 13 is an upland area located within an agricultural field in Staging Area D. This area was identified during the WETS Tables analysis as a potential wetland. Although this area contains hydric soil, it lacks dominant hydrophytic vegetation and sufficient wetland hydrology and is upland. Planted corn is present at this SP; however, it is not included in the vegetation calculations.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5')			
1. *Helianthus annuus*	20	X	FACU
2. *Cirsium altissimum*	10	X	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	30		
Woody Vine Stratum (Plot size: 30')			
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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (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.)
PP 13

SOIL

Sampling Point: 13

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	98	5YR 5/8	2	C	M	Silty Clay	
4-30	10YR 3/2	90	5YR 5/8	10	C	M	Silty Clay	

[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)
- ___ 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)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

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:

Wetland Determination Data Form - Midwest Region

Project/Site:	Winnebago Tribe Broadband Connectivity Project	City/County:	Thurston	Sampling Date:	7/11/2023
Applicant/Owner:	Winnebago Tribe of Nebraska	State:	NE	Sampling Point:	14
Investigator(s):	C. Booth, K. Sherman (Olsson)			Section, Township, Range:	S18 T26N R9E
Landform (hillslope, terrace, etc.):	Field	Local relief (concave, convex, none):	Concave		
Slope (%): 1-2	Lat: 42.230291	Long:	-96.451752	Datum:	NAD83
Soil Map Unit Name:	7716—McPaul silt loam, occasionally flooded			NWI classification:	None

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 X No ___

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.

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

Remarks:
SP 14 is an upland area located within an agricultural field in Staging Area D. This area was identified during the WETS Tables analysis as a potential wetland; however, the area lacks all three wetland indicators. Planted corn is present at this SP; however, it is not included in the vegetation calculations.

VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5')			
1. *Helianthus annuus*	10	X	UPL
2. *Abutilon theophrasti*	5	X	FACU
3. *Bromus inermis*	5	X	FACU
4. *Amaranthus albus*	5	X	FACU
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	25		
Woody Vine Stratum (Plot size: 30')			
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:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(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.)
PP 14

SOIL

Sampling Point: 14

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-30	10YR 3/2	70					Silty Clay	
	10YR 3/3	30					Silty Clay	

[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)
- __ 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)
- __ Dark Surface (S7)
- __ Iron-Manganese Masses (F12)
- __ Very Shallow Dark Surface (TF12)
- __ 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:

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:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Thurston** Sampling Date: **7/11/2023**

Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **15**

Investigator(s): **C. Booth, K. Sherman (Olsson)** Section, Township, Range: **S18 T26N R9E**

Landform (hillslope, terrace, etc.): **Toe of Slope** Local relief (concave, convex, none): **Concave**

Slope (%): **2-3** Lat: **42.231151** Long: **-96.451524** Datum: **NAD83**

Soil Map Unit Name: **6603—Alcester silty clay loam, 2 to 6 percent slopes** NWI classification: **None**

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

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

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.

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

Remarks:
SP 15 is an upland area located at the toe of a slope along the edge of an agricultural field in Staging Area D. Although this area contains hydric soil, it lacks dominant hydrophytic vegetation and sufficient wetland hydrology and is upland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Persicaria coccinea*	30	X	OBL
2. *Bromus inermis*	15	X	FACU
3. *Rumex crispus*	15	X	FAC
4. *Convolvulus arvensis*	15	X	UPL
5. *Chamaecrista fasciculata*	10		FACU
6. *Sonchus arvensis*	10		FACU
7. *Rumex altissimus*	5		FACW
8.			
9.			
10.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
		= 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: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	5	x 2 =	10
FAC species	15	x 3 =	45
FACU species	45	x 4 =	180
UPL species	15	x 5 =	75
Column Totals:	110 (A)		340 (B)

Prevalence Index = B/A = 3.09

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.)
PP 15

SOIL

Sampling Point: 15

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-22	10YR 3/1	95	7.5YR 4/6	5	C	M	Clay Loam	

[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)
- __ 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)
- __ Dark Surface (S7)
- __ Iron-Manganese Masses (F12)
- __ Very Shallow Dark Surface (TF12)
- __ 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:

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:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Thurston** Sampling Date: **7/19/2023**
Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **16**
Investigator(s): **K. Sherman, C. Booth, W. Jewell (Olsson)** Section, Township, Range: **S1 T26N R9E**
Landform (hillslope, terrace, etc.): **Field** Local relief (concave, convex, none): **Concave**
Slope (%): **3-4** Lat: **42.250773** Long: **-96.351748** Datum: **NAD83**
Soil Map Unit Name: **7880—Onawa silty clay, occasionally flooded** NWI classification: **None**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks)
Are Vegetation X , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
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 X	No ___
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes X	No ___
Is the Sampled Area within a Wetland?	**Yes** X	**No** ___

Remarks:
Wetland 16 is a PEMA/C wetland within an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Planted soybeans are present at this SP; however, they are not included in the vegetation calculations. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5')			
1. *Amaranthus tuberculatus*	4	X	OBL
2. *Echinochloa crus-galli*	2	X	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	6		
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
= 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	(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:

- X 1 - Rapid Test for Hydrophytic Vegetation
- X 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** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
PP 16

SOIL

Sampling Point: 16

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-30	Gley4/10Y	97	7.5YR4/6	3	C	M	Clay	Organic matter throughout

[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)
- ___ Loamy Mucky Mineral (F1)
- X 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)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

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)

- X Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X 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 ___	Depth (inches)		

Wetland Hydrology Present? Yes X **No** ___

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

Remarks:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project**	City/County: **Thurston**	Sampling Date: **7/19/2023**	
Applicant/Owner: **Winnebago Tribe of Nebraska**	State: **NE**	Sampling Point: **17**	
Investigator(s): **K. Sherman, C. Booth, W. Jewell (Olsson)**		Section, Township, Range: **S1 T26N R9E**	
Landform (hillslope, terrace, etc.): **Field**	Local relief (concave, convex, none): **Concave**		
Slope (%): **2-3** Lat: **42.250882**	Long: **-96.351508**	Datum: **NAD83**	
Soil Map Unit Name: **7880—Onawa silty clay, occasionally flooded**		NWI classification: **None**	

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

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

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.

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

Remarks:
Wetland 17 is a PEMA/C wetland within an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the presence of hydric soils and wetland hydrology indicators, it is likely hydrophytic vegetation would be present in the absence of farming practices. Planted soybeans are present at this SP; however, they are not included in the vegetation calculations. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
		= Total Cover	
Woody Vine Stratum (Plot size: 30')			
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:	0	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(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:	0 (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.)
PP 17

SOIL

Sampling Point: 17

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-30	Gley1 4/10Y	97	7.5YR4/6	3	C	M	Clay	

[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)
- ___ Loamy Mucky Mineral (F1)
- X 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)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

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)

- X Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X 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)	___

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

Wetland Determination Data Form - Midwest Region

Project/Site:	Winnebago Tribe Broadband Connectivity Project	City/County:	Thurston	Sampling Date:	7/19/2023
Applicant/Owner:	Winnebago Tribe of Nebraska	State:	NE	Sampling Point:	18
Investigator(s):	K. Sherman, C. Booth, W. Jewell (Olsson)			Section, Township, Range:	S1 T26N R9E
Landform (hillslope, terrace, etc.):	Field	Local relief (concave, convex, none):	Concave		
Slope (%): 2-3	Lat: 42.250957	Long:	-96.350933	Datum:	NAD83
Soil Map Unit Name:	7876—Onawa and Haynie soils, occasionally flooded			NWI classification:	None

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

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

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.

	Yes	No
Hydrophytic Vegetation Present?	-	-
Hydric Soil Present?	X	
Wetland Hydrology Present?	X	

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
Wetland 18 is a PEMA/C wetland within an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the presence of hydric soils and wetland hydrology indicators, it is likely hydrophytic vegetation would be present in the absence of farming practices. Planted soybeans are present at this SP; however, they are not included in the vegetation calculations. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	= Total Cover		
Woody Vine Stratum (Plot size: 30')			
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:	0	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(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:	0	(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** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
PP 18

SOIL

Sampling Point: 18

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/1	90	7.5YR 4/6	10	C	M	Clay	
10-30	10YR 3/1	85	7.5YR 4/6	15	C	M	Clay	

[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)
- ___ 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)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

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)

- X Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Stunted or Stressed Plants (D1)
- X 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 X **No** ___

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

Remarks:

Wetland Determination Data Form - Midwest Region

Project/Site:	Winnebago Tribe Broadband Connectivity Project	City/County:	Thurston	Sampling Date:	7/19/2023
Applicant/Owner:	Winnebago Tribe of Nebraska	State:	NE	Sampling Point:	19
Investigator(s):	K. Sherman, C. Booth, W. Jewell (Olsson)			Section, Township, Range:	S1 T26N R9E
Landform (hillslope, terrace, etc.):	Field	Local relief (concave, convex, none):	Concave		
Slope (%): 2-3	Lat: 42.250607	Long:	-96.351478	Datum:	NAD83
Soil Map Unit Name:	7880—Onawa silty clay, occasionally flooded			NWI classification:	None

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

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

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.

	Yes	No
Hydrophytic Vegetation Present?	-	-
Hydric Soil Present?		X
Wetland Hydrology Present?	X	

Is the Sampled Area within a Wetland? Yes ____ No X

Remarks:
SP 19 is an upland outpoint for to Wetlands 16, 17, and 18 located in an agricultural field in Staging Area E. The area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil, it is unlikely hydrophytic vegetation would be present in the absence of farming practices. Planted soybeans are present at this SP; however, they are not included in the vegetation calculations. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
		= Total Cover	
Woody Vine Stratum (Plot size: 30')			
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:	0	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(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:	0	(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 -

Remarks: (Include photo numbers here or on a separate sheet.)
PP 19

SOIL

Sampling Point: 19

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-30	10YR 3/1	100					Clay	

[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)
- __ 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)
- __ Dark Surface (S7)
- __ Iron-Manganese Masses (F12)
- __ Very Shallow Dark Surface (TF12)
- __ 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:

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)

- X 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:

	Yes	No	Depth (inches)
Surface Water Present?		X	
Water Table Present?		X	
Saturation Present? (includes capillary fringe)		X	

Wetland Hydrology Present? Yes X **No** ____

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

Remarks:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Thurston** Sampling Date: **7/19/2023**
Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **20**
Investigator(s): **K. Sherman, C. Booth, W. Jewell (Olsson)** Section, Township, Range: **S1 T26N R9E**
Landform (hillslope, terrace, etc.): **Field** Local relief (concave, convex, none): **Concave**
Slope (%): **2-3** Lat: **42.249527** Long: **-96.350685** Datum: **NAD83**
Soil Map Unit Name: **7856—Sarpy soils, occasionally flooded** NWI classification: **None**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks)
Are Vegetation X , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
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.

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

Remarks:
SP 20 is an upland area located within an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Although this area contains hydric soil, it lacks dominant hydrophytic vegetation and sufficient wetland hydrology and is upland. Planted soybeans are present at this SP; however, they are not included in the vegetation calculations. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Amaranthus retroflexus*	3	X	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	3	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
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 (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 $\leq$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.)
PP 20

SOIL

Sampling Point: 20

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/1	90	10YR 5/3	10	C	M	Clay Loam	
5-30	10YR 3/1	100					Sand	

[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)
- __ 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)
- __ Dark Surface (S7)
- __ Iron-Manganese Masses (F12)
- __ Very Shallow Dark Surface (TF12)
- __ 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:

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 ___	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:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Thurston** Sampling Date: **7/19/2023**
Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **21**
Investigator(s): **K. Sherman, C. Booth, W. Jewell (Olsson)** Section, Township, Range: **S1 T26N R9E**
Landform (hillslope, terrace, etc.): **Field** Local relief (concave, convex, none): **None**
Slope (%): **0-2** Lat: **42.248573** Long: **-96.350907** Datum: **NAD83**
Soil Map Unit Name: **7856—Sarpy soils, occasionally flooded** NWI classification: **None**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks)
Are Vegetation X , Soil ____ , or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
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
Hydric Soil Present?	Yes ____	No X
Wetland Hydrology Present?	Yes ____	No X

Is the Sampled Area within a Wetland? Yes ____ No X

Remarks:
SP 21 is an upland area located within an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland; however, the area lacks all three wetland indicators and is upland. Planted soybeans are present at this SP; however, they are not included in the vegetation calculations. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5')			
1. *Amaranthus retroflexus*	1	X	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	1		
Woody Vine Stratum (Plot size: 30')			
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 (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:	0	(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.)
PP 21

SOIL

Sampling Point: 21

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-30	10YR 4/2	100					Clay Loam	

[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)
- __ 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)
- __ Dark Surface (S7)
- __ Iron-Manganese Masses (F12)
- __ Very Shallow Dark Surface (TF12)
- __ 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:

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:

	Yes	No	Depth (inches)
Surface Water Present?		X	
Water Table Present?		X	
Saturation Present? (includes capillary fringe)		X	

Wetland Hydrology Present? Yes ______ **No** X

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

Remarks:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Thurston** Sampling Date: **7/19/2023**

Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **22**

Investigator(s): **K. Sherman, C. Booth, W. Jewell (Olsson)** Section, Township, Range: **S1 T26N R9E**

Landform (hillslope, terrace, etc.): **Field** Local relief (concave, convex, none): **Concave**

Slope (%): **2-3** Lat: **42.248561** Long: **-96.353254** Datum: **NAD83**

Soil Map Unit Name: **7880—Onawa silty clay, occasionally flooded** NWI classification: **None**

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

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

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.

	Yes	No
Hydrophytic Vegetation Present?	-	-
Hydric Soil Present?		X
Wetland Hydrology Present?		X

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks:
SP 22 is an upland area located within an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices. Planted soybeans are present at this SP; however, they are not included in the vegetation calculations. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
		= Total Cover	
Woody Vine Stratum (Plot size: 30')			
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: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (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:	0	(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 -

Remarks: (Include photo numbers here or on a separate sheet.)
PP 22

SOIL

Sampling Point: 22

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/1	90					Clay	
	10YR 4/3	9	7.5YR4/6	1	C	M	Sand	
2-30	10YR 3/1	100					Clay	

[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)
- __ 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)
- __ Dark Surface (S7)
- __ Iron-Manganese Masses (F12)
- __ Very Shallow Dark Surface (TF12)
- __ 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:
Although redox is present in the soil profile, it is at too low of a percentage to meet hydric soil indicator criteria; therefore, this soil is non-hydric.

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 ____	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:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Thurston** Sampling Date: **7/19/2023**
Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **23**
Investigator(s): **K. Sherman, C. Booth, W. Jewell (Olsson)** Section, Township, Range: **S12 T26N R9E**
Landform (hillslope, terrace, etc.): **Field** Local relief (concave, convex, none): **Concave**
Slope (%): **2-3** Lat: **42.247848** Long: **-96.351368** Datum: **NAD83**
Soil Map Unit Name: **7889—Onawet silty clay loam, frequently flooded** NWI classification: **None**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks)
Are Vegetation X , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
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 X No ___	**Is the Sampled Area within a Wetland?** **Yes** X **No** ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	

Remarks:
Wetland 23 is a PEMA/C wetland located within an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Planted soybeans are present at this SP; however, they are not included in the vegetation calculations. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Amaranthus tuberculatus*	3	X	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	3	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
		= 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	(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:	0	(A)	(B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 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** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
PP 23

SOIL

Sampling Point: 23

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-30	10YR4/1	95	7.5YR4/6	5	C	M	Clay	

[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)
- ___ 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[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

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)

- X Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Stunted or Stressed Plants (D1)
- X 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 X **No** ___

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

Remarks:

Wetland Determination Data Form - Midwest Region

Project/Site: Winnebago Tribe Broadband Connectivity Project	City/County: Thurston		Sampling Date: 7/19/2023
Applicant/Owner: Winnebago Tribe of Nebraska		State: NE	Sampling Point: 24
Investigator(s): K. Sherman, C. Booth, W. Jewell (Olsson)			Section, Township, Range: S12 T26N R9E
Landform (hillslope, terrace, etc.): Field	Local relief (concave, convex, none): Concave		
Slope (%): 2-3	Lat: 42.247671	Long: -96.351678	Datum: NAD83
Soil Map Unit Name: 7889—Onawet silty clay loam, frequently flooded			NWI classification: None

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

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

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.

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

Remarks:
SP 24 is the upland outpoint for Wetland 23 (PEMA/C) and Wetland 25 (PEMA/C) located in an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices. Planted soybeans are present at this SP; however, they are not included in the vegetation calculations. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	= Total Cover		
Woody Vine Stratum (Plot size: 30')			
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:	0	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(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:	0	(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 -

Remarks: (Include photo numbers here or on a separate sheet.)
PP 24

SOIL

Sampling Point: 24

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-30	10YR3/1	100					Clay	

[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)
- _ 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)
- _ Dark Surface (S7)
- _ Iron-Manganese Masses (F12)
- _ Very Shallow Dark Surface (TF12)
- _ 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:

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	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:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Thurston** Sampling Date: **7/19/2023**
Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **25**
Investigator(s): **K. Sherman, C. Booth, W. Jewell (Olsson)** Section, Township, Range: **S12 T26N R9E**
Landform (hillslope, terrace, etc.): **Field** Local relief (concave, convex, none): **Concave**
Slope (%): **3-4** Lat: **42.246460** Long: **-96.352934** Datum: **NAD83**
Soil Map Unit Name: **7889—Onawet silty clay loam, frequently flooded** NWI classification: **None**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks)
Are Vegetation X , Soil ____ , or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
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 X	No	**Is the Sampled Area within a Wetland?** **Yes** X **No**
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks:
Wetland 25 is a PEMA/C wetland located in an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Planted soybeans are present at this SP; however, they are not included in the vegetation calculations. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Amaranthus tuberculatus*	2	X	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	2	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
		= 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	(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:	0	(A)	(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 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** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
PP 25

SOIL

Sampling Point: 25

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-30	Gley1 4/10Y	100					Clay	

[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)
- ___ Loamy Mucky Mineral (F1)
- X 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)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

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)
- X 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)

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

Wetland Hydrology Present? Yes X **No** ___

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

Remarks:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Thurston** Sampling Date: **7/19/2023**
Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **26**
Investigator(s): **K. Sherman, C. Booth, W. Jewell (Olsson)** Section, Township, Range: **S12 T26N R9E**
Landform (hillslope, terrace, etc.): **Field** Local relief (concave, convex, none): **Convex**
Slope (%): **2-3** Lat: **42.244891** Long: **-96.354494** Datum: **NAD83**
Soil Map Unit Name: **7889—Onawet silty clay loam, frequently flooded** NWI classification: **None**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks)
Are Vegetation X , Soil ____ , or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
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.

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

Remarks:
SP 26 is an upland area located in an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices. Planted corn is present at this SP; however, it is not included in the vegetation calculations. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
		= Total Cover	
Woody Vine Stratum (Plot size: 30')			
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: 0 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (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:	0	(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 -

Remarks: (Include photo numbers here or on a separate sheet.)
PP 26

SOIL

Sampling Point: 26

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/1	100					Loam	
6-30	10YR 3/1	85					Clay	
	10YR 4/2	10	7.5YR 4/6	5	C	M	Clay	

[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)
- ___ 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)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

Although redox is present in the soil profile, the matrix color containing the redox is at too low of a percentage to meet hydric soil indicator criteria; therefore, this soil is non-hydric.

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:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project**	City/County: **Thurston**	Sampling Date:	**7/19/2023**
Applicant/Owner: **Winnebago Tribe of Nebraska**	State: **NE**	Sampling Point:	**27**
Investigator(s): **K. Sherman, C. Booth, W. Jewell (Olsson)**		Section, Township, Range:	**S12 T26N R9E**
Landform (hillslope, terrace, etc.): **Field**	Local relief (concave, convex, none): **Concave**		
Slope (%): **2-3** Lat: **42.242666**	Long: **-96.35738**	Datum:	**NAD83**
Soil Map Unit Name: **7889—Onawet silty clay loam, frequently flooded**		NWI classification:	**None**

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

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

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.

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

Remarks:
SP 27 is an upland area located within an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices. Planted corn is present at this SP; however, it is not included in the vegetation calculations. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
		= Total Cover	
Woody Vine Stratum (Plot size: 30')			
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:	0	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(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:	0	(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 -

Remarks: (Include photo numbers here or on a separate sheet.)
PP 27

SOIL

Sampling Point: 27

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/1	100					Clay Loam	
6-30	10YR 3/1	100					Clay	

[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)
- _ 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)
- _ Dark Surface (S7)
- _ Iron-Manganese Masses (F12)
- _ Very Shallow Dark Surface (TF12)
- _ 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:

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:

	Yes	No	Depth (inches)
Surface Water Present?		X	
Water Table Present?		X	
Saturation Present? (includes capillary fringe)		X	

Wetland Hydrology Present? Yes ___ **No** X

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

Remarks:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project**	City/County: **Thurston**	Sampling Date: **7/19/2023**
Applicant/Owner: **Winnebago Tribe of Nebraska**	State: **NE**	Sampling Point: **28**
Investigator(s): **K. Sherman, C. Booth, W. Jewell (Olsson)**		Section, Township, Range: **S12 T26N R9E**
Landform (hillslope, terrace, etc.): **Field**	Local relief (concave, convex, none): **None**	
Slope (%): **2-3** Lat: **42.242839**	Long: **-96.357342**	Datum: **NAD83**
Soil Map Unit Name: **7889—Onawet silty clay loam, frequently flooded**		NWI classification: **None**

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

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

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.

	Yes	No
Hydrophytic Vegetation Present?	-	-
Hydric Soil Present?		X
Wetland Hydrology Present?		X

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks:
SP 28 is an upland area located within an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices. Planted corn is present at this SP; however, it is not included in the vegetation calculations. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
		= Total Cover	
Woody Vine Stratum (Plot size: 30')			
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:	0	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(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:	0	(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 -

Remarks: (Include photo numbers here or on a separate sheet.)
PP 28

SOIL

Sampling Point: 28

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-30	10YR 3/2	100					Clay	

[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)
- __ 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)
- __ Dark Surface (S7)
- __ Iron-Manganese Masses (F12)
- __ Very Shallow Dark Surface (TF12)
- __ 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:

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:

Wetland Determination Data Form - Midwest Region

Project/Site: Winnebago Tribe Broadband Connectivity Project	City/County: Thurston		Sampling Date: 7/19/2023
Applicant/Owner: Winnebago Tribe of Nebraska		State: NE	Sampling Point: 29
Investigator(s): K. Sherman, C. Booth, W. Jewell (Olsson)			Section, Township, Range: S12 T26N R9E
Landform (hillslope, terrace, etc.): Field	Local relief (concave, convex, none): Concave		
Slope (%): 0-1 Lat: 42.236335	Long: -96.356819		Datum: NAD83
Soil Map Unit Name: 7889—Onawet silty clay loam, frequently flooded			NWI classification: None

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

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

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.

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

Remarks:
SP 29 is an upland area located within an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices. Planted corn is present at this SP; however, it is not included in the vegetation calculations. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
		= Total Cover	
Woody Vine Stratum (Plot size: 30')			
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:	0	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(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:	0	(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 -

Remarks: (Include photo numbers here or on a separate sheet.)
PP 29

SOIL

Sampling Point: 29

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-30	10YR 3/2	100					Clay	

[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)
- ___ 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)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

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:

Wetland Determination Data Form - Midwest Region

Project/Site:	Winnebago Tribe Broadband Connectivity Project	City/County:	Thurston	Sampling Date:	7/19/2023
Applicant/Owner:	Winnebago Tribe of Nebraska	State:	NE	Sampling Point:	30
Investigator(s):	K. Sherman, C. Booth, W. Jewell (Olsson)			Section, Township, Range:	S12 T26N R9E
Landform (hillslope, terrace, etc.):	Field	Local relief (concave, convex, none):	None		
Slope (%): 1-2	Lat: 42.232813	Long:	-96.351436	Datum:	NAD83
Soil Map Unit Name:	7880—Onawa silty clay, occasionally flooded			NWI classification:	Riverine

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

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

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.

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

Remarks:

SP 30 is an upland area within an agricultural field in Staging Area E. This area is depicted by the NWI and NHD as a riverine and stream channel, respectively; however, the area lacks a defined bed and ba nk and OHWM and is not a wetland or stream channel. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices. Planted corn is present at this SP; however, it is not included in the vegetation calculations. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover			
Woody Vine Stratum (Plot size: 30')			
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:	0	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(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:	0 (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 -

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

PP 30

SOIL

Sampling Point: 30

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-30	10YR 3/1	100					Clay	

[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)
- __ 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)
- __ Dark Surface (S7)
- __ Iron-Manganese Masses (F12)
- __ Very Shallow Dark Surface (TF12)
- __ 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:

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:

Wetland Determination Data Form - Midwest Region

Project/Site:	Winnebago Tribe Broadband Connectivity Project	City/County:	Thurston	Sampling Date:	7/19/2023
Applicant/Owner:	Winnebago Tribe of Nebraska	State:	NE	Sampling Point:	31
Investigator(s):	K. Sherman, C. Booth, W. Jewell (Olsson)			Section, Township, Range:	S7 T26N R10E
Landform (hillslope, terrace, etc.):	Field	Local relief (concave, convex, none):	Concave		
Slope (%):	0-2 Lat: 42.23521	Long:	-96.343208	Datum:	NAD83
Soil Map Unit Name:	7880—Onawa silty clay, occasionally flooded			NWI classification:	None

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

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

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.

	Yes	No
Hydrophytic Vegetation Present?	-	-
Hydric Soil Present?		X
Wetland Hydrology Present?		X

Is the Sampled Area within a Wetland? Yes ____ No X

Remarks:
SP 31 is an upland area within an agricultural field planted with corn in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices. Planted corn is present at this SP; however, it is not included in the vegetation calculations. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	= Total Cover		
Woody Vine Stratum (Plot size: 30')			
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:	0	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(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:	0	(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 -

Remarks: (Include photo numbers here or on a separate sheet.)
PP 31

SOIL

Sampling Point: 31

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/1	95					Clay	
	10YR 4/2	5					Clay	
4-30	10YR 4/2	100					Clay	

[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)
- __ 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)
- __ Dark Surface (S7)
- __ Iron-Manganese Masses (F12)
- __ Very Shallow Dark Surface (TF12)
- __ 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:

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:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Thurston** Sampling Date: **7/19/2023**
Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **32**
Investigator(s): **K. Sherman, C. Booth, W. Jewell (Olsson)** Section, Township, Range: **S7 T26N R10E**
Landform (hillslope, terrace, etc.): **Field** Local relief (concave, convex, none): **None**
Slope (%): **1-2** Lat: **42.238448** Long: **-96.342224** Datum: **NAD83**
Soil Map Unit Name: **7880—Onawa silty clay, occasionally flooded** NWI classification: **None**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks)
Are Vegetation X , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
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 -
Hydric Soil Present?	Yes	No X
Wetland Hydrology Present?	Yes	No X

Is the Sampled Area within a Wetland? **Yes** ___ **No** X

Remarks:
SP 32 is an upland area within an agricultural field planted with corn in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices. Planted corn is present at this SP; however, it is not included in the vegetation calculations. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
		= Total Cover	
Woody Vine Stratum (Plot size: 30')			
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: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (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:	0	(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** -

Remarks: (Include photo numbers here or on a separate sheet.)
PP 32

SOIL

Sampling Point: 32

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-30	10YR 3/2	55					Clay	
	10YR 4/2	45					Silty Clay	

[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)
- __ 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)
- __ Dark Surface (S7)
- __ Iron-Manganese Masses (F12)
- __ Very Shallow Dark Surface (TF12)
- __ 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:

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:

Wetland Determination Data Form - Midwest Region

Project/Site:	**Winnebago Tribe Broadband Connectivity Project**	City/County:	**Thurston**	Sampling Date:	**7/19/2023**
Applicant/Owner:	**Winnebago Tribe of Nebraska**	State:	**NE**	Sampling Point:	**33**
Investigator(s):	**K. Sherman, C. Booth, W. Jewell (Olsson)**			Section, Township, Range:	**S6 T26N R10E**
Landform (hillslope, terrace, etc.):	**Field**	Local relief (concave, convex, none):	**Concave**		
Slope (%): **1-2**	Lat: **42.248481**	Long:	**-96.34523**	Datum:	**NAD83**
Soil Map Unit Name:	**7880—Onawa silty clay, occasionally flooded**			NWI classification:	**None**

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

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

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.

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

Remarks:
SP 33 is an upland area located within an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Although this area contains hydric soil, it lacks dominant hydrophytic vegetation and sufficient wetland hydrology and is upland. Planted corn is present at this SP; however, it is not included in the vegetation calculations. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Amaranthus retroflexus*	3	X	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	3	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
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	(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:	0	(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.)
PP 33

SOIL

Sampling Point: 33

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/2	95	7.5YR 4/6	5	C	M	Silty Loam	
6-30	10YR 4/2	90	7.5YR 4/6	10	C	M	Silty Loam	

[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)
- ___ 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[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

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:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Woodbury** Sampling Date: **7/19/2023**
Applicant/Owner: **Winnebago Tribe of Nebraska** State: **IA** Sampling Point: **34**
Investigator(s): **K. Sherman, C. Booth, W. Jewell (Olsson)** Section, Township, Range: **S33 T86N R47W**
Landform (hillslope, terrace, etc.): **Field** Local relief (concave, convex, none): **Concave**
Slope (%): **2-3** Lat: **42.223291** Long: **-96.320559** Datum: **NAD83**
Soil Map Unit Name: **1524—Morconick fine sandy loam, 0 to 2 percent slopes, occasionally flooded** NWI classification: **None**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks)
Are Vegetation X , Soil ____ , or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
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 -	
Hydric Soil Present?	Yes X	No	Is the Sampled Area within a Wetland? Yes ____ No X
Wetland Hydrology Present?	Yes	No X	

Remarks:
SP 34 is an upland area located within an agricultural field in Staging Area F. This area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the lack of sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices. Planted corn is present at this SP; however, it is not included in the vegetation calculations. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
		= Total Cover	
Woody Vine Stratum (Plot size: 30')			
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:	0	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(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:	0	(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 -

Remarks: (Include photo numbers here or on a separate sheet.)
PP 34

SOIL

Sampling Point: 34

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/2	95	7.5YR 4/6	5	C	M	Sand	
4-30	10YR 4/3	100					Sand	

[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)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ 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)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

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 ___	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:

Wetland Determination Data Form - Midwest Region

Project/Site:	Winnebago Tribe Broadband Connectivity Project	City/County:	Woodbury	Sampling Date:	7/19/2023
Applicant/Owner:	Winnebago Tribe of Nebraska	State:	IA	Sampling Point:	35
Investigator(s):	K. Sherman, C. Booth, W. Jewell (Olsson)			Section, Township, Range:	S33 T86N R47W
Landform (hillslope, terrace, etc.):	Field	Local relief (concave, convex, none):	Concave		
Slope (%): 2-3	Lat: 42.222516	Long:	-96.321502	Datum:	NAD83
Soil Map Unit Name:	1524—Morconick fine sandy loam, 0 to 2 percent slopes, occasionally floode			NWI classification:	None

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

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

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.

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

Remarks:
SP 35 is an upland area located within an agricultural field in Staging Area F. This area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices. Planted soybeans are present at this SP; however, they are not included in the vegetation calculations. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
		= Total Cover	
Woody Vine Stratum (Plot size: 30')			
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:	0	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(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:	0 (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 -

Remarks: (Include photo numbers here or on a separate sheet.)
PP 35

SOIL

Sampling Point: 35

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-22	10YR 4/3	100					Sand	

[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)
- ___ 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)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

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 ___	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:

Wetland Determination Data Form - Midwest Region

Project/Site:	Winnebago Tribe Broadband Connectivity Project	City/County:	Woodbury	Sampling Date:	7/19/2023
Applicant/Owner:	Winnebago Tribe of Nebraska	State:	IA	Sampling Point:	36
Investigator(s):	K. Sherman, C. Booth, W. Jewell (Olsson)			Section, Township, Range:	S33 T86N R47W
Landform (hillslope, terrace, etc.):	Field	Local relief (concave, convex, none):	Concave		
Slope (%): 4-5	Lat: 42.221051	Long:	-96.321394	Datum:	NAD83
Soil Map Unit Name:	1524—Morconick fine sandy loam, 0 to 2 percent slopes, occasionally flooded			NWI classification:	None

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

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

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.

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

Remarks:
SP 36 is an upland area within an agricultural field in Staging Area F. This area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices. Planted soybeans are present at this SP; however, they are not included in the vegetation calculations. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	= Total Cover		
Woody Vine Stratum (Plot size: 30')			
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:	0	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(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:	0	(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 -

Remarks: (Include photo numbers here or on a separate sheet.)
PP 36

SOIL

Sampling Point: 36

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-22	10YR 4/3	100					Sand	

[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)
- 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)
- Dark Surface (S7)
- Iron-Manganese Masses (F12)
- Very Shallow Dark Surface (TF12)
- 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:

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:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Woodbury** Sampling Date: **7/26/2023**
Applicant/Owner: **Winnebago Tribe of Nebraska** State: **IA** Sampling Point: **37**
Investigator(s): **K. Sherman, K. Gaston (Olsson)** Section, Township, Range: **S33 T86N R47W**
Landform (hillslope, terrace, etc.): **Field** Local relief (concave, convex, none): **Concave**
Slope (%): **4-5** Lat: **42.221051** Long: **-96.321394** Datum: **NAD83**
Soil Map Unit Name: **1146—Onawa silty clay, 0 to 2 percent slopes, occasionally flooded** NWI classification: **Riverine**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks)
Are Vegetation X , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
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.

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

Remarks:
SP 37 is an upland area located within an agricultural field in Staging Area F. The NWI and NHD depict this area as a riverine habitat and stream channel, respectively; however, the area lacks a defined bed and bank and OHWM and is not a wetland or stream channel. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices. Planted soybeans are present at this SP; however, they are not included in the vegetation calculations. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover			
Woody Vine Stratum (Plot size: 30')			
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: 0 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (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:	0 (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.)
PP 37

SOIL

Sampling Point: 37

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 4/3	100					Silt Loam	
15-30	10YR 4/3	85	10YR 5/8	15	C	M	Silt Loam	

[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)
- ___ 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)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

Although redox is present in the soil profile, it is too low in the profile to meet hydric soil indicator criteria; therefore, this soil is non-hydric.

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 ___	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:

Wetland Determination Data Form - Midwest Region

Project/Site:	Winnebago Tribe Broadband Connectivity Project	City/County:	Wayne	Sampling Date:	7/19/2023
Applicant/Owner:	Winnebago Tribe of Nebraska	State:	NE	Sampling Point:	38
Investigator(s):	K. Sherman, C. Booth, W. Jewell (Olsson)			Section, Township, Range:	S32 T27N R5E
Landform (hillslope, terrace, etc.):	Slope	Local relief (concave, convex, none):	Convex		
Slope (%): 2-3	Lat: 42.264444	Long:	-96.859289	Datum:	NAD83
Soil Map Unit Name:	6811—Moody silty clay loam, 2 to 6 percent slopes			NWI classification:	None

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

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

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.

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

Remarks:
SP 38 is an upland area located on a slope north of 858th Road at Wakefield Bore Point 101. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Festuca trachyphylla*	50	X	FACU
2. *Veronica peregrina*	15		FACW
3. *Chenopodium album*	15		FACU
4. *Ambrosia artemisiifolia*	10		FACU
5. *rumex crispus*	10		FAC
6.			
7.			
8.			
9.			
10.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
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	(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:	0	(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.)
PP 38

SOIL

Sampling Point: 38

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-22	10YR 3/2	90					Clay Loam	
	10YR 2/1	10					Clay	

[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)
__ 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)
__ Dark Surface (S7)
__ Iron-Manganese Masses (F12)
__ Very Shallow Dark Surface (TF12)
__ 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:

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:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Dixon** Sampling Date: **7/19/2023**
Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **39**
Investigator(s): **K. Sherman, C. Booth, W. Jewell (Olsson)** Section, Township, Range: **S32 T27N R5E**
Landform (hillslope, terrace, etc.): **Ditch** Local relief (concave, convex, none): **Concave**
Slope (%): **2-3** Lat: **42.264283** Long: **-96.856347** Datum: **NAD83**
Soil Map Unit Name: **7099—Zook silty clay loam, 0 to 2 percent slopes, occasionally flooded** NWI classification: **None**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
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.

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

Remarks:
SP 39 is an upland area located within a ditch south of 858th Road at Wakefield Bore Point 102. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5')			
1. *Bromus japonicus*	20	X	UPL
2. *Ambrosia artemisiifolia*	20	X	FACU
3. *Convolvulus arvensis*	17	X	UPL
4. *Amaranthus retroflexus*	10		FACU
5. *Setaria faberi*	10		FACU
6. *Schoenoplectus pungens*	10		OBL
7. *Echinochloa crus-galli*	5		FACW
8. *Cyperus esculentus*	3		FACW
9. *Asclepias syriaca*	3		FACU
10. *Digitaria sanguinalis*	2		FACU
= Total Cover	100		
Woody Vine Stratum (Plot size: 30')			
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:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(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:	0	(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.)
PP 39

SOIL

Sampling Point: 39

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-22	10YR3/2	100					Clay Loam	

[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)
- ___ 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)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

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:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Dixon** Sampling Date: **7/19/2023**

Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **40**

Investigator(s): **K. Sherman, C. Booth, W. Jewell (Olsson)** Section, Township, Range: **S32 T27N R5E**

Landform (hillslope, terrace, etc.): **Field** Local relief (concave, convex, none): **Concave**

Slope (%): **1-2** Lat: **42.270684** Long: **-96.858476** Datum: **NAD83**

Soil Map Unit Name: **7153—Kennebec silt loam, rarely flooded** NWI classification: **None**

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

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

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
Hydric Soil Present?	Yes ____	No X
Wetland Hydrology Present?	Yes ____	No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
SP 40 is an upland area located in a grassy field at Wakefield Bore Point 103. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 15')			
1. *Morus alba*	5	X	FAC
2.			
3.			
4.			
5.			
= Total Cover	5		
Herb Stratum (Plot size: 5')			
1. *Bromus inermis*	100	X	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	100		
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
= 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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	105 (A)		415 (B)

Prevalence Index = B/A = 3.95

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.)
PP 40

SOIL

Sampling Point: 40

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-22	10YR 2/1	100					Clay Loam	

[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)
- ___ 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)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

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:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Dixon** Sampling Date: **7/19/2023**

Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **41**

Investigator(s): **K. Sherman, C. Booth, W. Jewell (Olsson)** Section, Township, Range: **S32 T27N R5E**

Landform (hillslope, terrace, etc.): **Slope** Local relief (concave, convex, none): **Convex**

Slope (%): **7-8** Lat: **42.273736** Long: **-96.86195** Datum: **NAD83**

Soil Map Unit Name: **7153—Kennebec silt loam, rarely flooded** NWI classification: **None**

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

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

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 41 is an upland outpoint for Wetland 45 (PEMA/C) along the east side of Nebraska Highway 35 at Wakefield Bore Point 104. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Digitaria sanguinalis*	65	X	FACU
2. *Thlaspi arvense*	25	X	FACU
3. *Amaranthus retroflexus*	10		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (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:	0	(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.)
PP 41

SOIL

Sampling Point: 41

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-22	10YR 3/1	100					Loam	

[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)
- __ 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)
- __ Dark Surface (S7)
- __ Iron-Manganese Masses (F12)
- __ Very Shallow Dark Surface (TF12)
- __ 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:

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:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Dixon** Sampling Date: **7/19/2023**
Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **42**
Investigator(s): **K. Sherman, C. Booth, W. Jewell (Olsson)** Section, Township, Range: **S32 T27N R5E**
Landform (hillslope, terrace, etc.): **Ditch** Local relief (concave, convex, none): **Concave**
Slope (%): **2-3** Lat: **42.273797** Long: **-96.861858** Datum: **NAD83**
Soil Map Unit Name: **7153—Kennebec silt loam, rarely flooded** NWI classification: **None**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
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 X	No ___
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes X	No ___

Is the Sampled Area within a Wetland? **Yes** X **No** ___

Remarks:
Wetland 42 is a PEMA/C wetland in the eastern roadside ditch of Nebraska Highway 35 at Wakefield Bore Point 104. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Echinochloa crus-galli*	35	X	FACW
2. *Panicum virgatum*	30	X	FAC
3. *Persicaria pensylvanica*	20	X	FACW
4. *Amaranthus tuberculatus*	15		OBL
5.			
6.			
7.			
8.			
9.			
10.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
		= 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	(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:	0	(A)	(B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 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** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
PP 42

SOIL

Sampling Point: 42

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/1	50	7.5YR 4/6	5	C	M	Clay Loam	
	10YR 4/2	42	7.5YR 4/7	3	C	M	Clay Loam	
8-22	10YR 3/1	45	7.5YR 4/8	10	C	M	Clay Loam	
	10YR 4/2	40	7.5YR 4/9	5	C	M	Clay Loam	

[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)
- ___ 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)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

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)
- X FAC-Neutral Test (D5)

Field Observations:

	Yes	No	Depth (inches)
Surface Water Present?	X		2
Water Table Present?	X		8
Saturation Present? (includes capillary fringe)	X		Surface

Wetland Hydrology Present? Yes X **No** ___

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

Remarks:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Dixon** Sampling Date: **7/19/2023**

Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **43**

Investigator(s): **K. Sherman, C. Booth, W. Jewell (Olsson)** Section, Township, Range: **S32 T27N R5E**

Landform (hillslope, terrace, etc.): **Slope** Local relief (concave, convex, none): **Convex**

Slope (%): **6-7** Lat: **42.275533** Long: **-96.862162** Datum: **NAD83**

Soil Map Unit Name: **7153—Kennebec silt loam, rarely flooded** NWI classification: **None**

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

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

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.

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

Remarks:
SP 43 is an upland area along the west side of Nebraska Highway 35 at Wakefield Bore Point 105. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5')			
1. *Digitaria sanguinalis*	65	X	FACU
2. *Portulaca oleracea*	20	X	FACU
3. *Ipomoea purpurea*	15		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	100		
Woody Vine Stratum (Plot size: 30')			
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:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(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:	0	(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.)
PP 43

SOIL

Sampling Point: 43

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-22	10YR 3/1	100					Loam	

[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)
- ___ 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)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

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:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Dixon** Sampling Date: **7/19/2023**
Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **44**
Investigator(s): **K. Sherman, C. Booth, W. Jewell (Olsson)** Section, Township, Range: **S32 T27N R5E**
Landform (hillslope, terrace, etc.): **Slope** Local relief (concave, convex, none): **Convex**
Slope (%): **1-2** Lat: **42.273491** Long: **-96.871353** Datum: **NAD83**
Soil Map Unit Name: **6603—Alcester silty clay loam, 2 to 6 percent slopes** NWI classification: **None**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
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.

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

Remarks:
SP 44 is an upland area located adjacent to a gravel road (West 1st Avenue) at Wakefield Bore Point 106. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Morus rubra*	3	X	FACU
2. *Gleditsia triacanthos*	2	X	FACU
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Portulaca oleracea*	75	X	FACU
2. *Taraxacum officinale*	10		FACU
3. *Trifolium repens*	10		FACU
4. *Rumex crispus*	5		FAC
5.			
6.			
7.			
8.			
9.			
10.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
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: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (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:	0	(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.)
PP 44

SOIL

Sampling Point: 44

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR3/1	100					Loam	

[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)
__ 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)
__ Dark Surface (S7)
__ Iron-Manganese Masses (F12)
__ Very Shallow Dark Surface (TF12)
__ Other (Explain in Remarks)

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

Restrictive Layer (if observed):
Type: Gravel
Depth (inches): 2

Hydric Soil Present? Yes ____ **No** X

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)	

Wetland Hydrology Present? Yes ____ **No** X

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

Remarks:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Dixon** Sampling Date: **7/19/2023**
Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **45**
Investigator(s): **K. Sherman, C. Booth, W. Jewell (Olsson)** Section, Township, Range: **S32 T27N R5E**
Landform (hillslope, terrace, etc.): **Gravel Lot** Local relief (concave, convex, none): **None**
Slope (%): **0-1** Lat: **42.273151** Long: **-96.873848** Datum: **NAD83**
Soil Map Unit Name: **6603—Alcester silty clay loam, 2 to 6 percent slopes** NWI classification: **None**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks)
Are Vegetation X , Soil X , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
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.

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

Remarks:
SP 45 is an upland area within a gravel parking lot at Wakefield Bore Point 107. A soil sample cannot be taken at this location due to the presence of gravel. Although vegetation is not present in this area, it is unlikely dominant hydrophytic vegetation would be present due to the lack of sufficient wetland hydrology. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover			
Woody Vine Stratum (Plot size: 30')			
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: 0 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (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:	0	(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 -

Remarks: (Include photo numbers here or on a separate sheet.)
PP 45

SOIL

Sampling Point: 45

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks

[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)
__ 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)
__ Dark Surface (S7)
__ Iron-Manganese Masses (F12)
__ Very Shallow Dark Surface (TF12)
__ Other (Explain in Remarks)

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

Restrictive Layer (if observed):
Type: Gravel
Depth (inches): Surface

Hydric Soil Present? Yes - No -

Remarks:
A restrictive layer of gravel is present at the surface and a soil pit cannot be taken. Due to the lack of dominant hydrophytic vegetation and sufficient wetland hydrology, it is assumed the soil is non-hydric.

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:

Wetland Determination Data Form - Midwest Region

Project/Site:	Winnebago Tribe Broadband Connectivity Project	City/County:	Dakota	Sampling Date:	7/26/2023
Applicant/Owner:	Winnebago Tribe of Nebraska	State:	NE	Sampling Point:	46
Investigator(s):	K. Sherman, K. Gaston (Olsson)			Section, Township, Range:	S27 T29N R9E
Landform (hillslope, terrace, etc.):	Pasture	Local relief (concave, convex, none):	Convex		
Slope (%): 2-3	Lat: 42.461777	Long:	-96.384699	Datum:	NAD83
Soil Map Unit Name:	7880—Onawa silty clay, occasionally flooded			NWI classification:	None

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

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

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.

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

Remarks:
SP 46 documents an upland area within a pasture at the western bore point of the North Bore Site. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Taraxacum officinale*	20	X	FACU
2. *Poa pratensis*	20	X	FAC
3. *Digitaria sanguinalis*	20	X	FACU
4. *Convolvulus arvensis*	10		UPL
5. *Bromus inermis*	10		UPL
6. *Melilotus officinalis*	10		UPL
7. *Ambrosia artemisiifolia*	10		FACU
8.			
9.			
10.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
		= 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:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	33	(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:	0 (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.)
PP 46

SOIL

Sampling Point: 46

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 4/3	100					Silt Loam	
7-9	10YR 3/2	100					Silt Loam	
9-25	10YR 4/3	100					Silt Loam	

[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)
- ___ 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)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

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:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Woodbury** Sampling Date: **7/12/2023**
Applicant/Owner: **Winnebago Tribe of Nebraska** State: **IA** Sampling Point: **47**
Investigator(s): **K. Davenport, C. Booth, K. Sherman (Olsson)** Section, Township, Range: **S26 T29N R9E**
Landform (hillslope, terrace, etc.): **Slope** Local relief (concave, convex, none): **Convex**
Slope (%): **2-3** Lat: **42.461589** Long: **-96.375634** Datum: **NAD83**
Soil Map Unit Name: **1E3—Ida silt loam, 14 to 20 percent slopes, severely eroded** NWI classification: **None**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
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
Hydric Soil Present?	Yes ___	No X
Wetland Hydrology Present?	Yes ___	No X

Is the Sampled Area within a Wetland? **Yes** ___ **No** X

Remarks:
SP 47 documents an upland area at the eastern bore point of the North Bore Site. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Asclepias tuberosa*	20	X	UPL
2. *Poa pratensis*	20	X	FAC
3. *Convolvulus arvensis*	15	X	UPL
4. *Brassica rapa*	10	X	UPL
5. *Digitaria sanguinalis*	10		FACU
6. *Ambrosia artemisiifolia*	8		FACU
7. *Taraxacum officinale*	5		FACU
8. *Lotus corniculatus*	5		FACU
9. *Asclepias syriaca*	5		FACU
10. *Trifolium pratense*	2		FACU
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
		= 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:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	25	(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.)
PP 47a and 47b

SOIL

Sampling Point: 47

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/3	70					Loam	
	10YR 2/1	30					Loam	
6-18	10YR 4/3	80					Loam	
	10YR 3/1	20					Loam	

[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)
- ___ 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)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

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:

Wetland Determination Data Form - Midwest Region

Project/Site:	Winnebago Tribe Broadband Connectivity Project	City/County:	Thurston	Sampling Date:	7/13/2023
Applicant/Owner:	Winnebago Tribe of Nebraska	State:	NE	Sampling Point:	48
Investigator(s):	K. Davenport, C. Booth, K. Sherman (Olsson)			Section, Township, Range:	S5 T26N R10E
Landform (hillslope, terrace, etc.):	Field	Local relief (concave, convex, none):	None		
Slope (%): 0-1	Lat: 42.236075	Long:	-96.33918	Datum:	NAD83
Soil Map Unit Name:	7880—Onawa silty clay, occasionally flooded			NWI classification:	None

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

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

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.

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

Remarks:
SP 48 is an upland area within an agricultural field at the western bore point of the South Bore Site. The area has received recent rainfall. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices. Planted corn is present at this SP; however, it is not included in the vegetation calculations. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
		= Total Cover	
Woody Vine Stratum (Plot size: 30')			
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:	0	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(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:	0 (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 -

Remarks: (Include photo numbers here or on a separate sheet.)
PP 48

SOIL

Sampling Point: 48

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-30	10YR 3/2	100					Clay Loam	

[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)
- ___ 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)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

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:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project**	City/County: **Woodbury**		Sampling Date: **7/13/2023**
Applicant/Owner: **Winnebago Tribe of Nebraska**		State: **IA**	Sampling Point: **49**
Investigator(s): **K. Davenport, C. Booth, K. Sherman (Olsson)**			Section, Township, Range: **S5 T26N R10E**
Landform (hillslope, terrace, etc.): **Field**	Local relief (concave, convex, none): **None**		
Slope (%): **0-1** Lat: **42.229670**	Long: **-96.322075**		Datum: **NAD83**
Soil Map Unit Name: **1237B—Sarpy loamy fine sand, 2 to 5 percent slopes, occasionally flooded**			NWI classification: **None**

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

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

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
Hydric Soil Present?	Yes ___	No X
Wetland Hydrology Present?	Yes ___	No X

Is the Sampled Area within a Wetland? **Yes** ___ **No** X

Remarks:
SP 49 is an upland area located in a grassland at the eastern bore point of the South Bore Site. Climatic conditions are not typical at this site due to recent heavy rainfall events.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Bromus inermis*	30	X	FACU
2. *Solidago missouriensis*	25	X	UPL
3. *Verbena stricta*	20	X	UPL
4. *Portulaca oleracea*	10		FACU
5. *Cornus drummondii*	10		FAC
6. *Asclepias syriaca*	5		FACU
7.			
8.			
9.			
10.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
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:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(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.)
PP 49

SOIL

Sampling Point: 49

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-22	10YR 3/2						Sandy Loam	

[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)
_ 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)
_ Dark Surface (S7)
_ Iron-Manganese Masses (F12)
_ Very Shallow Dark Surface (TF12)
_ 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:

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:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Emerson/Thurston** Sampling Date: **11/8/2023**
Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **50**
Investigator(s): **K. Sherman (Olsson)** Section, Township, Range: **S12 T26N R8E**
Landform (hillslope, terrace, etc.): **Slope** Local relief (concave, convex, none): **None**
Slope (%): **2** Lat: **42.245670** Long: **-96.471403** Datum: **NAD83**
Soil Map Unit Name: **8079- Monona silt loam, 6 to 11 percent slopes, eroded** NWI classification: **None**
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present Yes X No ___
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.

	Yes	No
Hydrophytic Vegetation Present?		X
Hydric Soil Present?	X	
Wetland Hydrology Present?	X	

Is the Sampled Area within a Wetland? **Yes** X **No** ___

Remarks:
Wetland 50 is a PEMA/PEMC wetland located at the potential site for the Central Office. Although hydrophytic vegetatio was not observed, this area is still considered a wetland having met the criteria for hydric soils and wetland hydrology.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Hordeum jubatum*	30	X	FAC
2. *Medicago sativa*	30	X	FACU
3. *Trifolium repens*	20	X	FACU
4. *Taraxacum officinale*	20	X	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
		= 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:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	25	(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:	0	(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.)
PP 52

SOIL

Sampling Point: 50

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/2	80	10YR 4/6	5	C	M	CL	
	10YR 2/1	15						
6-12	10YR 4/2	100					CL	

[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)
- ___ 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[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

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)
- X 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:

	Yes	No	Depth (inches)
Surface Water Present?		X	
Water Table Present?		X	
Saturation Present? (includes capillary fringe)		X	

Wetland Hydrology Present? Yes X **No** ___

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

Remarks:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Emerson/Thurston** Sampling Date: **11/8/2023**

Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **51**

Investigator(s): **K. Sherman (Olsson)** Section, Township, Range: **S12 T26N R8E**

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

Slope (%): **0** Lat: **42.245722** Long: **-96.471563** Datum: **NAD83**

Soil Map Unit Name: **8079- Monona silt loam, 6 to 11 percent slopes, eroded** NWI classification: **None**

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

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

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.

	Yes	No
Hydrophytic Vegetation Present?		X
Hydric Soil Present?	-	-
Wetland Hydrology Present?		X

Is the Sampled Area within a Wetland? **Yes** ___ **No** X

Remarks:
Upland outpoint for Wetland 50 at the Central Office location.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5')			
1. *Trifolium repens*	30	X	FACU
2. *Taraxacum officinale*	30	X	FACU
3. *Hordeum jubatum*	20	X	FAC
4. *Setaria viridis*	20	X	UPL
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	100		
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
= 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: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (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:	0	(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.)
PP 53

SOIL

Sampling Point: 51

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks

[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)
- _ 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)
- _ Dark Surface (S7)
- _ Iron-Manganese Masses (F12)
- _ Very Shallow Dark Surface (TF12)
- _ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Concentrete

Depth (inches): Surface

Hydric Soil Present? Yes - **No** -

Remarks:
A restrictive layer of concrete is present at the surface, and a soil pit cannot be taken. Due to the lack of sufficient hydrophytic vegetation and wetland hydrology, it is assumed soils are non-hydric.

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:

	Yes	No	Depth (inches)
Surface Water Present?		X	
Water Table Present?		X	
Saturation Present? (includes capillary fringe)		X	

Wetland Hydrology Present? Yes ___ **No** X

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

Remarks:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project** City/County: **Emerson/Thurston** Sampling Date: **11/8/2023**

Applicant/Owner: **Winnebago Tribe of Nebraska** State: **NE** Sampling Point: **52**

Investigator(s): **K. Sherman (Olsson)** Section, Township, Range: **S12 T26N R8E**

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

Slope (%): **0** Lat: **42.235421** Long: **-96.472638** Datum: **NAD83**

Soil Map Unit Name: **6603- Alcester silty clay loam, 2 to 6 percent slopes** NWI classification: **None**

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

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

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.

	Yes	No
Hydrophytic Vegetation Present?		X
Hydric Soil Present?	-	-
Wetland Hydrology Present?		X

Is the Sampled Area within a Wetland? **Yes** ___ **No** X

Remarks:
SP 52 is an upland area located at the alternative location for the Central Office Site. A soil sample could not be taken since the area was predominantly gravel/parking lot.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5')			
1. *Trifolium repens*	3		FACU
2. *Taraxacum officinale*	3		UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	6		
Woody Vine Stratum (Plot size: 30')			
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:	0	(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:	0 (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.)
PP 51, 51a

SOIL

Sampling Point: 52

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks

[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)
- 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)
- Dark Surface (S7)
- Iron-Manganese Masses (F12)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Concrete

Depth (inches): Surface

Hydric Soil Present? Yes - **No** -

Remarks:

A restrictive layer of gravel is present at the surface, and a soil pit cannot be taken. Due to the lack of sufficient hydrophytic vegetation and wetland hydrology, it is assumed soils are non-hydric.

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:

Wetland Determination Data Form - Midwest Region

Project/Site: **Winnebago Tribe Broadband Connectivity Project**	City/County: **Emerson/Thurston**		Sampling Date: **11/8/2023**
Applicant/Owner: **Winnebago Tribe of Nebraska**		State: **NE**	Sampling Point: **53**
Investigator(s): **K. Sherman (Olsson)**			Section, Township, Range: **S42 T27N R6E**
Landform (hillslope, terrace, etc.): **Hillslope**	Local relief (concave, convex, none): **Convex**		
Slope (%): **2** Lat: **42.277056**	Long: **-96.72649**		Datum: **NAD83**
Soil Map Unit Name: **6750- Nora silt loam, 11 to 17 percent slopes, eroded**			NWI classification: **None**

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

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

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.

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

Remarks:
SP 53 is an upland area located on a slope at the Emerson Office Site.

VEGETATION - Use scientific names of plants.

Stratum / Species	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5')			
1. *Poa pratensis*	40	X	FAC
2. *Digitaria sanguinalis*	40	X	UPL
3. *Trifolium repens*	20	X	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	100		
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
= 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:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	33	(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:	0	(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.)
PP 50, 50a

SOIL

Sampling Point: 53

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 3/3	100					Silty Loam	

[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)
_ 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)
_ Dark Surface (S7)
_ Iron-Manganese Masses (F12)
_ Very Shallow Dark Surface (TF12)
_ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Concrete
Depth (inches): Surface

Hydric Soil Present? **Yes** - **No** -

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)	

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

APPENDIX D

Photo Log

PHOTO LOG

<table>
<tr><td>Project Name:
Winnebago Tribe Broadband Connectivity Project</td><td>Site Location:
Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.</td><td>Project No.
021-05175</td></tr>
<tr><td>Photo: 1

Direction Photo Taken: North

Description:
Sample Point (SP) 1 is an upland area in a pasture in Staging Area A. The National Wetlands Inventory (NWI) and National Hydrography Dataset (NHD) depict this area as a riverine and stream channel, respectively. The area lacks all three wetland indicators, a defined bed and bank, and ordinary high-water mark (OHWM) and is not a wetland or stream channel.</td><td colspan="2"></td></tr>
<tr><td>Photo: 2

Direction Photo Taken: South

Description:
SP 2 is an upland area in an agricultural pasture that slopes north in Staging Area A. The NWI and NHD depict this area as a riverine and stream channel, respectively; however, the area lacks a defined bed and bank and OHWM and is not a stream channel. Although hydric soil is present, the area lacks dominant hydrophytic vegetation and sufficient wetland hydrology and is upland.</td><td colspan="2"></td></tr>
</table>

PHOTO LOG

Project Name: Winnebago Tribe Broadband Connectivity Project	Site Location: Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.	Project No. 021-05175
Photo: 3 Direction Photo Taken: Northeast Description: SP 3 is an upland area located in an agricultural pasture in Staging Area A. This area was identified during the Climates Analysis for Wetlands Tables (WETS Tables) analysis as a potential wetland. Although this area contains hydric soil, it lacks dominant hydrophytic vegetation and sufficient wetland hydrology and is upland.		
Photo: 4a Direction Photo Taken: Northeast Description: Wetland 4 is a Palustrine Emergent Temporarily Flooded/Seasonally Flooded (PEMA/C) wetland fringe along the southern bank of Channel 4, an intermittent channel, within Staging Area A. Channel 4 is approximately two feet wide at the OHWM and flows west to east across Staging Area A. This area was identified during the WETS Tables analysis as a potential wetland. The NWI and NHD depict this area as a riverine and stream channel, respectively.		

PHOTO LOG

Project Name: Winnebago Tribe Broadband Connectivity Project	**Site Location:** Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.	**Project No.** 021-05175
Photo: 4b Direction Photo Taken: East Description: View of Channel 4 dominated by reed canary grass. Channel 4 has an OHWM of two feet.		
Photo: 5 Direction Photo Taken: East Description: SP 5 is an upland outpoint for Wetland 4 (PEMA/C) in Staging Area A. This area was identified during the WETS Tables analysis as a potential wetland; however, the area lacks all three wetland indicators.		

PHOTO LOG

<table>
<tr><td>Project Name:
Winnebago Tribe Broadband Connectivity Project</td><td>Site Location:
Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.</td><td>Project No.
021-05175</td></tr>
<tr><td>Photo: 6

Direction Photo Taken: Southeast

Description:
Wetland 6 is a PEMA/C wetland fringe along the southern bank of Channel 4, an intermittent channel, within Staging Area A. Channel 4 is approximately two feet wide at the OHWM and flows west and east across Staging Area A. This area was identified during the WETS Tables analysis as a potential wetland. The NWI and NHD depict this area as a riverine and stream channel, respectively.</td><td colspan="2"></td></tr>
<tr><td>Photo: 7

Direction Photo Taken: South

Description:
SP 7 is an upland outpoint for Wetland 6 (PEMA/C) within a grassy field abutting the northern edge of the wetland in Staging Area A.</td><td colspan="2"></td></tr>
</table>

PHOTO LOG

Project Name: Winnebago Tribe Broadband Connectivity Project	Site Location: Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.	Project No. 021-05175
Photo: 8 Direction Photo Taken: Northeast Description: SP 8 documents an upland area located within a depression along the western edge of Staging Area A.		
Photo: 9 Direction Photo Taken: West Description: SP 9 is an upland area along the southern boundary of Staging Area B. This area is depicted by the NHD as a stream channel; however, this area lacks a defined bed and bank and OHWM and is not a stream channel. Although the area contains hydric soil, the area lacks dominant hydrophytic vegetation and sufficient wetland hydrology and is upland.		

PHOTO LOG

Project Name: Winnebago Tribe Broadband Connectivity Project	Site Location: Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.	Project No. 021-05175
Photo: 10 Direction Photo Taken: South Description: SP 10 is an upland area in an agricultural field planted with corn in Staging Area B. This area was identified during the WETS Tables analysis as a potential wetland; however, the area lacks hydric soil and sufficient wetland hydrology is upland.		
Photo: 11 Direction Photo Taken: North Description: SP 11 is an upland area in an abandoned agricultural field in Staging Area C. Corn is present at this SP; however, it is not included in the vegetation calculations. This area was identified during the WETS Tables analysis as a potential wetland; however, the area lacks all three wetland indicators.		

PHOTO LOG

Project Name: Winnebago Tribe Broadband Connectivity Project	Site Location: Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.	Project No. 021-05175
Photo: 12 Direction Photo Taken: North Description: SP 12 is an upland area located within an agricultural field in Staging Area D. This area was identified during the WETS Tables analysis as a potential wetland. Although this area contains hydric soil, it lacks dominant hydrophytic vegetation and sufficient wetland hydrology and is upland.		
Photo: 13 Direction Photo Taken: North Description: SP 13 is an upland area located within an agricultural field in Staging Area D. This area was identified during the WETS Tables analysis as a potential wetland. Although this area contains hydric soil, it lacks dominant hydrophytic vegetation and sufficient wetland hydrology and is upland.		

PHOTO LOG

Project Name: Winnebago Tribe Broadband Connectivity Project	Site Location: Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.	Project No. 021-05175
Photo: 14 Direction Photo Taken: North Description: SP 14 is an upland area located within an agricultural field in Staging Area D. This area was identified during the WETS Tables analysis as a potential wetland; however, the area lacks all three wetland indicators.		
Photo: 15 Direction Photo Taken: North Description: SP 15 is an upland area located at the toe of a slope along the edge of an agricultural field in Staging Area D. Although this area contains hydric soil, it lacks dominant hydrophytic vegetation and sufficient wetland hydrology and is upland.		

PHOTO LOG

Project Name: Winnebago Tribe Broadband Connectivity Project	Site Location: Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.	Project No. 021-05175
Photo: 16 Direction Photo Taken: Southwest Description: Wetland 16 is a PEMA/C wetland within an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland.		
Photo: 17 Direction Photo Taken: North Description: Wetland 17 is a PEMA/C wetland within an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the presence of hydric soils and wetland hydrology indicators, it is likely hydrophytic vegetation would be present in the absence of farming practices.		

Project Name: Winnebago Tribe Broadband Connectivity Project	**Site Location:** Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.	**Project No.** 021-05175
Photo: 18 Direction Photo Taken: East Description: Wetland 18 is a PEMA/C wetland within an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the presence of hydric soils and wetland hydrology indicators, it is likely hydrophytic vegetation would be present in the absence of farming practices.		
Photo: 19 Direction Photo Taken: North Description: SP 19 is an upland outpoint for to Wetlands 16, 17, and 18 located in an agricultural field in Staging Area E. The area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil, it is unlikely hydrophytic vegetation would be present in the absence of farming practices.		

PHOTO LOG

Project Name: Winnebago Tribe Broadband Connectivity Project	Site Location: Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.	Project No. 021-05175
Photo: 20 Direction Photo Taken: East Description: SP 20 is an upland area located within an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Although this area contains hydric soil, it lacks dominant hydrophytic vegetation and sufficient wetland hydrology and is upland.		
Photo: 21 Direction Photo Taken: East Description: SP 21 is an upland area located within an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland; however, the area lacks all three wetland indicators and is upland.		

PHOTO LOG

Project Name: Winnebago Tribe Broadband Connectivity Project	Site Location: Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.	Project No. 021-05175
Photo: 22 Direction Photo Taken: West Description: SP 22 is an upland area located within an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices.		
Photo: 23 Direction Photo Taken: Southwest Description: Wetland 23 is a PEMA/C wetland located within an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland.		

PHOTO LOG

Project Name: Winnebago Tribe Broadband Connectivity Project	**Site Location:** Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.	**Project No.** 021-05175
Photo: 24 Direction Photo Taken: East Description: SP 24 is the upland outpoint for Wetland 23 (PEMA/C) and Wetland 25 (PEMA/C) located in an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices.		
Photo: 25 Direction Photo Taken: Southwest Description: Wetland 25 is a PEMA/C wetland located in an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland.		

PHOTO LOG

Project Name: Winnebago Tribe Broadband Connectivity Project	Site Location: Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.	Project No. 021-05175
Photo: 26 Direction Photo Taken: Southwest Description: SP 26 is an upland area located in an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices.		
Photo: 27 Direction Photo Taken: East Description: SP 27 is an upland area located within an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices.		

PHOTO LOG

Project Name: Winnebago Tribe Broadband Connectivity Project	**Site Location:** Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.	**Project No.** 021-05175

Photo: 28

Direction Photo Taken: West

Description:
SP 28 is an upland area located within an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices.

Photo: 29

Direction Photo Taken: East

Description:
SP 29 is an upland area located within an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices.

PHOTO LOG

Project Name: Winnebago Tribe Broadband Connectivity Project	Site Location: Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.	Project No. 021-05175
Photo:30 Direction Photo Taken: South Description: SP 30 is an upland area within an agricultural field in Staging Area E. This area is depicted by the NWI and NHD as a riverine and stream channel, respectively; however, the area lacks a defined bed and bank and OHWM and is not a wetland or stream channel. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices.		
Photo: 31 Direction Photo Taken: West Description: SP 31 is an upland area within an agricultural field planted with corn in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices.		

Project Name: Winnebago Tribe Broadband Connectivity Project	**Site Location:** Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.	**Project No.** 021-05175
Photo: 32 Direction Photo Taken: Southwest Description: SP 32 is an upland area within an agricultural field planted with corn in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices.		
Photo: 33 Direction Photo Taken: Northwest Description: SP 33 is an upland area located within an agricultural field in Staging Area E. This area was identified during the WETS Tables analysis as a potential wetland. Although this area contains hydric soil, it lacks dominant hydrophytic vegetation and sufficient wetland hydrology and is upland.		

PHOTO LOG

Project Name: Winnebago Tribe Broadband Connectivity Project	Site Location: Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.	Project No. 021-05175
Photo: 34 Direction Photo Taken: Southwest Description: SP 34 is an upland area located within an agricultural field in Staging Area F. This area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the lack of sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices.		
Photo: 35 Direction Photo Taken: South Description: SP 35 is an upland area located within an agricultural field in Staging Area F. This area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices.		

PHOTO LOG

Project Name: Winnebago Tribe Broadband Connectivity Project	**Site Location:** Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.	**Project No.** 021-05175
Photo: 36 Direction Photo Taken: Northeast Description: SP 36 is an upland area within an agricultural field in Staging Area F. This area was identified during the WETS Tables analysis as a potential wetland. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices.		
Photo: 37 Direction Photo Taken: Northwest Description: SP 37 is an upland area located within an agricultural field in Staging Area F. The NWI and NHD depict this area as a riverine habitat and stream channel, respectively; however, the area lacks a defined bed and bank and OHWM and is not a wetland or stream channel. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices.		

PHOTO LOG

Project Name: Winnebago Tribe Broadband Connectivity Project	Site Location: Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.	Project No. 021-05175
Photo: 38 Direction Photo Taken: Southwest Description: SP 38 is an upland area located on a slope north of 858th Road at Wakefield Bore Point 101.		
Photo: 39 Direction Photo Taken: West Description: SP 39 is an upland area located within a ditch south of 858th Road at Wakefield Bore Point 102.		

PHOTO LOG

<table>
<tr><td>Project Name:
Winnebago Tribe Broadband Connectivity Project</td><td>Site Location:
Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.</td><td>Project No.
021-05175</td></tr>
<tr><td>Photo: 40

Direction Photo Taken: South

Description:
SP 40 is an upland area located in a grassy field at Wakefield Bore Point 103.</td><td colspan="2"></td></tr>
<tr><td>Photo: 41

Direction Photo Taken: Southwest

Description:
SP 41 is an upland outpoint for Wetland 45 (PEMA/C) along the east side of Nebraska Highway 35 at Wakefield Bore Point 104.</td><td colspan="2"></td></tr>
</table>

PHOTO LOG

Project Name: Winnebago Tribe Broadband Connectivity Project	Site Location: Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.	Project No. 021-05175
Photo: 42 Direction Photo Taken: South Description: Wetland 42 is a PEMA/C wetland in the eastern roadside ditch of Nebraska Highway 35 at Wakefield Bore Point 104.		
Photo: 43 Direction Photo Taken: Southeast Description: SP 43 is an upland area along the west side of Nebraska Highway 35 at Wakefield Bore Point 105.		

PHOTO LOG

Project Name: Winnebago Tribe Broadband Connectivity Project	Site Location: Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.	Project No. 021-05175

Photo: 44

Direction Photo Taken: Southeast

Description:
SP 44 is an upland area located adjacent to a gravel road (West 1st Avenue) at Wakefield Bore Point 106.

Photo: 45

Direction Photo Taken: South

Description:
SP 45 is an upland area within a gravel parking lot at Wakefield Bore Point 107. A soil sample cannot be taken at this location due to the presence of gravel. Although vegetation is not present in this area, it is unlikely dominant hydrophytic vegetation would be present due to the lack of sufficient wetland hydrology.

PHOTO LOG

<table>
<tr><td>Project Name:
Winnebago Tribe Broadband Connectivity Project</td><td>Site Location:
Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.</td><td>Project No.
021-05175</td></tr>
<tr><td>Photo: 46

Direction Photo Taken: Northwest

Description:
SP 46 documents an upland area within a pasture at the western bore point of the North Bore Site.</td><td colspan="2"></td></tr>
<tr><td>Photo: 47a

Direction Photo Taken: North

Description:
SP 47 documents an upland area at the eastern bore point of the North Bore Site.</td><td colspan="2"></td></tr>
</table>

PHOTO LOG

Project Name: Winnebago Tribe Broadband Connectivity Project	**Site Location:** Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.	**Project No.** 021-05175
Photo: 47b Direction Photo Taken: South Description: View of the area north of the eastern bore point of the North Bore Site.		
Photo: 48 Direction Photo Taken: North Description: SP 48 is an upland area within an agricultural field at the western bore point of the South Bore Site. The area has received recent rainfall. Vegetation is not present at this SP due to farming practices; however, with the lack of hydric soil and sufficient wetland hydrology, it is unlikely hydrophytic vegetation would be present in the absence of farming practices.		

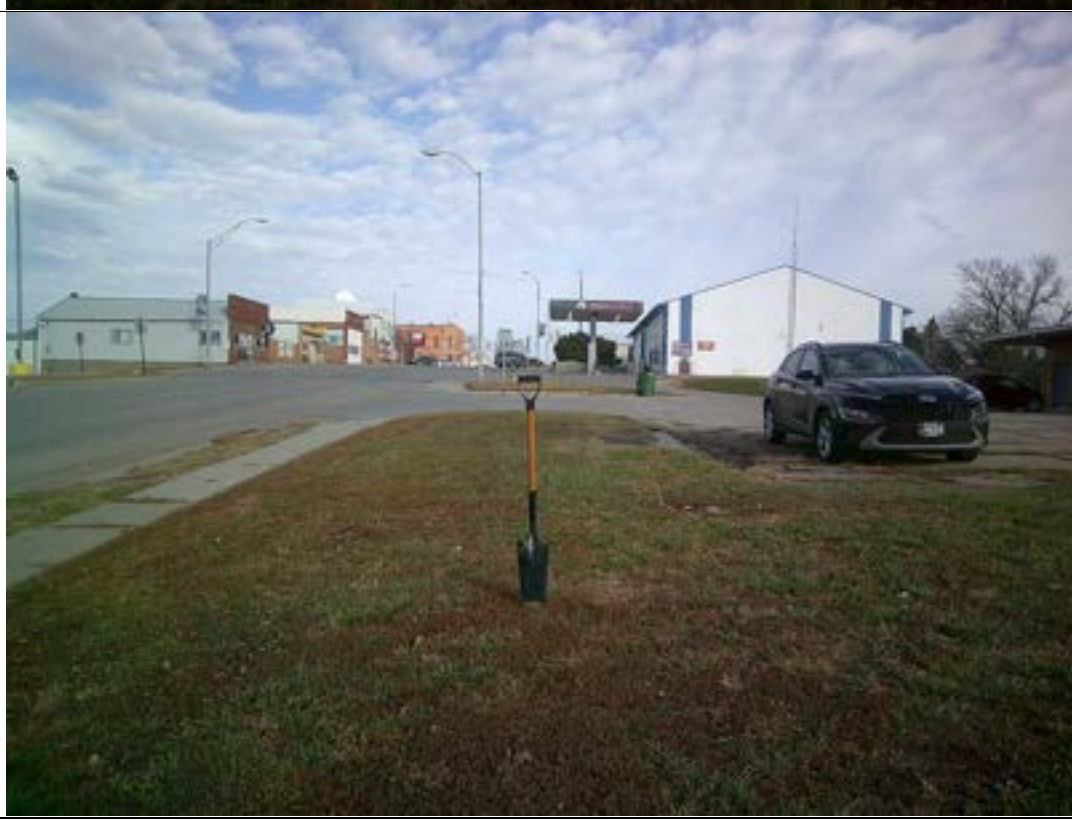
PHOTO LOG

Project Name: Winnebago Tribe Broadband Connectivity Project	**Site Location:** Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.	**Project No.** 021-05175
Photo: 49 Direction Photo Taken: Southeast Description: SP 49 is an upland area located in a grassland at the eastern bore point of the South Bore Site.		
Photo: 50 Direction Photo Taken: East Description: Wetland 50 is a PEMA/C wetland located at the Central Office Site. Dominant hydrophytic vegetation was not observed, but the area had hydric soils and wetland hydrology.		

PHOTO LOG

Project Name: Winnebago Tribe Broadband Connectivity Project	**Site Location:** Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.	**Project No.** 021-05175
Photo: 51 Direction Photo Taken: Northeast Description: SP 51 is an upland outpoint for Wetland 50 (PEMA/C) within the Central Office Site.		
Photo: 52 Direction Photo Taken: Northeast Description: SP 52 is located at the alternative location for the Central Office. It was within a gravel parking lot and a soil pit could not be taken.		

PHOTO LOG

Project Name: Winnebago Tribe Broadband Connectivity Project	Site Location: Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa.	Project No. 021-05175
Photo: 53a Direction Photo Taken: South Description: SP 53 is an upland area located on a slope at the Emerson Office Site. This area contains non-hydrophytic vegetation Hydric soils and wetland hydrology were not observed.		
Photo: 53b Direction Photo Taken: North Description: View of the Emerson Office Site facing north.		

WINNEBAGO TRIBE BROADBAND CONNECTIVITY PROJECT

Dakota, Dixon, Thurston, and Wayne Counties, Nebraska and Woodbury County, Iowa

December 2023

Olsson Project No. 021-05175

United States Department of Agriculture

USDA NRCS
Natural Resources Conservation Service
Nebraska State Office
Federal Building, Room 152
100 Centennial Mall North
Lincoln, NE 68508-3866
(402) 437-5300 http://www.ne.nrcs.usda.gov

Subject: LNU – Farmland Protection
Winnebago Tribe Broadband Connectivity Project
NEPA/FPPA Evaluation
Thurston County, Nebraska

Date: September 21, 2023

To: Olsson Associates
Attn: Kari Sherman (ksherman@olsson.com)

File Code: 310

We have reviewed the information provided in your correspondence dated August 24, 2023, concerning the proposed broadband connectivity project located in Thurston County, Nebraska. This review is part of the National Environmental Policy Act (NEPA) evaluation for the National Telecommunications and Information Administration. We have evaluated the proposed site as required by the Farmland Protection Policy Act (FPPA).

The purpose of the Farmland Protection Policy act is to minimize the permanent and irreversible conversion of important farmland into nonagricultural uses. The project as outlined at this time involves temporary staging areas which will not permanently convert the farmland and the areas of impact will revert to agricultural use after construction in completed. Due to this reason, the proposed project is exempt from provisions of FPPA and no further consideration for protection is necessary.

If the project changes and there will be permanent farmland conversion, please provide our office with a map of the project footprint and a brief project description and we will evaluate the study area as required by the FPPA.

If you have further questions, please contact Elizabeth Gray at 402.437.4068 or by email at Elizabeth.gray@usda.gov (preferred).

Sincerely,

ELIZABETH GRAY Digitally signed by ELIZABETH GRAY
Date: 2023.09.21 11:35:58 -05'00'

ELIZABETH GRAY
USDA-NRCS Nebraska Assistant State Soil Scientist

Attachment: NA

Helping People Help the Land
USDA is an equal opportunity provider, employer, and lender.

Appendix D

U.S. Fish and Wildlife Service (USFWS)
Section 7 Compliance Documentation

August 24, 2023

Mr. Jeff Runge
U. S. Fish and Wildlife Service
9325 South Alda Road, Suite B
Wood River, NE 68883

RE: Winnebago Tribe of Nebraska Broadband Project
Project code: 2023-0119474

Dear Mr. Runge:

Olsson, Inc. (Olsson), on behalf of the Winnebago Tribe of Nebraska in cooperation with the National Telecommunications and Information Administration (NTIA), is in the process of performing an environmental review as the proposed project will use federal funds by way of a federal grant. This includes advance coordination with applicable agencies to maintain compliance with appropriate federal and state regulations. The proposed project is to deploy a broadband infrastructure network on the Winnebago Reservation and in the adjacent communities. The proposed action involves the construction of a multi-conduit, underground Fiber to the Premises system. In total, approximately 235 miles of new fiber-optic cable would be buried within protective conduit along existing road right-of-way and under the Missouri River in the project area. The buried fiber optic line installation, which consists of the telecommunications cable and its protective conduit, would be performed using vibratory plowing and trenching construction techniques along roadways, and a directional boring machine would be used to install line under waterway, road, and railroad crossings. The project location is included on Figure 1. No tree removal is expected to occur for the project.

The United States Fish and Wildlife Service's Information for Planning and Consultation (IPaC) resource list resulted in six species: four listed, one proposed, and one candidate species. The table below summarizes the listed species and our evaluation of potential project impacts on the species. A copy of the IPaC list is attached. A copy of the Nebraska Consistency Letter for the Northern Long-eared Bat Determination Key is also attached.

Common Name	Scientific Name	Status*	Habitat	Potential Impact
Mammals				
Northern Long-eared Bat	*Myotis septentrionalis*	FE, SE	During the summer, northern long-eared bats roost singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags (dead trees). Males and non-reproductive females may also roost in cooler places, like caves and mines. Northern long-eared bats seem to be flexible in selecting roosts, choosing roost trees based on suitability to retain bark or provide cavities or crevices. This bat has also been found rarely roosting in structures, like barns and sheds.	If tree removal is required, removal will occur outside the breeding season (June 1 through July 31). If removal cannot occur outside the breeding season, a survey will be completed.

Common Name	Scientific Name	Status*	Habitat	Potential Impact
Tricolored Bat	*Perimyotis subflavus*	PE	During the summer, maternity and other roosts are mainly in dead or live tree foliage. Maternity colonies may also utilize human-made structures (buildings, bridges, etc.) or tree cavities. Caves, mines, and rock crevices may be used at night roosts. Most foraging occurs in riparian areas within forested landscapes. Hibernation sites are often in caves, mines, or cavelike tunnels.	If tree removal is required, removal will occur outside the breeding season (May 1 through July 31). If removal cannot occur outside the breeding season, a survey will be completed.
Birds				
Piping Plover	*Charadrius melodus*	FT, ST	Piping plovers use wide, flat, open, sandy beaches with very little grass or other vegetation. Nesting territories often include small creeks or wetlands. Reproduction - The female lays four eggs in its small, shallow nest lined with pebbles or broken shells.	Suitable habitat is unlikely present as majority of the project would occur within ROW or agricultural fields; therefore, it is unlikely the species will be impacted by the project.
Fish				
Pallid Sturgeon	*Scaphirhynchus albus*	FE, SE	Pallid sturgeon primarily reside in the main channels of the Missouri River and Lower Mississippi River from Montana to Louisiana. Adult pallid sturgeon inhabit large, deep turbid river channels, usually in strong current over firm sand or gravel.	Suitable habitat is unlikely present as majority of the project would occur within ROW or agricultural fields; therefore, it is unlikely the species will be impacted by the project.
Clams				
Scaleshell Mussel	*Leptodea leptodon*	FE, SE	Scaleshell mussels are most likely to be found in clear, fast-moving streams and rivers with gravel or sand bottoms. They can be found within riffles or fast-moving currents. This species requires good water quality.	Suitable habitat is unlikely present as majority of the project would occur within ROW or agricultural fields; therefore, it is unlikely the species will be impacted by the project.
Insects				
Monarch Butterfly	*Danaus plexippus*	C	Monarchs live mainly in prairies, meadows, grasslands, and roadsides where there are abundant flowers and milkweed plants. As caterpillars, they feed exclusively on milkweed, which makes the monarch toxic to predators such as birds. The monarch's survival depends on this chemical defense. Adults are generalists and nectar from a variety of blooming plants.	The monarch butterfly is a candidate species for protection under the Endangered Species Act but has not been listed or proposed for listing; therefore, no regulatory

Common Name	Scientific Name	Status*	Habitat	Potential Impact
				requirements are in place for the species.

* FT= Federally Threatened, FE= Federally Endangered , ST= State Threatened, SE= State Endangered, PE= Proposed Endangered, C= Candidate

The proposed project does not represent a "major construction activity" as defined in 50 CFR 402.02. Based on a review of existing resources, NTIA believes the project would have no effect to Federally-listed or proposed threatened or endangered species. Please advise us of any concerns you may have related to possible effects of the project listed above on such species or critical habitat. Nebraska Games and Parks have also been notified.

We would appreciate a response within 30 days. If you need any further information or wish to discuss the project, please contact Kari Sherman at 402-282-4072 or ksherman@olsson.com.

Sincerely,

Kari Sherman
Natural Resources and Planning

Olsson
2111 South 67th Street, Suite 200
Omaha, NE 68106
402-282-4072
ksherman@olsson.com

Enclosures:
Location Map
IPaC Resource List
Consistency Letter for Northern Long-eared Bat Determination Key

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Nebraska Ecological Services Field Office
9325 B South Alda Rd., Ste B
Wood River, NE 68883-9565
Phone: (308) 382-6468 Fax: (308) 384-8835

In Reply Refer To: August 21, 2023
Project Code: 2023-0119474
Project Name: Winnebago Tribe of Nebraska Broadband Connectivity 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 IPaC website (https://ipac.ecosphere.fws.gov/) at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the 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: https://www.fws.gov/media/endangered-species-consultation-handbook or at our Nebraska Field Office webpage (https://www.fws.gov/office/nebraska-ecological-services/project-planning-and-review-under-endangered-species-act).

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Project Consultation Code in the header of this letter (i.e., YEAR-XXXXXXX) with any request for consultation or correspondence about your project that you submit to our office.

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Act, there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts and permitting see https://www.fws.gov/program/migratory-bird-permit

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit:

https://www.federalregister.gov/documents/2012/10/03/2012-24433/migratory-bird-conservation-executive-order-13186

Platte River System: The Platte River, its tributaries, and associated wetland habitats are resources of national importance. Due to the cumulative effect of many water depletion projects in the Platte River basin, the Service considers any direct or indirect depletion of flows from the Platte River system to be significant and will continue to further deteriorate the already stressed habitat conditions. Federal agencies must consult with the Service under section 7 of the ESA for projects in Nebraska that may lead to water depletions or have the potential to impact water quality in the Platte River system, because these actions my affect threatened and endangered species inhabiting the downstream reaches of these river systems. The federally listed species that could be impacted from Platte River water depletions include the federally endangered Whooping Crane (Grus americana), and Pallid Sturgeon (Scaphirhynchus albus); the threatened Piping Plover (Charadrius melodus) and Western Prairie Fringed Orchid (Platanthera praeclara). In general, depletions include evaporative losses and/or consumptive use of surface or groundwater within the affected basin, often characterized as diversions minus return flows. Project elements that could be associated with depletions include, but are not limited to: borrow sites, ponds, lakes, and reservoirs (e.g., for detention, recreating, irrigation, storage, stock watering, municipal storage, and power generation); hydrostatic testing of pipelines; wells; dust abatement; diversion structures; and water treatment facilities. For more information on consultation requirements for the Platte River species, please visit https://fws.gov/partner/platte-river-recovery-implementation-program

Nebraska Nongame and Endangered Species Conservation Act: Federally listed species protected under the Endangered Species Act are also state-listed under the Nebraska statute, the Nebraska Nongame and Endangered Species Conservation Act. There may be state-listed species affected by the proposed project that are not federally listed. To determine if the proposed project may affect state-listed species, the Service recommends that the project proponent contact the Nebraska Game and Parks Commission (NGPC) Planning and Program Division located at 2200 North 33rd Street Lincoln, Nebraska 68503-0370. For more information and to request an environmental review from the NGPC, visit their Environmental Review website at http://outdoornebraska.gov/environmentalreview/ for instructions and contact information.

Note: IPaC has provided all available attachments because this project is in multiple field office jurisdictions.

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:

Nebraska Ecological Services Field Office
9325 B South Alda Rd., Ste B
Wood River, NE 68883-9565
(308) 382-6468

This project's location is within the jurisdiction of multiple offices. However, only one species list document will be provided for all offices. The species and critical habitats in this document reflect the aggregation of those that fall in each of the affiliated office's jurisdiction. Other offices affiliated with the project:

Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
(309) 757-5800

PROJECT SUMMARY

Project Code: 2023-0119474
Project Name: Winnebago Tribe of Nebraska Broadband Connectivity Project
Project Type: Distribution Line - New Construction - Below Ground
Project Description: The Project would provide qualified broadband service to approximately 600 unserved Native American households, 40 unserved Native American and/or Tribal businesses, and 16 Tribal anchor institutions. In addition, the Project includes a rate stabilization program designed to provide up to a maximum payment on broadband household monthly bills to alleviate the burden felt most heavily by those in poverty and to prevent disconnection of service.
The Project will occur over the entire Winnebago Reservation.
Construction is expected to start in 2024.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.2510254,-96.57505717561948,14z

Counties: Iowa and Nebraska

ENDANGERED SPECIES ACT SPECIES

There is a total of 6 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	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened

FISHES

NAME	STATUS
Pallid Sturgeon *Scaphirhynchus albus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7162	Endangered

CLAMS

NAME	STATUS
Scaleshell Mussel *Leptodea leptodon* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5881	Endangered

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

CRITICAL HABITATS

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

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

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.

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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
American Golden-plover *Pluvialis dominica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
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.	Breeds Oct 15 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
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
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
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

NAME	BREEDING SEASON
Golden Eagle *Aquila chrysaetos* 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/1680	Breeds Jan 1 to Aug 31
Hudsonian Godwit *Limosa haemastica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
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
Marbled Godwit *Limosa fedoa* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds May 1 to Jul 31
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
Rusty Blackbird *Euphagus carolinus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Short-billed Dowitcher *Limnodromus griseus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Upland Sandpiper *Bartramia longicauda* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9294	Breeds May 1 to Aug 31
Willet *Tringa semipalmata* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 5
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

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 (|)

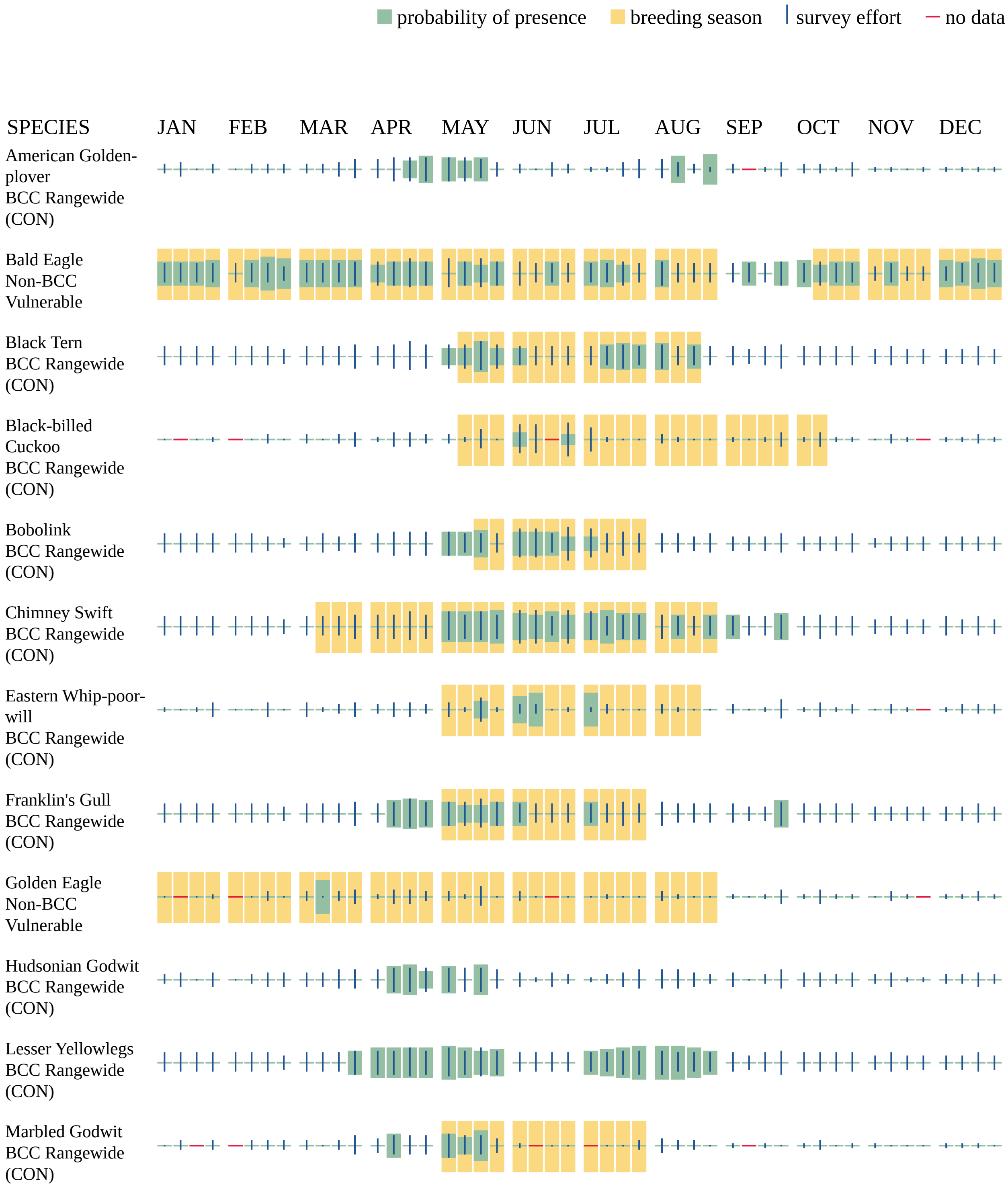
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

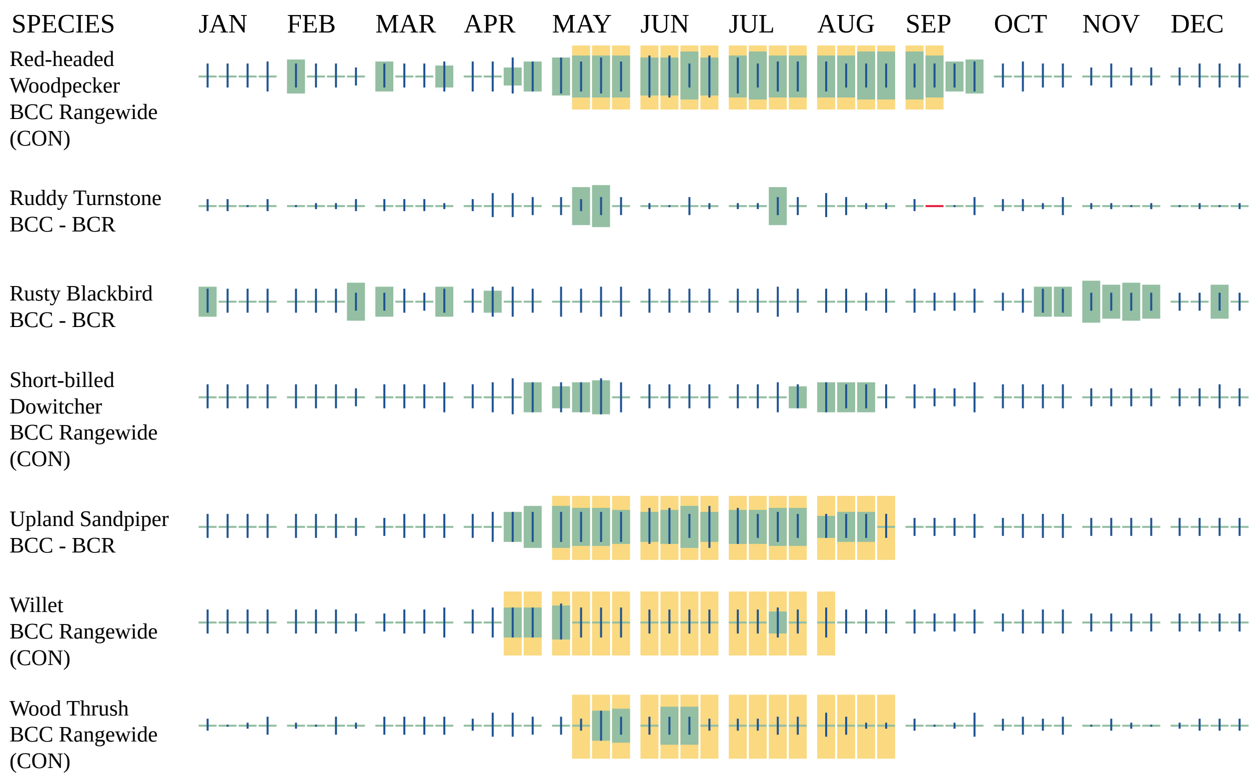
No Data (–)

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.





Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.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 list of migratory birds that potentially occur 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 Rapid Avian Information Locator (RAIL) 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 or migrating in my 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 query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. 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.

Due to your project's size, the list below may be incomplete, or the acreages reported may be inaccurate. For a full list, please contact the local U.S. Fish and Wildlife office or visit https://www.fws.gov/wetlands/data/mapper.HTML

FRESHWATER EMERGENT WETLAND

- PEM1Ch
- PEM1Ad
- PEM1Ah
- PEM1A
- PEM1F
- PEM1Cd
- PEM1Fh
- PEM1C
- PEM1Cx
- PEM1Ax

LAKE

- L1UBG
- L1UBH
- L2UBF

FRESHWATER FORESTED/SHRUB WETLAND

- PFO1C
- PFOA

RIVERINE

- R2UBH

FRESHWATER POND

- PABGx

IPAC USER CONTACT INFORMATION

Agency: Winnebago Tribe of Nebraska
Name: Kari Sherman
Address: 2111 S 67th St. Suite 200
City: Omaha
State: NE
Zip: 68106
Email ksherman@olsson.com
Phone: 4022824072

LEAD AGENCY CONTACT INFORMATION

Lead Agency: National Telecommunications and Information Administration

From:	Porath, Mark T <mark_porath@fws.gov> on behalf of Nebraskaes, FW6 <Nebraskaes@fws.gov>
Sent:	Saturday, September 2, 2023 10:41 AM
To:	Kari Sherman
Cc:	NGPC EnvReview; joy.johnson@winnebagotribe.com; jewel.parker@winnebagotribe.com
Subject:	Winnebago Tribe of Nebraska Broadband Project IPaC 2023-0094299
Attachments:	23-08-21_NRPL_Winnebago EA_TE_USFWS_Letter_Final.pdf

This Message Is From an External Sender

This message came from outside your organization. Please take care when clicking links or opening attachments. When in doubt, use the Report Phish button or contact IT to have the message analyzed.

Good morning Kari,
Based on the information you have provided our office for the above mentioned project, you have concluded "no effect" to designated critical habitat or to species that are federally listed or proposed for federal listing, on behalf of the lead federal action agency.

We appreciate you informing us of your analysis. In section 7(a)(3) of the Endangered Species Act of 1973, as amended (ESA; 16 U.S.C 1531 *et*. *seq*.), and the implementing regulations under section 7(a)(2) of the ESA, the Service is not required to review or concur with projects where "no effect" determinations have been made for all species or designated critical habitat potentially affected by a project. Therefore, we acknowledge the receipt of your "no effect" determination and recommend that you maintain your documentation and rationale in your project file.

In addition to the Endangered Species Act, all activities (federal and non-federal) are responsible for complying with the Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act (Eagle Act). Please note that this response does not authorize avian mortality for species that are protected under the MBTA or the Eagle Act. For more information regarding the Eagle Act or MBTA, and any associated resources including Service recommendations and best management practices, please visit our Nebraska Ecological Service project planning website at: https://www.fws.gov/office/nebraska-ecological-services/project-planning-and-review-under-endangered-species-act If you believe trust resources under these Acts will be affected by this activity, we recommend that you contact our office for further recommendations.

We appreciate your efforts to ensure the conservation of threatened and endangered species and other Federal trust resources.
Regards,
Mark

Mark Porath
Nebraska Project Leader/Field Supervisor
Ecological Services, Mountain-Prairie Region
U.S. Fish and Wildlife Service
Office: 308-382-6468
Cell: 308-216-2077
mark_porath@fws.gov
nebraskaes@fws.gov

Nebraska Field Office
U.S. Fish and Wildlife Service
9325 South Alda Road
Wood River, Nebraska 68883
NebraskaES@fws.gov
For a species list, visit https://ecos.fws.gov/ipac/
Office information https://www.fws.gov/nebraskaes/index.php

From: Kari Sherman <ksherman@olsson.com>
Sent: Monday, August 28, 2023 8:54 AM
To: Nebraskaes, FW6 <Nebraskaes@fws.gov>
Cc: NGPC EnvReview <ngpc.envreview@nebraska.gov>; Krista Schnepf <kschnepf@olsson.com>
Subject: [EXTERNAL] RE: Winnebago Tribe of Nebraska Broadband Project IPaC 2023-0094299

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Good morning Mark!
We have completed the IPaC review for the entire Winnebago Broadband Project.
Attached is a letter with details.
If you have any questions, please contact me.
Thanks!

Kari Sherman
Environmental
D 402.282.4072
C 402.350.8902

2111 S. 67th Street, Suite 200
Omaha, NE 68106
O 402.341.1116
olsson
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From: Porath, Mark T <mark_porath@fws.gov> **On Behalf Of** Nebraskaes, FW6
Sent: Sunday, July 16, 2023 9:53 AM
To: Kari Sherman <ksherman@olsson.com>
Cc: NGPC EnvReview <ngpc.envreview@nebraska.gov>
Subject: Winnebago Tribe of Nebraska Broadband Project IPaC 2023-0094299

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Good morning Kari,
Thank you for contacting us with a preview of your proposed project and attaching the IPaC species list. For your consideration as you develop the project's BA/BE, please remember that the two bat species (Northern Long-eared and Tricolor) are currently transitioning (e.g., uplisting, proposed) and new information will be issued later in 2023 or early 2024.

We look forward to working with you and thank you for your interest in protecting and conserving Nebraska's and our Nation's natural resources is deeply appreciated.

Regards,
Mark

Mark Porath
Nebraska Project Leader/Field Supervisor
Ecological Services, Mountain-Prairie Region
U.S. Fish and Wildlife Service
Office: 308-382-6468
Cell: 308-216-2077
mark_porath@fws.gov
nebraskaes@fws.gov

Nebraska Field Office
U.S. Fish and Wildlife Service
9325 South Alda Road
Wood River, Nebraska 68883

NebraskaES@fws.gov
For a species list, visit https://ecos.fws.gov/ipac/
Office information https://www.fws.gov/nebraskaes/index.php

From: Kari Sherman <ksherman@olsson.com>
Sent: Monday, July 10, 2023 11:51 AM
To: Nebraskaes, FW6 <Nebraskaes@fws.gov>
Cc: Krista Schnepf <kschnepf@olsson.com>; Susan Opperman <sopperman@olsson.com>
Subject: [EXTERNAL] Winnebago Tribe of Nebraska Broadband Project

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Good morning!
Attached is a request for comments on a project on the Winnebago Reservation.
If you have any questions, please reach out.
Thanks!

Kari Sherman
Environmental
D 402.282.4072
C 402.350.8902

2111 S. 67th Street, Suite 200
Omaha, NE 68106
O 402.341.1116
olsson
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August 24, 2023

U. S. Fish and Wildlife Service
1511 47th Ave
Moline, IL 61265

RE: Winnebago Tribe of Nebraska Broadband Project
Project code: 2023-0119474

To whom it may concern:

Olsson, Inc. (Olsson), on behalf of the Winnebago Tribe of Nebraska in cooperation with the National Telecommunications and Information Administration (NTIA), is in the process of performing an environmental review as the proposed project will use federal funds by way of a federal grant. This includes advance coordination with applicable agencies to maintain compliance with appropriate federal and state regulations. The proposed project is to deploy a broadband infrastructure network on the Winnebago Reservation and in the adjacent communities. The proposed action involves the construction of a multi-conduit, underground Fiber to the Premises system. In total, approximately 235 miles of new fiber-optic cable would be buried within protective conduit along existing road right-of-way and under the Missouri River in the project area. The buried fiber optic line installation, which consists of the telecommunications cable and its protective conduit, would be performed using vibratory plowing and trenching construction techniques along roadways, and a directional boring machine would be used to install line under waterway, road, and railroad crossings. The project location is included on Figure 1. No tree removal is expected to occur for the project. No tree removal is expected to occur for the project.

The United States Fish and Wildlife Service's Information for Planning and Consultation (IPaC) resource list resulted in six species: four listed, one proposed, and one candidate species. The table below summarizes the listed species and our evaluation of potential project impacts on the species. A copy of the IPaC list is attached. A copy of the Nebraska Consistency Letter for the Northern Long-eared Bat Determination Key is also attached.

Common Name	Scientific Name	Status*	Habitat	Potential Impact
Mammals				
Northern Long-eared Bat	*Myotis septentrionalis*	FE, SE	During the summer, northern long-eared bats roost singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags (dead trees). Males and non-reproductive females may also roost in cooler places, like caves and mines. Northern long-eared bats seem to be flexible in selecting roosts, choosing roost trees based on suitability to retain bark or provide cavities or crevices. This bat has also been found rarely roosting in structures, like barns and sheds.	Tree removal will not occur. If tree removal is required, removal will occur outside the breeding season (June 1 through July 31). If removal cannot occur outside the breeding season, a survey will be completed.

Common Name	Scientific Name	Status*	Habitat	Potential Impact
Tricolored Bat	*Perimyotis subflavus*	PE	During the summer, maternity and other roosts are mainly in dead or live tree foliage. Maternity colonies may also utilize human-made structures (buildings, bridges, etc.) or tree cavities. Caves, mines, and rock crevices may be used at night roosts. Most foraging occurs in riparian areas within forested landscapes. Hibernation sites are often in caves, mines, or cavelike tunnels.	Tree removal will not occur. If tree removal is required, removal will occur outside the breeding season (May 1 through July 31). If removal cannot occur outside the breeding season, a survey will be completed.
Birds				
Piping Plover	*Charadrius melodus*	FT, ST	Piping plovers use wide, flat, open, sandy beaches with very little grass or other vegetation. Nesting territories often include small creeks or wetlands. Reproduction - The female lays four eggs in its small, shallow nest lined with pebbles or broken shells.	Suitable habitat is unlikely present as majority of the project would occur within ROW or agricultural fields; therefore, it is unlikely the species will be impacted by the project.
Fish				
Pallid Sturgeon	*Scaphirhynchus albus*	FE, SE	Pallid sturgeon primarily reside in the main channels of the Missouri River and Lower Mississippi River from Montana to Louisiana. Adult pallid sturgeon inhabit large, deep turbid river channels, usually in strong current over firm sand or gravel.	Suitable habitat is unlikely present as majority of the project would occur within ROW or agricultural fields; therefore, it is unlikely the species will be impacted by the project.
Clams				
Scaleshell Mussel	*Leptodea leptodon*	FE, SE	Scaleshell mussels are most likely to be found in clear, fast-moving streams and rivers with gravel or sand bottoms. They can be found within riffles or fast-moving currents. This species requires good water quality.	Suitable habitat is unlikely present as majority of the project would occur within ROW or agricultural fields; therefore, it is unlikely the species will be impacted by the project.
Insects				
Monarch Butterfly	*Danaus plexippus*	C	Monarchs live mainly in prairies, meadows, grasslands, and roadsides where there are abundant flowers and milkweed plants. As caterpillars, they feed exclusively on milkweed, which makes the monarch toxic to predators such as birds. The monarch’s survival depends on this chemical defense.	The monarch butterfly is a candidate species for protection under the Endangered Species Act but has not been listed or proposed for listing; therefore, no

Common Name	Scientific Name	Status*	Habitat	Potential Impact
			Adults are generalists and nectar from a variety of blooming plants.	regulatory requirements are in place for the species.

* FT= Federally Threatened, FE= Federally Endangered, ST= State Threatened, SE= State Endangered, PE= Proposed Endangered, C= Candidate

The proposed project does not represent a “major construction activity” as defined in 50 CFR 402.02. Based upon a review of existing resources, NTIA believes the project would have no effect to Federally-listed or proposed threatened or endangered species. Please advise us of any concerns you may have related to possible effects of the project listed above on such species or critical habitat. Iowa Department of Natural Resources has also been notified.

We would appreciate a response within 30 days. If you need any further information or wish to discuss the Project, please contact Kari Sherman at 402-282-4072 or ksherman@olsson.com.

Sincerely,

Kari Sherman
Natural Resources and Planning

Olsson
2111 South 67th Street, Suite 200
Omaha, NE 68106
402-282-4072
ksherman@olsson.com

Enclosures:
Location Map
IPaC Resource List
Consistency Letter for Northern Long-eared Bat Determination Key

August 24, 2023

Iowa Department of Natural Resources
502 E 9th St
Des Moines, IA 50319-0034

RE: Winnebago Tribe of Nebraska Broadband Project

To whom it may concern:

Olsson, Inc. (Olsson), on behalf of the Winnebago Tribe of Nebraska in cooperation with the National Telecommunications and Information Administration (NTIA), is in the process of performing an environmental review as the proposed project will use federal funds by way of a federal grant. This includes advance coordination with applicable agencies to maintain compliance with appropriate federal and state regulations. The proposed project is to deploy a broadband infrastructure network on the Winnebago Reservation and in the adjacent communities. proposed action involves the construction of a multi-conduit, underground Fiber to the Premises system. In total, approximately 235 miles of new fiber-optic cable would be buried within protective conduit along existing road right-of-way and under the Missouri River in the project area. The buried fiber optic line installation, which consists of the telecommunications cable and its protective conduit, would be performed using vibratory plowing and trenching construction techniques along roadways, and a directional boring machine would be used to install line under waterway, road, and railroad crossings. The project location is included on Figure 1. No tree removal is expected to occur for the project. No tree removal is expected to occur for the project.

The United States Fish and Wildlife Service's Information for Planning and Consultation (IPaC) resource list resulted in six species: four listed, one proposed, and one candidate species. The table below summarizes the listed species and our evaluation of potential project impacts on the species. A copy of the IPaC list is attached.

The Iowa Department of Natural Resources Natural Areas Inventory was used to evaluate listed species for the project. This list resulted in an additional twelve species that are found within the county. The table below summarizes the species listed for the project.

Common Name	Scientific Name	Status*	Habitat	Potential Impact
Mammals				
Northern Long-eared Bat	*Myotis septentrionalis*	FE, SE	During the summer, northern long-eared bats roost singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags (dead trees). Males and non-reproductive females may also roost in cooler places, like caves and mines. Northern long-eared bats seem to be flexible in selecting roosts, choosing roost trees based on suitability to retain bark or provide cavities or crevices. This bat has also been found rarely roosting in structures, like barns and sheds.	Tree removal will not occur. If tree removal is required, removal will occur outside the breeding season (June 1 through July 31). If removal cannot occur outside the breeding season, a survey will be completed.

Common Name	Scientific Name	Status*	Habitat	Potential Impact
Tricolored Bat	*Perimyotis subflavus*	PE	During the summer, maternity and other roosts are mainly in dead or live tree foliage. Maternity colonies may also utilize human-made structures (buildings, bridges, etc.) or tree cavities. Caves, mines, and rock crevices may be used at night roosts. Most foraging occurs in riparian areas within forested landscapes. Hibernation sites are often in caves, mines, or cavelike tunnels.	Tree removal will not occur. If tree removal is required, removal will occur outside the breeding season (May 1 through July 31). If removal cannot occur outside the breeding season, a survey will be completed.
Birds				
Piping Plover	*Charadrius melodus*	FT, ST	Piping plovers use wide, flat, open, sandy beaches with very little grass or other vegetation. Nesting territories often include small creeks or wetlands. Reproduction - The female lays four eggs in its small, shallow nest lined with pebbles or broken shells.	Suitable habitat is unlikely present as majority of the project would occur within ROW or agricultural fields; therefore, it is unlikely the species will be impacted by the project.
Barn Owl	*Tyto alba*	FE	Barn owls nest and roost in dark, secluded places. They can be found within tree cavities or more commonly in old barns or abandoned buildings. They hunt in grassland habitats along field or wetland edges.	Suitable habitat is unlikely present as majority of the project would occur within ROW or agricultural fields; therefore, it is unlikely the species will be impacted by the project.
Interior Least Tern	*Sterna antillarum athaloassos*	FE	Interior least terns use dry riverine sandbars in wide, braided rivers, and along the shores of reservoirs and lakes. They can also be found on sand and gravel piles at mining operations.	Suitable habitat is unlikely present as majority of the project would occur within ROW or agricultural fields; therefore, it is unlikely the species will be impacted by the project.
Fish				
Pallid Sturgeon	*Scaphirhynchus albus*	FE, SE	Pallid sturgeon primarily reside in the main channels of the Missouri River and Lower Mississippi River from Montana to Louisiana. Adult pallid sturgeon inhabit large, deep turbid river channels, usually in strong current over firm sand or gravel.	Suitable habitat is unlikely present as majority of the project would occur within ROW or agricultural fields; therefore, it is unlikely the species will be impacted by the project.
Blacknose Shiner	*Notropis heterolepis*	ST	Blacknose shiners can be found within small streams, slow-moving rivers, or lakes with sandy bottoms.	Suitable habitat is unlikely present as majority of the project would occur within ROW or agricultural fields; therefore, it is unlikely the species will be impacted by the project.
Topeka Shiner	*Notropis topeka*	FE, ST	Topeka shiners prefer prairie streams with stable stream channels. They can also be found in off-channel oxbows with sandy or gravel bottoms. Topeka shiners need clear, clean water.	Suitable habitat is unlikely present as majority of the project would occur within ROW or agricultural fields; therefore, it is unlikely the species will be impacted by the project.

Common Name	Scientific Name	Status*	Habitat	Potential Impact
Insects				
Dakota Skipper	*Hesperia dacotae*	SE	Dakota skippers can be found within two types of prairies: moist bluestem prairie and dry, upland prairie. They prefer environments that have not been influenced by humans, including agriculture.	Suitable habitat is unlikely present as majority of the project would occur within ROW or agricultural fields; therefore, it is unlikely the species will be impacted by the project.
Powesheik Skipperling	*Oarisma powesheik*	FE, ST	Powesheik skipperlings can be found within prairie fens, grassy lake or stream margins, moist meadows, or native prairie. This species relies on unplowed, native prairies.	Suitable habitat is unlikely present as majority of the project would occur within ROW or agricultural fields; therefore, it is unlikely the species will be impacted by the project.
Monarch Butterfly	*Danaus plexippus*	C	Monarchs live mainly in prairies, meadows, grasslands, and roadsides where there are abundant flowers and milkweed plants. As caterpillars, they feed exclusively on milkweed, which makes the monarch toxic to predators such as birds. The monarch's survival depends on this chemical defense. Adults are generalists and nectar from a variety of blooming plants.	The monarch butterfly is a candidate species for protection under the Endangered Species Act but has not been listed or proposed for listing; therefore, no regulatory requirements are in place for the species.
Plants				
Bigroot Prickly-pear	*Opuntia macrorhiza*	SE	Bigroot prickly-pear can be found within dry, rocky, or sandy prairies.	Suitable habitat is unlikely present as majority of the project would occur within ROW or agricultural fields; therefore, it is unlikely the species will be impacted by the project.
Narrow-leaved Milkweed	*Asclepias stenophylla*	SE	Narrow-leaved milkweed can be found within dry prairies or in loess and gravel prairies.	Suitable habitat is unlikely present as majority of the project would occur within ROW or agricultural fields; therefore, it is unlikely the species will be impacted by the project.
Silver Buffaloberry	*Shepherdia argentea*	ST	Silver buffaloberry can be found in dry uplands and prairie woodland edges and loess bluffs.	Suitable habitat is unlikely present as majority of the project would occur within ROW or agricultural fields; therefore, it is unlikely the species will be impacted by the project.
Wooly Milkweed	*Asclepias lanuginose*	ST	Wooly milkweed can be found within sandy or rocky soils of prairies, dry upland woods, or gravelly hillside prairies.	Suitable habitat is unlikely present as majority of the project would occur within ROW or agricultural fields; therefore, it is unlikely the species will be impacted by the project.

Common Name	Scientific Name	Status*	Habitat	Potential Impact
Spring Ladies' tresses	*Spiranthes vernalis*	ST	Spring Ladies' tresses can be found in dry to moist meadows, prairies, fields, along roadsides, and occasionally in bogs.	Suitable habitat is unlikely present as majority of the project would occur within ROW or agricultural fields; therefore, it is unlikely the species will be impacted by the project.
Leathery Grape Fern	*Botrychium multifidum*	ST	Leathery grape fern can be found in open areas, sometimes at forest edges or in forest openings.	Suitable habitat is unlikely present as majority of the project would occur within ROW or agricultural fields; therefore, it is unlikely the species will be impacted by the project.

* FT= Federally Threatened, FE= Federally Endangered, ST= State Threatened, SE= State Endangered, PE-Proposed Endangered, C=Candidate

The proposed project does not represent a "major construction activity" as defined in 50 CFR 402.02. NTIA does not anticipate that the project will result in an undertaking of any State-listed or proposed threatened or endangered species. Please advise us of any concerns you may have related to possible effects of the project listed above on such species or critical habitat. USFWS has also been consulted.

We would appreciate a response within 30 days. If you need any further information or wish to discuss the Project, please contact Kari Sherman at 402-282-4072 or ksherman@olsson.com.

Sincerely,

Kari Sherman
Natural Resources and Planning

Olsson
2111 South 67th Street, Suite 200
Omaha, NE 68106
402-282-4072
ksherman@olsson.com

Enclosures:
Location Map
IPaC Resources List
Iowa Department of Natural Resources Natural Areas Inventory

IOWA DEPARTMENT OF NATURAL RESOURCES NATURAL AREAS INVENTORY

Listed Species In a County

<< Back To Query Page

WOODBURY County, IA

Summary by Species Report
Total Unique Listed Species In This County: 44

County	Common Name	Scientific Name	Class	State Status	Federal Status	Link To Species Profile
WOODBURY	Bald Eagle	Haliaeetus leucocephalus	BIRDS	S		PDF
WOODBURY	Barn Owl	Tyto alba	BIRDS	E		PDF
WOODBURY	Interior Least Tern	Sterna antillarum athalassos	BIRDS	E		
WOODBURY	Piping Plover	Charadrius melodus	BIRDS	E	T	PDF
WOODBURY	Blacknose Shiner	Notropis heterolepis	FISH	T		PDF
WOODBURY	Pallid Sturgeon	Scaphirhynchus albus	FISH	E	E	PDF
WOODBURY	Topeka Shiner	Notropis topeka	FISH	T	E	PDF
WOODBURY	Dakota Skipper	Hesperia dacotae	INSECTS	E	T	
WOODBURY	Dusted Skipper	Atrytonopsis hianna	INSECTS	S		
WOODBURY	Edwards' Hairstreak	Satyrium edwardsii	INSECTS	S		
WOODBURY	Hickory Hairstreak	Satyrium caryaevorum	INSECTS	S		
WOODBURY	Leonard's Skipper	Hesperia leonardus	INSECTS	S		
WOODBURY	Olympia Marble	Euchloe olympia	INSECTS	S		
WOODBURY	Ottoe Skipper	Hesperia ottoe	INSECTS	S		
WOODBURY	Powesheik Skipperling	Oarisma powesheik	INSECTS	T	E	
WOODBURY	Regal Fritillary	Speyeria idalia	INSECTS	S		
WOODBURY	Wild Indigo Dusky Wing	Erynnis baptisiae	INSECTS	S		
WOODBURY	Northern Long-eared Bat	Myotis septentrionalis	MAMMALS		T	
WOODBURY	Beardtongue	Penstemon albidus	PLANTS (DICOTS)	S		
WOODBURY	Bigroot Prickly-pear	Opuntia macrorhiza	PLANTS (DICOTS)	E		
WOODBURY	Black Bugbane	Cimicifuga racemosa	PLANTS (DICOTS)	S		
WOODBURY	Frost Grape	Vitis vulpina	PLANTS (DICOTS)	S		
WOODBURY	Missouri Milk-vetch	Astragalus missouriensis	PLANTS (DICOTS)	S		
WOODBURY	Narrow-leaved Milkweed	Asclepias stenophylla	PLANTS (DICOTS)	E		
WOODBURY	Silver Buffalo-berry	Shepherdia argentea	PLANTS (DICOTS)	T		
WOODBURY	Ten Petaled Mentzelia	Mentzelia decapetala	PLANTS (DICOTS)	S		
WOODBURY	Wooly Milkweed	Asclepias lanuginosa	PLANTS (DICOTS)	T		
WOODBURY	Alkali Muhly	Muhlenbergia asperifolia	PLANTS (MONOCOTS)	S		
WOODBURY	Alpine Rush	Juncus alpinus	PLANTS (MONOCOTS)	S		
WOODBURY	Blue Mud-plantain	Heteranthera limosa	PLANTS (MONOCOTS)	S		
WOODBURY	Buffalo Grass	Buchloe dactyloides	PLANTS (MONOCOTS)	S		
WOODBURY	Glomerate Sedge	Carex aggregata	PLANTS (MONOCOTS)	S		
WOODBURY	Large-leaf Pondweed	Potamogeton amplifolius	PLANTS (MONOCOTS)	S		PDF
WOODBURY	Rocky Mountain Sedge	Carex saximontana	PLANTS (MONOCOTS)	S		
WOODBURY	Sand Bluestem	Andropogon hallii	PLANTS (MONOCOTS)	S		
WOODBURY	Slender Sedge	Carex tenera	PLANTS (MONOCOTS)	S		
WOODBURY	Spear	Stipa comata	PLANTS (MONOCOTS)	S		

	Needlegrass					
WOODBURY	Spring Ladies'-tresses	Spiranthes vernalis	PLANTS (MONOCOTS)	T		
WOODBURY	Tall Millet-grass	Milium effusum	PLANTS (MONOCOTS)	S		
WOODBURY	Tumble Grass	Schedonnardus paniculatus	PLANTS (MONOCOTS)	S		
WOODBURY	Leathery Grape Fern	Botrychium multifidum	PLANTS (PTERIODOPHYTES)	T		
WOODBURY	Prairie Moonwort	Botrychium campestre	PLANTS (PTERIODOPHYTES)	S		
WOODBURY	Bullsnake	Pituophis catenifer sayi	REPTILES	S		**PDF**
WOODBURY	Smooth Green Snake	Liochlorophis vernalis	REPTILES	S		**PDF**

From:	casey.laskowski@dnr.iowa.gov
Sent:	Thursday, September 14, 2023 1:39 PM
To:	Kari Sherman
Subject:	2023-1744 Environmental Review Request - Winnebago Tribe Broadband Connectivity Project

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42.2243/-96.3169; Woodbury County
Sec. 28/T86N/R47W

Thank you for inviting Department comment on the impact of this project. The Department has searched for records of rare species and significant natural communities in the project area and found no site-specific records that would be impacted by this project. However, these records and data are not the result of thorough field surveys. If listed species or rare communities are found during the planning or construction phases, additional studies and/or mitigation may be required.

This email is a record of review for protected species, rare natural communities, state lands and waters in the project area, including review by personnel representing state parks, preserves, recreation areas, fisheries and wildlife but does not include comment from the Environmental Services Division of this Department. This email does not constitute a permit. Other permits may be required from the Department or other state or federal agencies before work begins on this project.

If you have questions about this letter or require further information, please contact me at (515) 330-6432.

Environmental Review requests can be submitted electronically to: SLER@dnr.iowa.gov.

Sincerely,

Casey Laskowski | Environmental Specialist
Iowa Department of Natural Resources
P 515-330-6432 | F 515-725-8202 | 502 E. 9th St., Des Moines, IA 50319
www.iowadnr.gov

August 24, 2023

Jessica Tapp
Nebraska Game and Parks Commission
2200 North 33rd Street
Lincoln, NE 68503

RE: Winnebago Tribe of Nebraska Broadband Project

Dear Ms. Tapp:

Olsson, Inc. (Olsson), on behalf of the Winnebago Tribe of Nebraska in cooperation with the National Telecommunications and Information Administration (NTIA), is in the process of performing an environmental review as the proposed project will use federal funds by way of a federal grant. This includes advance coordination with applicable agencies to maintain compliance with appropriate federal and state regulations. The proposed project is to deploy a broadband infrastructure network on the Winnebago Reservation and in the adjacent communities. proposed action involves the construction of a multi-conduit, underground Fiber to the Premises system. In total, approximately 235 miles of new fiber-optic cable would be buried within protective conduit along existing road right-of-way and under the Missouri River in the project area. The buried fiber optic line installation, which consists of the telecommunications cable and its protective conduit, would be performed using vibratory plowing and trenching construction techniques along roadways, and a directional boring machine would be used to install line under waterway, road, and railroad crossings. The project location is included on Figure 1. No tree removal is expected to occur for the project. No tree removal is expected to occur for the project.

The United States Fish and Wildlife Service's Information for Planning and Consultation (IPaC) resource list resulted in six species: four listed, one proposed, and one candidate species. The table below summarizes the listed species and our evaluation of potential project impacts on the species. A copy of the IPaC list is attached.

The Nebraska Game and Parks Conservation Environmental Review Tool (CERT) was used to evaluate listed species for the project. The CERT resulted in, "Potential impacts on listed species may occur as a result of this project." The table below summarizes the species listed for the project.

Common Name	Scientific Name	Status*	Habitat	Potential Impact
Northern Long-eared Bat	*Myotis septentrionalis*	FE, SE	During the summer, northern long-eared bats roost singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags (dead trees). Males and non-reproductive females may also roost in cooler places, like caves and mines. Northern long-eared bats seem to be flexible in selecting roosts, choosing roost trees based on suitability to retain bark or provide cavities or crevices. This bat has also been found rarely roosting in structures, like barns and sheds.	Tree removal will not occur. If tree removal is required, removal will occur outside the breeding season (June 1 through July 31). If removal cannot occur outside the breeding season, a survey will be completed.

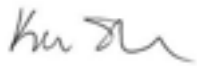
Common Name	Scientific Name	Status*	Habitat	Potential Impact
Pallid Sturgeon	*Scaphirhynchus albus*	FE, SE	Pallid sturgeon primarily reside in the main channels of the Missouri River and Lower Mississippi River from Montana to Louisiana. Adult pallid sturgeon inhabit large, deep turbid river channels, usually in strong current over firm sand or gravel.	Suitable habitat is unlikely present as majority of the project would occur within ROW or agricultural fields; therefore, it is unlikely the species will be impacted by the project.
Sturgeon Chub	*Macrhybopsis gelida*	SE	Sturgeon chub can be found in fast, free flowing river with high turbidity and low visibility.	Suitable habitat is unlikely present as majority of the project would occur within ROW or agricultural fields; therefore, it is unlikely the species will be impacted by the project.
Lake Sturgeon	*Acipenser fulvescens*	ST	Lake sturgeon occupy the bottom habitats of large freshwater lakes and rivers. They spend a majority of their time in lakes or coastal systems but migrate to large rivers to lay eggs in rocky, swift flowing parts of the river.	Suitable habitat is unlikely present as majority of the project would occur within ROW or agricultural fields; therefore, it is unlikely the species will be impacted by the project.
American Ginseng	*Panax quinquefolius*	ST	American ginseng can be found in the understory of deciduous forests with rich, moist soils. It is most likely found on hillsides and wooded ravines within dense, shaded woodlands.	Suitable habitat is unlikely present as majority of the project would occur within ROW or agricultural fields; therefore, it is unlikely the species will be impacted by the project.

* FT= Federally Threatened, FE= Federally Endangered, ST= State Threatened, SE= State Endangered

The proposed project does not represent a “major construction activity” as defined in 50 CFR 402.02. NTIA does not anticipate that the project will result in an undertaking of any State-listed or proposed threatened or endangered species. Please advise us of any concerns you may have related to possible effects of the project listed above on such species or critical habitat. USFWS has also been consulted.

We would appreciate a response within 30 days. If you need any further information or wish to discuss the Project, please contact Kari Sherman at 402-282-4072 or ksherman@olsson.com.

Sincerely,



Kari Sherman
Natural Resources and Planning

Olsson
2111 South 67th Street, Suite 200
Omaha, NE 68106
402-282-4072
ksherman@olsson.com

Enclosures:
Location Map
IPaC
CERT

Environmental Review Report

Project Information

Report Generation Date:	8/21/2023 08:29:35 AM
Project Title:	Winnebago Tribe Fiber EA
User Project Number(s):	021-05175
System Project ID:	NE-CERT-010517
Project Type:	Communications, Fiber Optic Cable (below ground)
Project Activities:	None Selected
Project Size:	120,604.74 acres
County(s):	Dakota; Dixon; Thurston; Wayne
Watershed(s):	Elkhorn; Missouri Tributaries
Watershed(s) HUC 8:	Blackbird-Soldier; Lewis and Clark Lake; Logan
Watershed(s) HUC 12:	Bacon Creek-Missouri River; Big Slough Creek-Logan Creek Dredge; City of Wakefield-Logan Creek Dredge; Coon Creek +
Biologically Unique Landscape(s):	Missouri River; Thurston-Dakota Bluffs
Township/Range and/or Section(s):	025N005E; 025N006E; 025N007E; 026N005E; 026N006E; 026N007E; 026N008E; 026N009E; 026N010E; 027N005E; 027N006E; 027N007E; 027N008E; 027N009E; 027N010E
Latitude/Longitude:	42.229309 / -96.596339

Contact Information

Organization:	Olsson
Contact Name:	Kari Sherman
Contact Phone:	4022824072
Contact Email:	ksherman@olsson.com
Contact Address:	2111 S 67th, Suite 200 Omaha NE 68106
Prepared By:	
Submitted On Behalf Of:	NTIA

Project Description

The Winnebago Tribe in coordination with National Telecommunications and Information Administration, have received a grant to deploy a broadband infrastructure network on the Winnebago Reservation and in the the adjacent communities. For this specific area, a horizontal bore will be used under the Missouri River.

Introduction

The Nebraska Game and Parks Commission (Commission) and the U.S. Fish and Wildlife Service (Service) have special concerns for endangered and threatened species, migratory birds, and other fish and wildlife and their habitats. Habitats frequently used by fish and wildlife species are wetlands, streams, riparian areas, woodlands, and grasslands. Special attention is given to proposed projects which modify wetlands, alter streams, result in loss of riparian habitat, convert/remove grasslands, or contaminate habitats. When this occurs, the Commission and Service recommend ways to avoid, minimize, or compensate for adverse effects to fish and wildlife and their habitats.

CONSULTATION PURSUANT TO THE NEBRASKA NONGAME AND ENDANGERED SPECIES CONSERVATION ACT (NESCA)

The Commission has responsibility for protecting state-listed endangered and threatened species under authority of the Nongame and Endangered Species Conservation Act (NESCA) (Neb. Rev. Stat. § 37-801 to 37-811). Pursuant to § 37-807 (3) of NESCA, all state agencies shall, in consultation with the Commission, ensure projects they authorize (i.e., issue a permit for), fund or carry out do not jeopardize the continued existence of state-listed endangered or threatened species or result in the destruction or modification of habitat of such species which is determined by the Commission to be critical. If a proposed project may affect state-listed species or designated critical habitat, further consultation with the Commission is required.

Informal consultation pursuant to NESCA can be completed by using the Conservation and Environmental Review Tool (CERT). The CERT analyzes the project type and location, and based on the analysis, provides information about potential impacts to listed species, habitat questions and/or conservation conditions.

- If project proponents agree to implement conservation conditions, as outlined in the report and applicable to the project type, then this document serves as documentation of consultation and the following actions can be taken to move forward with the project:
  - Sign the report in the designated areas.
  - Upload the signed PDF as part of their "final" project submittal.
  - By agreeing to and implementing the conservation conditions as outlined (if applicable), then further consultation with the Commission is not required.
- If the report indicates the project may have impacts on state-listed species, then the following actions must be taken:
  - Project proponent is required to contact and consult with the Commission. Contact information can be found within this document.

TECHNICAL ASSISTANCE AND CONSULTATION PURSUANT TO THE ENDANGERED SPECIES ACT (ESA)

The Service has responsibility for conservation and management of fish and wildlife resources for the benefit of the American public under the following authorities: 1) Endangered Species Act of 1973 (ESA); 2) Fish and Wildlife Coordination Act; 3) Bald and Golden Eagle Protection Act; and 4) Migratory Bird Treaty Act. The National Environmental Policy Act (NEPA) requires compliance with all of these statutes and regulations.

Pursuant to section 7(a)(2) of ESA, every federal agency, shall in consultation with the Service, ensure that an action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat.

If a proposed project may affect federally listed species or designated critical habitat, Section 7 consultation is required with the Service. It is the responsibility of the lead federal action agency to fully evaluate all potential effects (direct and indirect) that may occur to federally listed species and critical habitat in the action area. The lead federal agency provides their effect determination to the Service for concurrence. If federally listed species and/or designated/proposed critical habitat would be adversely affected by implementation of the project, the lead federal agency will need to formally request further section 7 consultation with the Service prior to making any irretrievable or irreversible commitment of federal funds (section 7(d) of ESA), or issuing any federal permits or licenses.

The information generated in this report DOES NOT satisfy consultation obligations between the lead federal agency and the Service pursuant to ESA. For the purposes of ESA, the information in this report should be considered as TECHNICAL ASSISTANCE, and does not serve as the Service's concurrence letter, even if the user signs and agrees to implement conservation conditions in order to satisfy the consultation requirements of NESCA.

Overall Results

The following result is based on a detailed analysis of your project.

- More information needed - refer to the following sections. Answer the habitat question(s) in the section below. Additional consultation with the Nebraska Game and Parks Commission and/or the U.S. Fish and Wildlife Service may or may not be required. Refer to the "Conservation Conditions Agreement" section for additional information.

Questions and Conservation Conditions

American Ginseng

This project is within or near the modeled distribution of the state-listed threatened American ginseng (*Panax quinquefolius*).
Habitat Question for American Ginseng:

Does the Action Area or the area of potential effect include mature deciduous forest along a river bluff or otherwise affect or alter vegetation in a mature deciduous forest along a river bluff (floodplain forests are not suitable habitat)?

____ Unknown
__X__ No. Conservation measures are not needed for this species unless otherwise indicated.
____ Yes. The following conservation measures must be implemented in order to avoid adverse impacts on American Ginseng:

AG CM-1: A qualified biologist will survey according to protocol during the growing season (May 15 - August 31) immediately prior to construction/ground disturbance activities, tree planting, or herbicide application. Note: The species is easier to identify during the fruiting period (July - August) than during the blooming period (May - July). If the species is found, then further consultation with the Nebraska Game and Parks Commission is required prior to commencing the project or activity. If the species is not found during the survey, then work may proceed.

Lake Sturgeon, Pallid Sturgeon, Sturgeon Chub

This project is within or near the modeled distribution of the state-listed threatened lake sturgeon (*Acipenser fulvescens*), the state and federally listed endangered pallid sturgeon (*Scaphirhynchus albus*) and the state-listed endangered sturgeon chub (*Macrhybopsis gelida*).
Habitat Question for Lake Sturgeon, Pallid Sturgeon and Sturgeon Chub:

Would the proposed project be implemented in the river, connected backwater areas, or impact water quality or flows, including out-of-channel high bank flows?

____ Unknown
__X__ No. Conservation measures are not needed for these species unless otherwise indicated.
____ Yes. The following conservation measures must be implemented in order to avoid adverse impacts on lake sturgeon, pallid sturgeon, and/or sturgeon chub:

Lake Sturgeon, Pallid Sturgeon, Sturgeon Chub

This project is within or near the modeled distribution of the state-listed threatened lake sturgeon (*Acipenser fulvescens*), the state and federally listed endangered pallid sturgeon (*Scaphirhynchus albus*) and the state-listed endangered sturgeon chub (*Macrhybopsis gelida*).

The following conservation measures must be implemented in order to avoid adverse impacts on lake sturgeon, pallid sturgeon and/or sturgeon chub:

LS, PS, & SC CM-80.2:
a) Work will not occur within the banks of a river, stream or connected backwater area. (Exception - Boat docks and ramps can be installed from August 1 to March 1.)
b) The project or activity will not impact water quality or flows, including out-of-channel high bank flows.
c) Best Management Practices will be installed to avoid and minimize sedimentation from upland soil disturbances.
d) If bridge work is a part of this project, bridge deck debris will be captured and/or contained to prevent material from entering the wet or dry channel, streambed or riverbed.
e) Water and spoil will not be discharged directly into the channel from March 1 - July 31.

Northern Long-eared Bat

This project is within the range of the state and federally listed threatened northern long-eared bat (NLEB) (*Myotis septentrionalis*).

Suitable summer roosting habitat for NLEB consist of forests or woodlots which contain suitable roost trees. In Nebraska, suitable roost trees consist of deciduous and/or pine live or dead trees or snags that are greater than or equal to 3 dbh (diameter at breast height) that exhibit peeling bark or have cracks, crevices or cavities. Linear features such as fencerows, riparian forests, and other wooded corridors are suitable for NLEB if they contain potential roost trees. Individual trees may be considered suitable habitat when they exhibit characteristics of suitable roost trees and are within 1,000 feet of other forested/wooded habitat.
NLEB have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat when they are within 1000 feet of suitable forested habitat (see above).

Examples of **UN-SUITABLE** habitat for the NLEB include:
• Individual trees that are greater than 1,000 feet from forested/wooded areas;
• Trees found in highly developed urban areas (e.g., street trees, downtown areas) – but note that NLEBs sometimes use relatively extensive forested natural areas within urban areas for summer roosting habitat;
• A pure stand of less than 3-inch dbh trees that are not mixed with larger trees.

Habitat Questions for Northern Long-eared Bat:

Is suitable summer habitat, as defined above, located within 1000 feet of the project activities?

___ Unknown.
___ No. Conservation measures are not needed for this species unless otherwise indicated. Additional habitat questions for this species are not applicable if suitable habitat is not present.
_X_ Yes. The following conservation measures must be implemented in order to avoid adverse impacts on northern long-eared bat.

NLEB CM-2: No removal of suitable trees or roosting structures between June 1 and July 31 (pup-rearing season).

NLEB CM-3: No removal of trees or woody vegetation. (This condition supercedes NLEB CM-2 if both conditions are listed.)

Conservation Measures Agreement

Based on the information contained in the report, follow the instructions for A, B or C below.

A) IF one or more of the habitat questions were answered with "Yes", insert an "X" for one of the two options below:

__X__ Option 1. For all species for which there is habitat present (as indicated by checking "yes" to a habitat question) I understand and agree to implement and/or incorporate the conservation measures for those species as indicated. By agreeing to implement and/or incorporate the conservation measures for those species as indicated, no further consultation with the Nebraska Game and Parks Commission is required. However, further consultation between the lead federal agency and the U.S. Fish and Wildlife Service (Service) may be required. Contact the Service for additional information. Sign and date on the line below, and also sign and date the "Certification" section. Submit a copy of the signed report with any type of permit/application required for the project.

Applicant/project proponent signature 8/24/2023 Date

_____ Option 2. I have concerns regarding one or more of the conservation measures. Sign the "Certification" section below. When submitting the project as "Final" in CERT, please attach a separate document explaining your concerns with the conservation measures and why they cannot be implemented. Then, contact the Nebraska Game and Parks Commission and the U.S. Fish and Wildlife Service for further information.

B) IF one or more habitat questions were answered with "Unknown," then sign the "Certification" section below, submit the project as "Final" in CERT, and contact the Nebraska Game and Parks Commission and the U.S. Fish and Wildlife Service for further information.

C) IF ALL the habitat questions were answered "No" or if the "Overall Results" section indicated the project was unlikely to impact listed species, then sign the "Certification" section below and submit the project as "Final" in CERT. No further consultation with the Nebraska Game and Parks Commission is required. Additional coordination with the U.S. Fish and Wildlife Service may be necessary depending on the determination made by the lead federal agency pursuant to their obligations under ESA. Submit a copy of the signed report with any type of permit/application needed for the project.

Certification

I certify that ALL of the project information in this report (including project location, project size/configuration, project type, project activities, answers to questions) is true, accurate, and complete. If the project type, activities, location, size, or configuration of the project change, or if any of the answers to any questions asked in this report change, then this information is no longer valid and we recommend running the revised project through CERT to get an updated report.

Applicant/project proponent signature 8/24/2023 Date

Additional Considerations

Bald and Golden Eagle Protection Act

The federal Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668-668c) provides for the protection of the bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*). Under the Eagle Act, “take” of eagles, their parts, nests or eggs is prohibited. Disturbance resulting in injury to an eagle or a decrease in productivity or nest abandonment by substantially interfering with normal breeding, feeding, or sheltering behavior is a form of “take.”

Bald eagles use mature, forested riparian areas near rivers, streams, lakes, and wetlands and occur along all the major river systems in Nebraska. The bald eagle southward migration begins as early as October and the wintering period extends from December-March. The golden eagle is found in arid open country with grassland for foraging in western Nebraska and usually near buttes or canyons which serve as nesting sites. Golden eagles are often a permanent resident in the Pine Ridge area of Nebraska. Additionally, many bald and golden eagles nest in Nebraska from mid-February through mid-July. Disturbances within 0.5-miles of an active nest or within line-of-sight of the nest could cause adult eagles to discontinue nest building or to abandon eggs. Both bald and golden eagles frequent river systems in Nebraska during the winter where open water and forested corridors provide feeding, perching, and roosting habitats, respectively. The frequency and duration of eagle use of these habitats in the winter depends upon ice and weather conditions. Human disturbances and loss of wintering habitat can cause undue stress leading to cessation of feeding and failure to meet winter thermoregulatory requirements. These affects can reduce the carrying capacity of preferred wintering habitat and reproductive success for the species.

To comply with the Eagle Act, it is recommended that the project proponent determine if the proposed project would impact bald or golden eagles or their habitats. This can be done by conducting a habitat assessment, surveying nesting habitat for active and inactive nests, and surveying potential winter roosting habitat to determine if it is being used by eagles. The area to be surveyed is dependent on the type of project; however for most projects we recommend surveying the project area and a ½ mile buffer around the project area. If it is determined that either species could be affected by the proposed project, the Commission recommends that the project proponent notify the Nebraska Game and Parks Commission as well as the Nebraska Field Office, U.S. Fish and Wildlife Service for recommendations to avoid “take” of bald and golden eagles.

Migratory Bird Treaty Act and Nebraska Revised Statute §37-540

We recommend the project proponent comply with the Migratory Bird Treaty Act (16 U.S.C. 703-712: Ch. 128 *as amended*) (MBTA). The project proponent should also comply with Nebraska Revised Statute §37-540, which prohibits take and destruction of nests or eggs of protected birds (as defined in Nebraska Revised Statute §37-237.01). Construction activities in grassland, wetland, stream, woodland, and river bank habitats that would result in impacts on birds, their nests or eggs protected under these laws should be avoided. Although the provisions of these laws are applicable year-round, most migratory bird nesting activity in Nebraska occurs during the period of May 1 to July 15. However, some migratory birds are known to nest outside of the aforementioned primary nesting season period. For example, raptors can be expected to nest in woodland habitats during February 1 through July 15, whereas sedge wrens, which occur in some wetland habitats, normally nest from July 15 to September 10. If development in this area is planned to occur during the primary nesting season or at any other time which may result in impacts to birds, their nests or eggs protected under these laws, we request that the project proponent arrange to have a qualified biologist conduct a field survey of the affected habitats to determine the absence or presence of nesting migratory birds. If a field survey identifies the existence of one or more active bird nests that cannot be avoided by the planned construction activities, the Nebraska Game and Parks Commission and the Nebraska Field Office, U.S. Fish and Wildlife Service should be contacted immediately. For more information on avoiding impacts to migratory birds, their nests and eggs, or to report active bird nests that cannot be avoided by planned construction activities, please contact the U.S. Fish and Wildlife Service and/or the Nebraska Game and Parks Commission (contact information within report). Adherence to these guidelines will help avoid unnecessary impacts on migratory birds.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (FWCA) requires consultation with the U.S. Fish and Wildlife Service (Service) and the State fish and wildlife agency (i.e., Nebraska Game and Parks Commission) for the purpose of preventing loss of and damage to fish and wildlife resources in the planning, implementation, and operation of federal and federaly funded, permitted, or licensed water resource development projects. This statute requires that federal agencies take into consideration the effect that the water related project would have on fish and wildlife resources, to take action to prevent loss or damage to these resources, and to provide for the development and improvement of these resources. The comments in this letter are provided as technical assistance only and are not the document required of the Secretary of the Interior pursuant to Section 2(b) of FWCA on any required federal environmental review or permit. This technical assistance is valid only for the described conditions and will have to be revised if significant environmental changes or changes in the proposed project take place. In order to determine whether the effects to fish and wildlife resources from the proposed project are being considered under FWCA, the lead federal agency must notify the Service in writing of how the comments and recommendations in this technical assistance letter are being considered into the proposed project.

Section 404 of the Clean Water Act

In general, the Nebraska Game and Parks Commission and the U.S. Fish and Wildlife Service have concerns for impacts to wetlands, streams and riparian habitats. We recommend that impacts to wetlands, streams, and associated riparian corridors be avoided and minimized, and that any unavoidable impacts to these habitats be mitigated. If any fill materials will be placed into waterways or wetlands, the U.S. Army Corps of Engineers Regulatory Office in Omaha should be contacted to determine if a 404 permit is needed.

Agency Contact Information

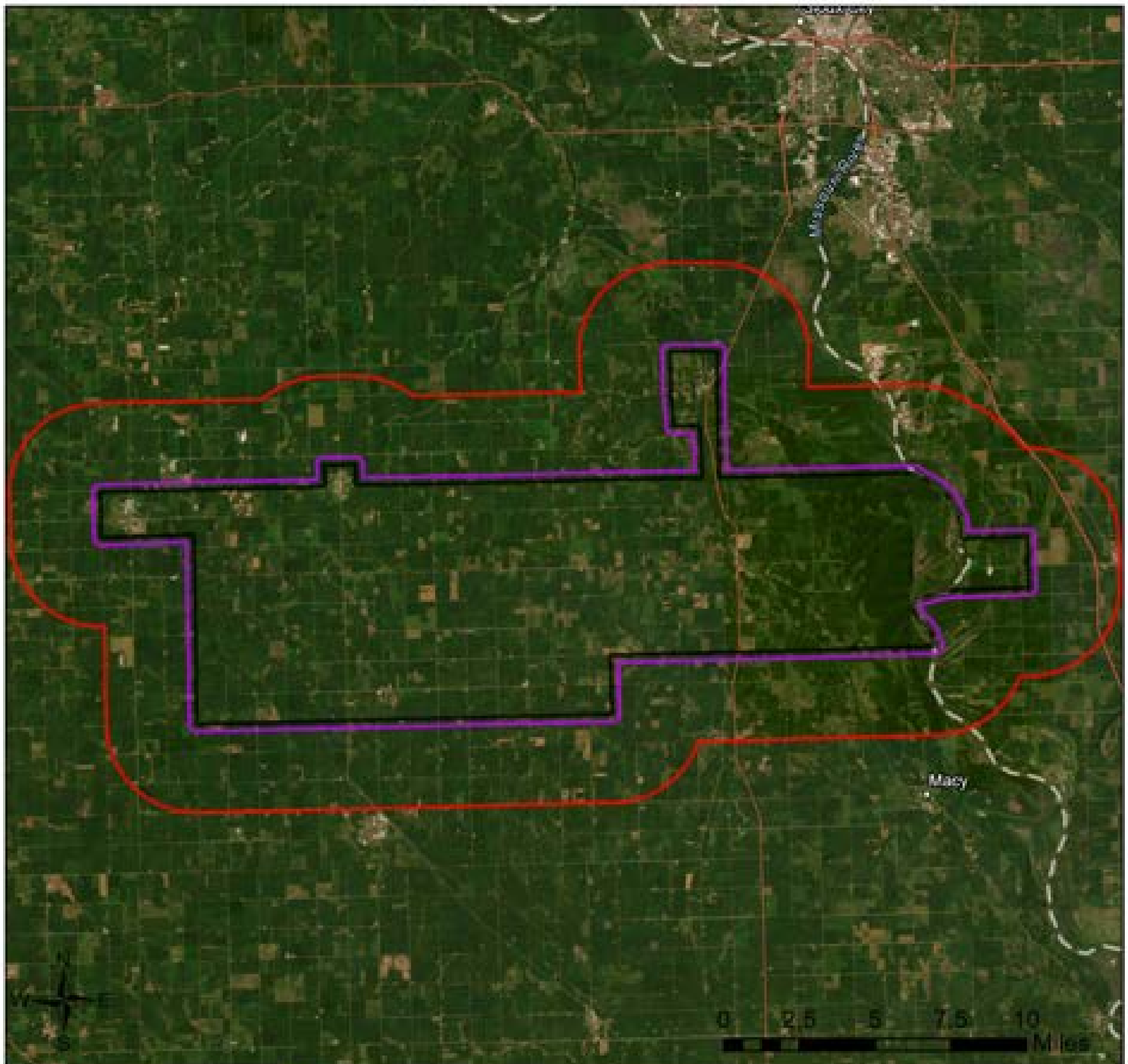
Nebraska Game and Parks Commission
Environmental Review Team
2200 North 33rd Street
Lincoln, NE 68503
phone: (402) 471-5423
email: ngpc.envreview@nebraska.gov

U.S. Fish and Wildlife Service

Nebraska Ecological Services
9325 South Alda Road
Wood River, NE 68883
phone: (308) 382-6468
email: nebraskaes@fws.gov

Winnebago Tribe Fiber EA

Aerial Image Basemap With Locator Map



3-mile Information Buffer Boundary

Project Review Boundary

Project Boundary

Project Size (acres): 120,604.74

Lat/Long (DD): 42.2293 / -96.5963

County(s): Dakota; Dixon; Thurston; Wayne

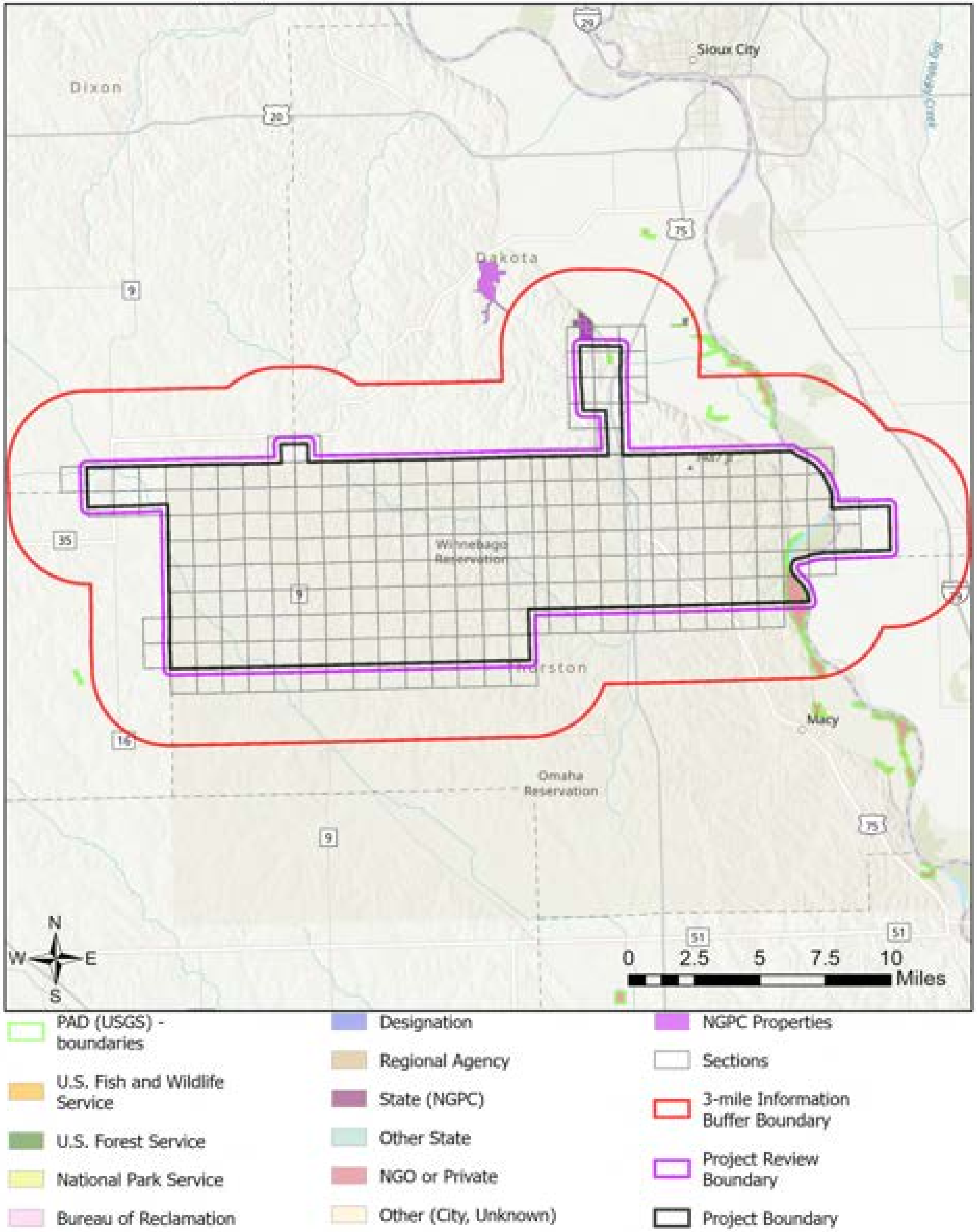
BUL(s): Missouri River; Thurston-Dakota Bluffs

Township/Range/Section(s): T25R05ES01; T25R05ES02; T25R05ES03; T25R05ES11; T25R05ES12 +

Earthstar Geographics
Iowa DNR, Nebraska Game & Parks Commission, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS
Esri, HERE, Garmin, FAO, NOAA, USGS, EPA

Winnebago Tribe Fiber EA

Topographic Basemap With Sections and Protected Areas



Esri, CGIAR, USGS
Iowa DNR, Nebraska Game & Parks Commission, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS

Winnebago Tribe Fiber EA

Web Map As Submitted By User

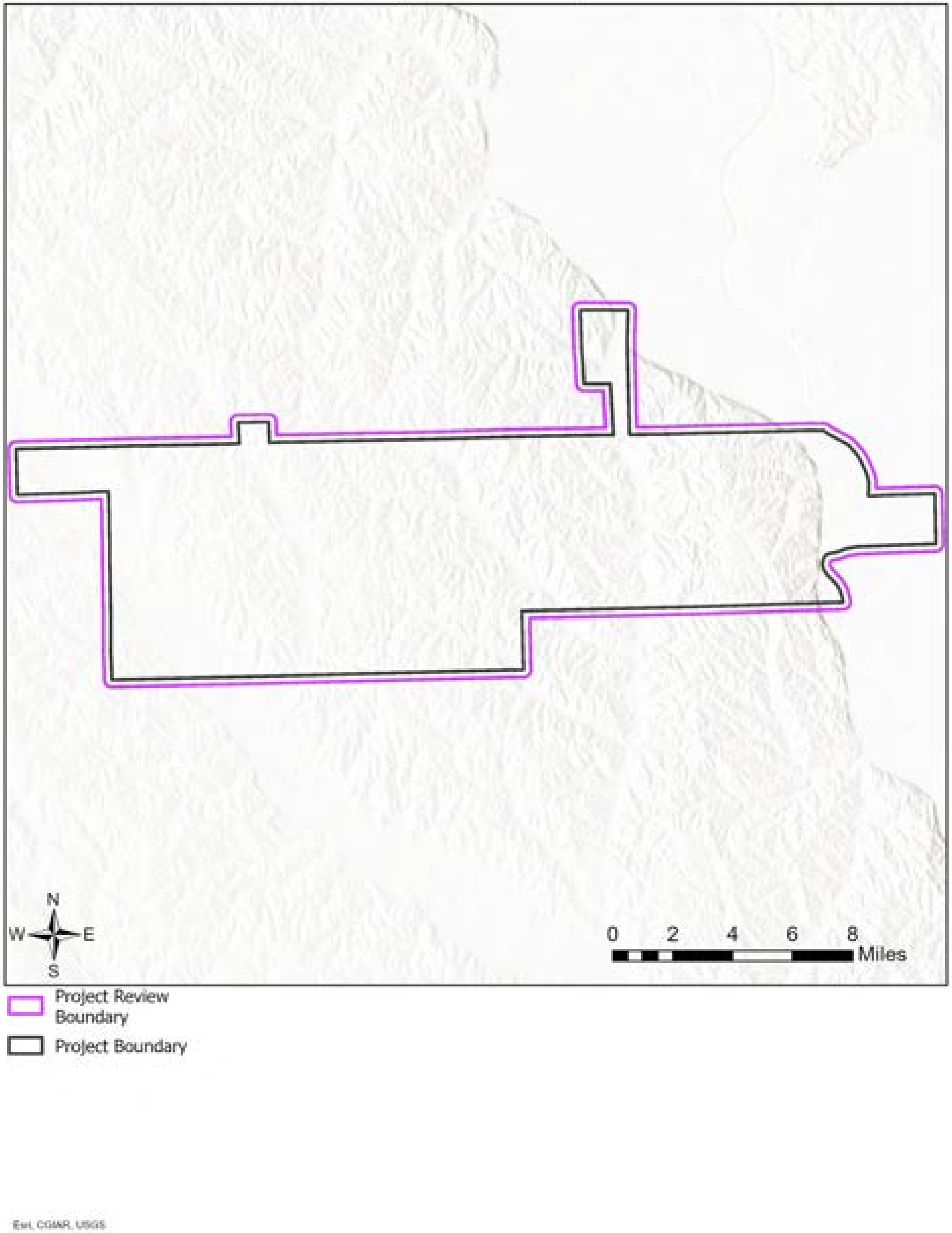


Table 1
Protected Areas in Immediate Vicinity of Project (project review area)

Area Name	Owner/Manager	Information Source
Wetlands Reserve Program (WRP)_Dakota,Nebraska	Private	USGS Protected Areas Database
Wetlands Reserve Program (WRP)_Thurston,Nebraska	Private	USGS Protected Areas Database

Table 2
Documented Occurrences in Immediate Vicinity of Project (project review area):
Natural communities and selected special areas

Name	Other Information	SRank	GRank
Bur Oak-Basswood-Ironwood Forest	Bur Oak-Basswood-Ironwood Forest	S2S3	GNR
Cottonwood-Peachleaf Willow Riparian Woodland	Cottonwood-Peachleaf Willow Riparian Woodland	S3	G3G4
Eastern Bulrush Deep Marsh	Eastern Bulrush Deep Marsh	S3	GNR
Eastern Cottonwood-Dogwood Riparian Woodland	Eastern Cottonwood-Dogwood Riparian Woodland	S2?	GNR
Eastern Riparian Forest	Eastern Riparian Forest	S3	G3G5
Eastern Sedge Wet Meadow	Eastern Sedge Wet Meadow	S1	GNR
Missouri River Valley Dune Grassland	Missouri River Valley Dune Grassland	S2	GNR
Red Oak-Basswood-Ironwood Forest	Red Oak-Basswood-Ironwood Forest	S2	G3G4
Missouri River Biologically Unique Landscape	Link to BUL document		
Thurston-Dakota Bluffs Biologically Unique Landscape	Link to BUL document		
Large Intact Block of Habitat for At-risk Species			

Table 3
Regional Documented Occurrences of Species within 1 Mile of Project Review Area:
Tier 1 and 2 at-risk species and additional S1-S3 plants

Scientific Name	Common Name	USFWS	State	SGCN	SRank	GRank	Taxonomic Group
Acipenser fulvescens	Lake Sturgeon		T	Tier 1	S1	G3G4	Vertebrate Animal - Fishes
Agastache scrophulariifolia	Purple Giant-hyssop			Tier 2	S1	G4	Vascular Plant - Dicots
Allium tricoccum var. burdickii	Ramp			Tier 2	S2	G4G5	Vascular Plant - Monocots
Anguilla rostrata	American Eel			Tier 2	SNR	G4	Vertebrate Animal - Fishes
Anodonta suborbiculata	Flat Floater			Tier 1	S1	G5	Invertebrate Animal - Freshwater Mussels
Aralia racemosa	Spikenard			Tier 2	S1	G5	Vascular Plant - Dicots

Table 3
Regional Documented Occurrences of Species within 1 Mile of Project Review Area:
Tier 1 and 2 at-risk species and additional S1-S3 plants

Scientific Name	Common Name	USFWS	State	SGCN	SRank	GRank	Taxonomic Group
Boechera dentata	Short's Rock Cress			Tier 2	S2	G5	Vascular Plant - Dicots
Brachyelytrum erectum	Bearded Short-husk			Tier 2	S2	G5	Vascular Plant - Monocots
Caulophyllum thalictroides	Blue Cohosh			Tier 2	S1	G5	Vascular Plant - Dicots
Cirsium discolor	Field Thistle				S1S2	G5	Vascular Plant - Dicots
Cuscuta umbrosa	Big-fruit Dodder			Tier 2	S1S3	G5	Vascular Plant - Dicots
Cycleptus elongatus	Blue Sucker			Tier 1	S1	G3G4	Vertebrate Animal - Fishes
Dactylorhiza viridis	Long-bract Green Orchid			Tier 2	S1	G5	Vascular Plant - Monocots
Dryopteris carthusiana	Spinulose Wood Fern			Tier 2	S2	G5	Vascular Plant - Leptosporangiate Ferns
Erysimum inconspicuum	Small-flower Wallflower			Tier 2	S2	G5	Vascular Plant - Dicots
Erythronium mesochoreum	Prairie Fawn-lily			Tier 2	S2	G4G5	Vascular Plant - Monocots
Galearis spectabilis	Showy Orchis			Tier 2	S1	G5	Vascular Plant - Monocots
Hybognathus argyritis	Western Silvery Minnow			Tier 1	S2	G4	Vertebrate Animal - Fishes
Hybognathus placitus	Plains Minnow			Tier 1	S2	G4	Vertebrate Animal - Fishes
Lasionycteris noctivagans	Silver-haired Bat			Tier 1	S3	G3G4	Vertebrate Animal - Mammals
Lilium michiganense	Turk's Cap Lily				S2S4	G5	Vascular Plant - Monocots
Lota lota	Burbot			Tier 2	S1	G5	Vertebrate Animal - Fishes
Macrhybopsis gelida	Sturgeon Chub		E	Tier 1	S1	G3	Vertebrate Animal - Fishes
Macrhybopsis hyostoma	Shoal Chub			Tier 2	S3	G5	Vertebrate Animal - Fishes
Macrhybopsis meeki	Sicklefin Chub			Tier 1	S1	G3	Vertebrate Animal - Fishes
Macrhybopsis storeriana	Silver Chub			Tier 2	S2	G5	Vertebrate Animal - Fishes
Matteuccia struthiopteris var. pensylvanica	Ostrich Fern			Tier 2	S1	G5T5	Vascular Plant - Leptosporangiate Ferns
Myotis septentrionalis	Northern Long-eared Myotis	T	T	Tier 1	S1S2	G1G2	Vertebrate Animal - Mammals
Nelumbo lutea	American Lotus			Tier 2	S1S3	G4	Vascular Plant - Dicots
Patis racemosa	Black-seed Ricegrass			Tier 2	S2	G5	Vascular Plant - Monocots
Pellaea atropurpurea	Purple-stem Cliff-brake			Tier 2	S2	G5	Vascular Plant - Leptosporangiate Ferns

Table 3
Regional Documented Occurrences of Species within 1 Mile of Project Review Area:
Tier 1 and 2 at-risk species and additional S1-S3 plants

Scientific Name	Common Name	USFWS	State	SGCN	SRank	GRank	Taxonomic Group
Perimyotis subflavus	Tricolored Bat			Tier 1	S3	G2G3	Vertebrate Animal - Mammals
Pimephales notatus	Bluntnose Minnow			Tier 2	S3	G5	Vertebrate Animal - Fishes
Platygobio gracilis	Flathead Chub			Tier 1	S2	G5	Vertebrate Animal - Fishes
Polyodon spathula	Paddlefish			Tier 2	S2	G4	Vertebrate Animal - Fishes
Ranunculus recurvatus var. recurvatus	Hooked Buttercup			Tier 2	S2	G5T5	Vascular Plant - Dicots
Scaphirhynchus albus	Pallid Sturgeon	E	E	Tier 1	S1	G2	Vertebrate Animal - Fishes
Stachys hispida	Hispid Hedge-nettle			Tier 2	S1	G5T4Q	Vascular Plant - Dicots
Ulmus thomasii	Rock Elm				S2S4	G5	Vascular Plant - Dicots
Viburnum lentago	Nannyberry			Tier 2	S1	G5	Vascular Plant - Dicots

Table 4
Potential Occurrences in Immediate Vicinity of Project (project review area):
Special status species (Tier 1 at-risk species and Bald and Golden Eagle), based on models or range maps

Scientific Name	Common Name	Data Type	USFWS	State	SGCN	SRank	GRank	Taxonomic Group
Acipenser fulvescens	Lake Sturgeon	Model		T	Tier 1	S1	G3G4	Vertebrate Animal - Fishes
Ammodramus henslowii	Henslow's Sparrow	Range			Tier 1	S1	G4	Vertebrate Animal - Birds
Anodonta suborbiculata	Flat Floater	Range			Tier 1	S1	G5	Invertebrate Animal - Freshwater Mussels
Asio flammeus	Short-eared Owl	Range			Tier 1	S2	G5	Vertebrate Animal - Birds
Atrytone arogos iowa	Iowa Skipper	Range			Tier 1	S1	G2G3T2T3	Invertebrate Animal - Butterflies and Skippers
Boloria selene nebraskensis	Nebraska Fritillary	Range			Tier 1	SNR	G5T3T4	Invertebrate Animal - Butterflies and Skippers
Calidris subruficollis	Buff-breasted Sandpiper	Range			Tier 1	S2N	G4	Vertebrate Animal - Birds
Catocala nuptialis	Married Underwing	Range			Tier 1	SNR	G3	Invertebrate Animal - Underwing Moths
Catocala whitneyi	Whitney Underwing	Range			Tier 1	S1	G2G3	Invertebrate Animal - Underwing Moths
Coccyzus erythropthalmus	Black-billed Cuckoo	Range			Tier 1	S3	G5	Vertebrate Animal - Birds

Table 4
Potential Occurrences in Immediate Vicinity of Project (project review area):
Special status species (Tier 1 at-risk species and Bald and Golden Eagle), based on models or range maps

Scientific Name	Common Name	Data Type	USFWS	State	SGCN	SRank	GRank	Taxonomic Group
Cycleptus elongatus	Blue Sucker	Range			Tier 1	S1	G3G4	Vertebrate Animal - Fishes
Danaus plexippus	Monarch	Range			Tier 1	S2	G4	Invertebrate Animal - Butterflies and Skippers
Emydoidea blandingii	Blanding's Turtle	Range		NC	Tier 1	S4	G4	Vertebrate Animal - Turtles
Euphyes bimacula illinois	Two-spotted Skipper	Range			Tier 1	S3	G4T1T2	Invertebrate Animal - Butterflies and Skippers
Euphyes conspicua buchholzi	Bucholz Black Dash	Range			Tier 1	S1	G4G5T1	Invertebrate Animal - Butterflies and Skippers
Fundulus sciadicus	Plains Topminnow	Range			Tier 1	S3	G4	Vertebrate Animal - Fishes
Haliaeetus leucocephalus	Bald Eagle	Range			Tier 2	S3	G5	Vertebrate Animal - Birds
Hesperia ottoe	Ottoe Skipper	Range			Tier 1	S2	G3	Invertebrate Animal - Butterflies and Skippers
Hybognathus argyritis	Western Silvery Minnow	Range			Tier 1	S2	G4	Vertebrate Animal - Fishes
Hybognathus placitus	Plains Minnow	Range			Tier 1	S2	G4	Vertebrate Animal - Fishes
Hylocichla mustelina	Wood Thrush	Range			Tier 1	S3	G4	Vertebrate Animal - Birds
Lanius ludovicianus	Loggerhead Shrike	Range			Tier 1	S3	G4	Vertebrate Animal - Birds
Lasionycteris noctivagans	Silver-haired Bat	Range			Tier 1	S3	G3G4	Vertebrate Animal - Mammals
Lasiurus borealis	Eastern Red Bat	Range			Tier 1	S3	G3G4	Vertebrate Animal - Mammals
Lasiurus cinereus	Hoary Bat	Range			Tier 1	S3	G3G4	Vertebrate Animal - Mammals
Lethe eurydice fumosus	Smoky-eyed Brown	Range			Tier 1	S3	G5T3T4	Invertebrate Animal - Butterflies and Skippers
Macrhybopsis gelida	Sturgeon Chub	Model		E	Tier 1	S1	G3	Vertebrate Animal - Fishes
Myotis lucifugus	Little Brown Myotis	Range			Tier 1	SNR	G3	Vertebrate Animal - Mammals
Myotis septentrionalis	Northern Long-eared Myotis	Range	T	T	Tier 1	S1S2	G1G2	Vertebrate Animal - Mammals
Panax quinquefolius	American Ginseng	Model		T	Tier 1	S1	G3G4	Vascular Plant - Flowering Plants
Perimyotis subflavus	Tricolored Bat	Range			Tier 1	S3	G2G3	Vertebrate Animal - Mammals
Perognathus flavescens perniger	Plains Pocket Mouse	Range			Tier 1	SNR	G5TNR	Vertebrate Animal - Mammals

Table 4
Potential Occurrences in Immediate Vicinity of Project (project review area):
Special status species (Tier 1 at-risk species and Bald and Golden Eagle), based on models or range maps

Scientific Name	Common Name	Data Type	USFWS	State	SGCN	SRank	GRank	Taxonomic Group
Platygobio gracilis	Flathead Chub	Range			Tier 1	S2	G5	Vertebrate Animal - Fishes
Scaphirhynchus albus	Pallid Sturgeon	Model	E	E	Tier 1	S1	G2	Vertebrate Animal - Fishes
Speyeria idalia	Regal Fritillary	Range			Tier 1	S3	G3?	Invertebrate Animal - Butterflies and Skippers

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Nebraska Ecological Services Field Office
9325 B South Alda Rd., Ste B
Wood River, NE 68883-9565
Phone: (308) 382-6468 Fax: (308) 384-8835

In Reply Refer To: 06/07/2024 15:23:46 UTC
Project Code: 2023-0119474
Project Name: Winnebago Tribe of Nebraska Broadband Connectivity 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 IPaC website (https://ipac.ecosphere.fws.gov/) at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the 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: https://www.fws.gov/media/endangered-species-consultation-handbook or at our Nebraska Field Office webpage (https://www.fws.gov/office/nebraska-ecological-services/project-planning-and-review-under-endangered-species-act).
We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Project Consultation Code in the header of this letter (i.e., YEAR-XXXXXXX) with any request for consultation or correspondence about your project that you submit to our office.

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Act, there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts and permitting see https://www.fws.gov/program/migratory-bird-permit
The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.
In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit:

https://www.federalregister.gov/documents/2012/10/03/2012-24433/migratory-bird-conservation-executive-order-13186

Platte River System: The Platte River, its tributaries, and associated wetland habitats are resources of national importance. Due to the cumulative effect of many water depletion projects in the Platte River basin, the Service considers any direct or indirect depletion of flows from the Platte River system to be significant and will continue to further deteriorate the already stressed habitat conditions. Federal agencies must consult with the Service under section 7 of the ESA for projects in Nebraska that may lead to water depletions or have the potential to impact water quality in the Platte River system, because these actions my affect threatened and endangered species inhabiting the downstream reaches of these river systems. The federally listed species that could be impacted from Platte River water depletions include the federally endangered Whooping Crane (Grus americana), and Pallid Sturgeon (Scaphirhynchus albus); the threatened Piping Plover (Charadrius melodus) and Western Prairie Fringed Orchid (Platanthera praeclara). In general, depletions include evaporative losses and/or consumptive use of surface or groundwater within the affected basin, often characterized as diversions minus return flows. Project elements that could be associated with depletions include, but are not limited to: borrow sites, ponds, lakes, and reservoirs (e.g., for detention, recreating, irrigation, storage, stock watering, municipal storage, and power generation); hydrostatic testing of pipelines; wells; dust abatement; diversion structures; and water treatment facilities. For more information on consultation requirements for the Platte River species, please visit https://fws.gov/partner/platte-river-recovery-implementation-program

Nebraska Nongame and Endangered Species Conservation Act: Federally listed species protected under the Endangered Species Act are also state-listed under the Nebraska statute, the Nebraska Nongame and Endangered Species Conservation Act. There may be state-listed species affected by the proposed project that are not federally listed. To determine if the proposed project may affect state-listed species, the Service recommends that the project proponent contact the Nebraska Game and Parks Commission (NGPC) Planning and Program Division located at 2200 North 33rd Street Lincoln, Nebraska 68503-0370. For more information and to request an environmental review from the NGPC, visit their Environmental Review website at http://outdoornebraska.gov/environmentalreview/ for instructions and contact information.

Note: IPaC has provided all available attachments because this project is in multiple field office jurisdictions.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- 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:

Nebraska Ecological Services Field Office
9325 B South Alda Rd., Ste B
Wood River, NE 68883-9565
(308) 382-6468

This project's location is within the jurisdiction of multiple offices. However, only one species list document will be provided for all offices. The species and critical habitats in this document reflect the aggregation of those that fall in each of the affiliated office's jurisdiction. Other offices affiliated with the project:

Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
(309) 757-5800

PROJECT SUMMARY

Project Code: 2023-0119474
Project Name: Winnebago Tribe of Nebraska Broadband Connectivity Project
Project Type: Distribution Line - New Construction - Below Ground
Project Description: The Project would provide qualified broadband service to approximately 600 unserved Native American households, 40 unserved Native American and/or Tribal businesses, and 16 Tribal anchor institutions. In addition, the Project includes a rate stabilization program designed to provide up to a maximum payment on broadband household monthly bills to alleviate the burden felt most heavily by those in poverty and to prevent disconnection of service.
The Project will occur over the entire Winnebago Reservation.
Construction is expected to start in 2024.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.2510254,-96.57505717561948,14z

Counties: Iowa and Nebraska

ENDANGERED SPECIES ACT SPECIES

There is a total of 6 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	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened

FISHES

NAME	STATUS
Pallid Sturgeon *Scaphirhynchus albus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7162	Endangered

CLAMS

NAME	STATUS
Scaleshell Mussel *Leptodea leptodon* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5881	Endangered

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

CRITICAL HABITATS

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

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

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.

BALD & GOLDEN EAGLES

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

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

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

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to Bald Eagle Nesting and Sensitivity to Human Activity

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below 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 Oct 15 to Aug 31
Golden Eagle *Aquila chrysaetos* 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/1680	Breeds Jan 1 to Aug 31

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 "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence ( )

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season ( )

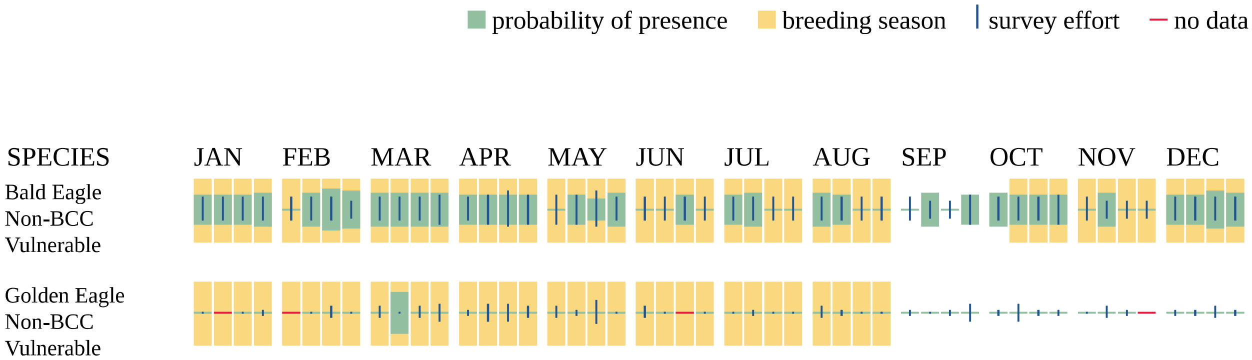
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)

Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)

A week is marked as having no data if there were no survey events for that week.



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

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[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

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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)

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

NAME	BREEDING SEASON
American Golden-plover *Pluvialis dominica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10561	Breeds elsewhere
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 Oct 15 to Aug 31
Black Tern *Chlidonias niger surinamenisis* 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
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. https://ecos.fws.gov/ecp/species/9454	Breeds May 20 to Jul 31

NAME	BREEDING SEASON
Cerulean Warbler *Setophaga cerulea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 21 to Jul 20
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9406	Breeds Mar 15 to Aug 25
Eastern Whip-poor-will *Antrostomus vociferus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10678	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. https://ecos.fws.gov/ecp/species/10567	Breeds May 1 to Jul 31
Golden Eagle *Aquila chrysaetos* 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/1680	Breeds Jan 1 to Aug 31
Grasshopper Sparrow *Ammodramus savannarum perpallidus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8329	Breeds Jun 1 to Aug 20
Hudsonian Godwit *Limosa haemastica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9482	Breeds elsewhere
Le Conte's Sparrow *Ammospiza leconteii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9469	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
Long-eared Owl *asio otus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3631	Breeds Mar 1 to Jul 15

NAME	BREEDING SEASON
Marbled Godwit *Limosa fedoa* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds May 1 to Jul 31
Northern Harrier *Circus hudsonius* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8350	Breeds Apr 1 to Sep 15
Pectoral Sandpiper *Calidris melanotos* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9561	Breeds elsewhere
Prairie Loggerhead Shrike *Lanius ludovicianus excubitorides* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8833	Breeds Feb 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9398	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 https://ecos.fws.gov/ecp/species/10633	Breeds elsewhere
Rusty Blackbird *Euphagus carolinus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9478	Breeds elsewhere
Semipalmated Sandpiper *Calidris pusilla* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9603	Breeds elsewhere
Short-billed Dowitcher *Limnodromus griseus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Upland Sandpiper *Bartramia longicauda* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9294	Breeds May 1 to Aug 31

NAME	BREEDING SEASON
Willet *Tringa semipalmata* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10669	Breeds Apr 20 to Aug 5
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9431	Breeds May 10 to Aug 31

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 "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

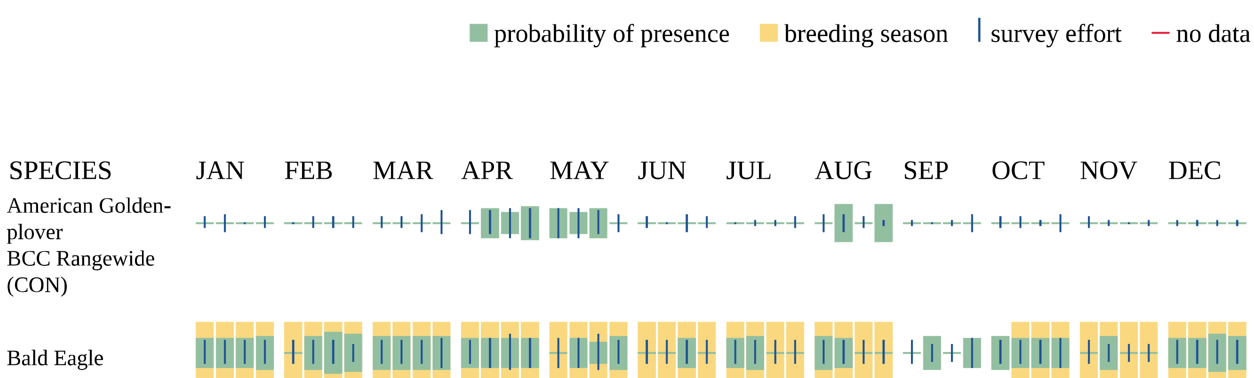
Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

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



Non-BCC
Vulnerable

Black Tern
BCC Rangewide
(CON)

Black-billed
Cuckoo
BCC Rangewide
(CON)

Bobolink
BCC Rangewide
(CON)

Cerulean Warbler
BCC Rangewide
(CON)

Chimney Swift
BCC Rangewide
(CON)

Eastern Whip-poor-will
BCC Rangewide
(CON)

Franklin's Gull
BCC Rangewide
(CON)

Golden Eagle
Non-BCC
Vulnerable

Grasshopper
Sparrow
BCC - BCR

Hudsonian Godwit
BCC Rangewide
(CON)

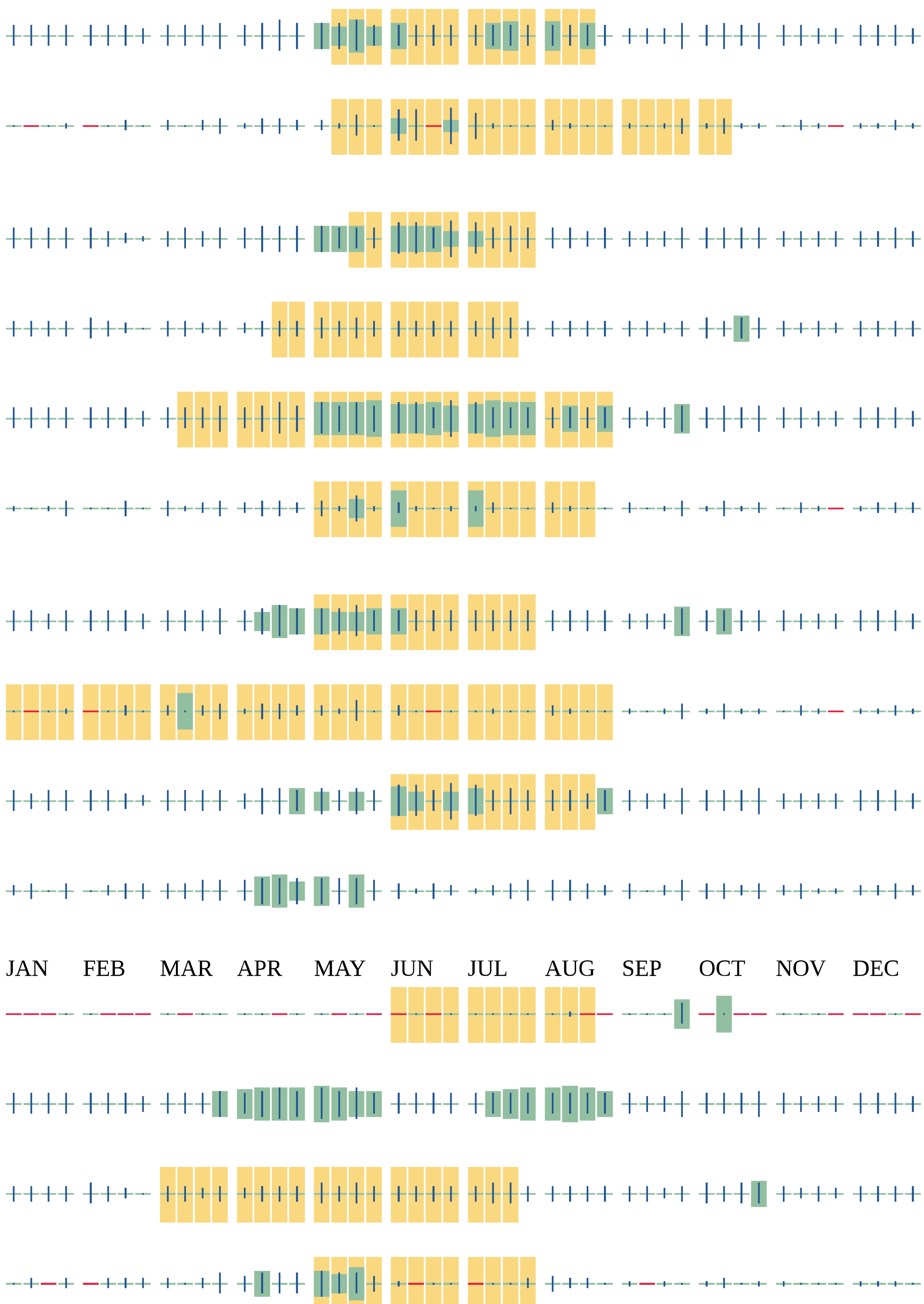
SPECIES JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

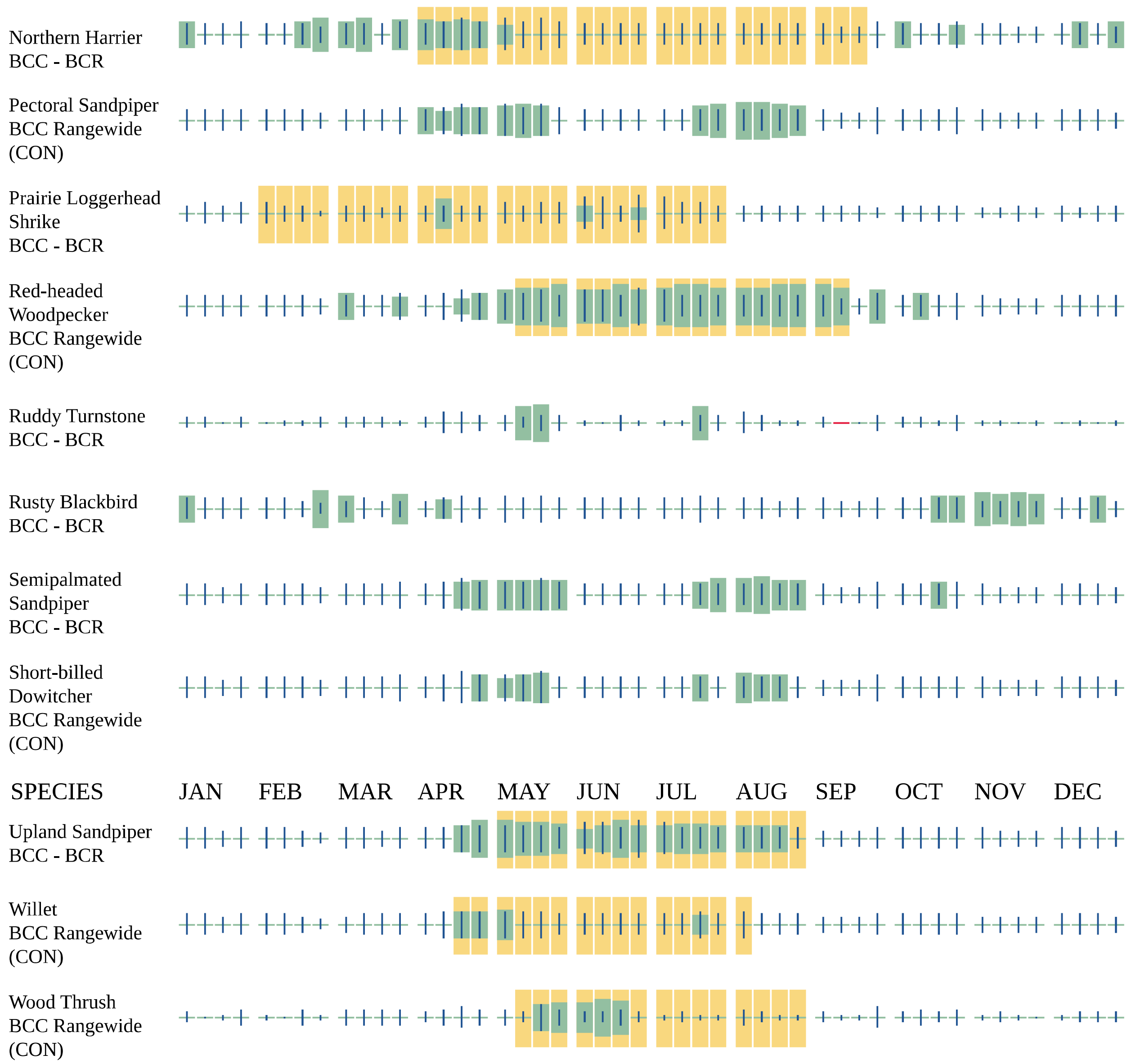
Le Conte's Sparrow
BCC Rangewide
(CON)

Lesser Yellowlegs
BCC Rangewide
(CON)

Long-eared Owl
BCC Rangewide
(CON)

Marbled Godwit
BCC Rangewide
(CON)





Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

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.

Due to your project's size, the list below may be incomplete, or the acreages reported may be inaccurate. For a full list, please contact the local U.S. Fish and Wildlife office or visit https://www.fws.gov/wetlands/data/mapper.HTML

FRESHWATER FORESTED/SHRUB WETLAND

- PFO1C
- PFOA

FRESHWATER POND

- PABGx

FRESHWATER EMERGENT WETLAND

- PEM1Ah
- PEM1C
- PEM1Ax
- PEM1Fh
- PEM1Ad
- PEM1Cx
- PEM1Ch
- PEM1Cd
- PEM1F
- PEM1A

LAKE

- L1UBG
- L2UBF
- L1UBH

RIVERINE

- R2UBH

IPAC USER CONTACT INFORMATION

Agency: Winnebago Tribe of Nebraska
Name: Kari Sherman
Address: 2111 S 67th St. Suite 200
City: Omaha
State: NE
Zip: 68106
Email ksherman@olsson.com
Phone: 4022824072

LEAD AGENCY CONTACT INFORMATION

Lead Agency: National Telecommunications and Information Administration

You have indicated that your project falls under or receives funding through the following special project authorities:

- FAST-41

Environmental Review Report

Project Information

Report Generation Date:	5/31/2024 02:29:17 PM
Project Title:	Winnebago Tribe of Nebraska Broadband Connectivity Project
User Project Number(s):	021-05175
System Project ID:	NE-CERT-011740
Project Type:	Communications, Fiber Optic Cable (below ground)
Project Activities:	None Selected
Project Size:	141,946.88 acres
County(s):	Dakota; Dixon; Thurston; Wayne
Watershed(s):	Elkhorn; Missouri Tributaries
Watershed(s) HUC 8:	Blackbird-Soldier; Lewis and Clark Lake; Logan
Watershed(s) HUC 12:	Bacon Creek-Missouri River; Big Slough Creek-Logan Creek Dredge; City of Wakefield-Logan Creek Dredge; Coon Creek +
Biologically Unique Landscape(s):	Missouri River; Thurston-Dakota Bluffs
Township/Range and/or Section(s):	025N005E; 025N006E; 025N007E; 026N005E; 026N006E; 026N007E; 026N008E; 026N009E; 026N010E; 027N005E; 027N006E; 027N007E; 027N008E; 027N009E; 027N010E; 028N008E; 028N009E; 029N009E
Latitude/Longitude:	42.235989 / -96.589738

Contact Information

Organization:	Olsson
Contact Name:	Cara Booth
Contact Phone:	4023411116
Contact Email:	cbooth@olsson.com
Contact Address:	2111 S 67th Street Unit 200 Omaha NE 68106
Prepared By:	
Submitted On Behalf Of:	

Project Description

The Winnebago Tribe, in coordination with National Telecommunications and Information Administration, has received a grant to deploy a broadband infrastructure network on the Winnebago Reservation and in the adjacent communities.

The Nebraska Nongame and Endangered Species Conservation Act (NESCA)

The Nebraska Game and Parks Commission (NGPC) has responsibility for protecting state-listed endangered and threatened species under authority of the Nongame and Endangered Species Conservation Act (NESCA) (Neb. Rev. Stat. § 37-801 to 37-811). Pursuant to §37-807 (3) of NESCA, **all state agencies shall, in consultation with the Commission, ensure projects they authorize (i.e., issue a permit for), fund or carry out** do not jeopardize the continued existence of state-listed endangered or threatened species or result in the destruction or modification of habitat of such species which is determined by the Commission to be critical. If a proposed project may affect state-listed species or designated critical habitat, further consultation with the Commission is required.

Informal consultation pursuant to NESCA can be completed by using the Conservation and Environmental Review Tool (CERT). The CERT analyzes the project type and location, and based on the analysis, provides information about potential impacts to listed species, habitat questions and/or conservation conditions.

- If project proponents agree to implement conservation conditions, as outlined in the report and applicable to the project type, then this document serves as documentation of consultation and the following actions can be taken to move forward with the project:
  - Sign the report in the designated areas.
  - Upload the signed and dated PDF report into the project within CERT.
  - Change the edit status to Final from Draft status.
  - By agreeing to and implementing the conservation conditions as outlined (if applicable), then further consultation (i.e., contacting the Commission) is not required.
- If the report indicates the project may have impacts on state-listed species, then the following actions must be taken:
  - Project proponent is required to contact and consult with the Commission. Contact information can be found under Agency Contact Information.

Review the Overall Results section on the following page for further instructions.

Disclaimer

The information generated in this report DOES NOT satisfy consultation obligations between the lead federal agency and the U.S. Fish and Wildlife Service pursuant to the Endangered Species Act (ESA).

For the purposes of ESA, the information in this report should be considered as technical assistance, and does not serve as the Service's concurrence letter, even if the user signs and agrees to implement conservation conditions in order to satisfy the consultation requirements of NESCA.

Utilize the Information for Planning and Consultation (IPaC) Tool, available at IPaC: Home (fws.gov) to begin informal consultation with the U.S. Fish & Wildlife Service.

Review the Federal Laws section below for further information on the ESA. Pursuant to section 7(a)(2) of ESA, every federal agency, shall in consultation with the Service, ensure that an action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat.

Overall Results

The following result is based on a detailed analysis of your project.

- More information needed, please answer the questions under the Question and Conservation Conditions section. If conservation conditions are required, review the Conservation Conditions Agreement section. Additional consultation with the Nebraska Game and Parks Commission may or may not be required; please review all the information provided in this document.

Questions and Conservation Conditions

American Ginseng

This project is within or near the modeled distribution of the state-listed threatened American ginseng (*Panax quinquefolius*).
Habitat Question for American Ginseng:

Does the Action Area or the area of potential effect include mature deciduous forest along a river bluff or otherwise affect or alter vegetation in a mature deciduous forest along a river bluff (floodplain forests are not suitable habitat)?

____ Unknown
__X__ No. Conservation measures are not needed for this species unless otherwise indicated.
____ Yes. The following conservation measures must be implemented in order to avoid adverse impacts on American Ginseng:

AG CM-1: A qualified biologist will survey according to protocol during the growing season (May 15 - August 31) immediately prior to construction/ground disturbance activities, tree planting, or herbicide application. Note: The species is easier to identify during the fruiting period (July - August) than during the blooming period (May - July). If the species is found, then further consultation with the Nebraska Game and Parks Commission is required prior to commencing the project or activity. If the species is not found during the survey, then work may proceed.

Lake Sturgeon, Pallid Sturgeon, Sturgeon Chub

This project is within or near the modeled distribution of the state-listed threatened lake sturgeon (*Acipenser fulvescens*), the state and federally listed endangered pallid sturgeon (*Scaphirhynchus albus*) and the state-listed endangered sturgeon chub (*Macrhybopsis gelida*).
Habitat Question for Lake Sturgeon, Pallid Sturgeon and Sturgeon Chub:

Would the proposed project be implemented in the river, connected backwater areas, or impact water quality or flows, including out-of-channel high bank flows?

____ Unknown
__X__ No. Conservation measures are not needed for these species unless otherwise indicated.
____ Yes. The following conservation measures must be implemented in order to avoid adverse impacts on lake sturgeon, pallid sturgeon, and/or sturgeon chub:

LS, PS, & SC CM-80.2:
a) Work will not occur within the banks of a river, stream or connected backwater area. (Exception - Boat docks and ramps can be installed from August 1 to March 1.)
b) The project or activity will not impact water quality or flows, including out-of-channel high bank flows.
c) Best Management Practices will be installed to avoid and minimize sedimentation from upland soil disturbances.
d) If bridge work is a part of this project, bridge deck debris will be captured and/or contained to prevent material from entering the wet or dry channel, streambed or riverbed.
e) Water and spoil will not be discharged directly into the channel from March 1 - July 31.

Northern Long-eared Bat

This project is within the range of the state and federally listed endangered Northern long-eared bat (NLEB) (*Myotis septentrionalis*).

Suitable summer roosting habitat for NLEB consist of forests or woodlots which contain suitable roost trees. In Nebraska, suitable roost trees consist of deciduous and/or pine live or dead trees or snags that are greater than or equal to 3 dbh (diameter at breast height) that exhibit peeling bark or have cracks, crevices or cavities. Linear features such as fencerows, riparian forests, and other wooded corridors are suitable for NLEB if they contain potential roost trees. Individual trees may be considered suitable habitat when they exhibit characteristics of suitable roost trees and are within 1,000 feet of other forested/wooded habitat.
NLEB have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat when they are within 1000 feet of suitable forested habitat (see above).

Examples of **UN-SUITABLE** habitat for the NLEB include:

- Individual trees that are greater than 1,000 feet from forested/wooded areas;
- Trees found in highly developed urban areas (e.g., street trees, downtown areas) – but note that NLEBs sometimes use relatively extensive forested natural areas within urban areas for summer roosting habitat;
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees.

Habitat Questions for Northern Long-eared Bat:

Is suitable summer habitat, as defined above, located within 1000 feet of the project activities?

___ Unknown.
___ No. Conservation measures are not needed for this species unless otherwise indicated. **Additional habitat questions for this species are not applicable if suitable habitat is not present.**
_X_ Yes. The following conservation measures must be implemented in order to avoid adverse impacts on Northern long-eared bat.

NLEB CM-2: No removal of suitable trees or roosting structures between June 1 and July 31 (pup-rearing season).

NLEB CM-3: No removal of trees or woody vegetation. (This condition supercedes NLEB CM-2 if both conditions are listed.)

Conservation Measures Agreement

Based on the information contained in the report, follow the instructions for A, B or C below.

A) If one or more of the habitat questions were answered with "Yes", insert an "X" for one of the two Options below:

_X_ **Option 1.** For all species for which there is habitat present (as indicated by checking "Yes" to a habitat question) I understand and agree to implement and/or incorporate the conservation measures for those species as indicated. By agreeing to implement and/or incorporate the conservation measures for those species as indicated, no further consultation with the Nebraska Game and Parks Commission is required.

Sign and date on the line below, and also sign and date the Certification section. Submit a copy of the signed and dated (i.e. certified) report with any type of permit/application required for the project.

Applicant/project proponent signature

06/03/2024
Date

_____ **Option 2.** I have concerns regarding one or more of the conservation measures. Sign the Certification section below. When submitting the project as "Final" in CERT, please attach a separate document explaining your concerns with the conservation measures and why they cannot be implemented. Then, contact the Nebraska Game and Parks Commission for further information.

B) If one or more habitat questions were answered with "Unknown" then leave your project as "Draft" and contact the Nebraska Game and Parks Commission for more information. Once your concerns are addressed with the Commission, adjust your answer to "Yes" or "No", sign and date under the Certification section, upload the report using the File Attachments feature and change the Edit Status to "Final".

C) If ALL the habitat questions were answered "No" then sign the Certification section below and submit the project as "Final" in CERT. Once these steps are completed, no additional correspondence with the Nebraska Game and Parks Commission is required. Submit a copy of the signed report with any type of permit/application needed for the project.

Additional coordination with the U.S. Fish and Wildlife Service may be necessary depending on the determination made by the lead federal agency pursuant to their obligations under the Endangered Species Act (ESA).

Certification

I certify that ALL the project information in this report (including project location, project size/configuration, project type, project activities, answers to questions) is true, accurate and complete. If the project type, activities, location, size, or configuration of the project change; if a species listing status is reclassified; if a new species is listed; or if any of the answers to any questions asked in this report change, then this information is no longer valid, and we recommend generating a revised report through CERT to obtain an updated report.

Applicant/project proponent signature

06/03/2024
Date

Federal Laws

The following federal laws contribute to the conservation and management of fish and wildlife resources in the United States: Endangered Species Act, Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act, Clean Water Act, and the Fish and Wildlife Coordination Act. The National Environmental Policy Act (NEPA) requires compliance with these statutes and regulations.

U.S. Fish and Wildlife Service
Nebraska Ecological Services
9325 South Alda Road
Wood River, NE 68883
Phone: (308) 382-6468
Email: nebraskaes@fws.gov

U.S. Army Corps of Engineers
Omaha Regulatory Office
8901 South 154 Street
Omaha, NE 68138
Phone: (402) 896-0896
Email: NE404Reg@usace.army.mil

Bald and Golden Eagle Protection Act

The federal Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668-668c) provides for the protection of the bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*). Under the Eagle Act, "take" of eagles, their parts, nests or eggs is prohibited. Disturbance resulting in injury to an eagle or a decrease in productivity or nest abandonment by substantially interfering with normal breeding, feeding, or sheltering behavior is a form of "take."

Nebraska Specific Information

Bald eagles use mature, forested riparian areas near rivers, streams, lakes, and wetlands and occur along all the major river systems in Nebraska. The bald eagle southward migration begins as early as October and the wintering period extends from December-March. The golden eagle is found in arid open country with grassland for foraging in western Nebraska and usually near buttes or canyons which serve as nesting sites. Golden eagles are often a permanent resident in the Pine Ridge area of Nebraska. Additionally, many bald and golden eagles nest in Nebraska from mid-February through mid-July. Disturbances within 0.5-miles of an active nest or within line-of-sight of the nest could cause adult eagles to discontinue nest building or to abandon eggs. Both bald and golden eagles frequent river systems in Nebraska during the winter where open water and forested corridors provide feeding, perching, and roosting habitats, respectively. The frequency and duration of eagle use of these habitats in the winter depends upon ice and weather conditions. Human disturbances and loss of wintering habitat can cause undue stress leading to cessation of feeding and failure to meet winter thermoregulatory requirements. These affects can reduce the carrying capacity of preferred wintering habitat and reproductive success for the species.

To comply with the Eagle Act, it is recommended that the project proponent determine if the proposed project would impact bald or golden eagles or their habitats. This can be done by conducting a habitat assessment, surveying nesting habitat for active and inactive nests, and surveying potential winter roosting habitat to determine if it is being used by eagles. The area to be surveyed is dependent on the type of project; however for most projects we recommend surveying the project area and a ½ mile buffer around the project area. If it is determined that either species could be affected by the proposed project, the Commission recommends that the project proponent notify the Nebraska Game and Parks Commission as well as the Nebraska Field Office, U.S. Fish and Wildlife Service for recommendations to avoid "take" of bald and golden eagles.

Migratory Bird Treaty Act and Nebraska Revised Statute §37-540

We recommend the project proponent comply with the Migratory Bird Treaty Act (16 U.S.C. 703-712: Ch. 128 *as amended*) (MBTA). The project proponent should also comply with Nebraska Revised Statute §37-540, which prohibits take and destruction of nests or eggs of protected birds (as defined in Nebraska Revised Statute §37-237.01). Construction activities in grassland, wetland, stream, woodland, and river bank habitats that would result in impacts on birds, their nests or eggs protected under these laws should be avoided. Although the provisions of these laws are applicable year-round, most migratory bird nesting activity in Nebraska occurs during the period of May 1 to July 15. However, some migratory birds are known to nest outside of the aforementioned primary nesting season period. For example, raptors can be expected to nest in woodland habitats during February 1 through July 15, whereas sedge wrens, which occur in some wetland habitats, normally nest from July 15 to September 10. If development in this area is planned to occur during the primary nesting season or at any other time which may result in impacts to birds, their nests or eggs protected under these laws, we request that the project proponent arrange to have a qualified biologist conduct a field survey of the affected habitats to determine the absence or presence of nesting migratory birds. If a field survey identifies the existence of one or more active bird nests that cannot be avoided by the planned construction activities, the Nebraska Game and Parks Commission and the Nebraska Field Office, U.S. Fish and Wildlife Service should be contacted immediately. For more information on avoiding impacts to migratory birds, their nests and eggs, or to report active bird nests that cannot be avoided by planned construction activities, please contact the U.S. Fish and Wildlife Service and/or the Nebraska Game and Parks Commission (contact information within report). Adherence to these guidelines will help avoid unnecessary impacts on migratory birds.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (FWCA) requires consultation with the U.S. Fish and Wildlife Service (Service) and the State fish and wildlife agency (i.e., Nebraska Game and Parks Commission) for the purpose of preventing loss of and damage to fish and wildlife resources in the planning, implementation, and operation of federal and federaly funded, permitted, or licensed water resource development projects. This statute requires that federal agencies take into consideration the effect that the water related project would have on fish and wildlife resources, to take action to prevent loss or damage to these resources, and to provide for the development and improvement of these resources. The comments in this letter are provided as technical assistance only and are not the document required of the Secretary of the Interior pursuant to Section 2(b) of FWCA on any required federal environmental review or permit. This technical assistance is valid only for the described conditions and will have to be revised if significant environmental changes or changes in the proposed project take place. In order to determine whether the effects to fish and wildlife resources from the proposed project are being considered under FWCA, the lead federal agency must notify the Service in writing of how the comments and recommendations in this technical assistance letter are being considered into the proposed project.

Section 404 of the Clean Water Act

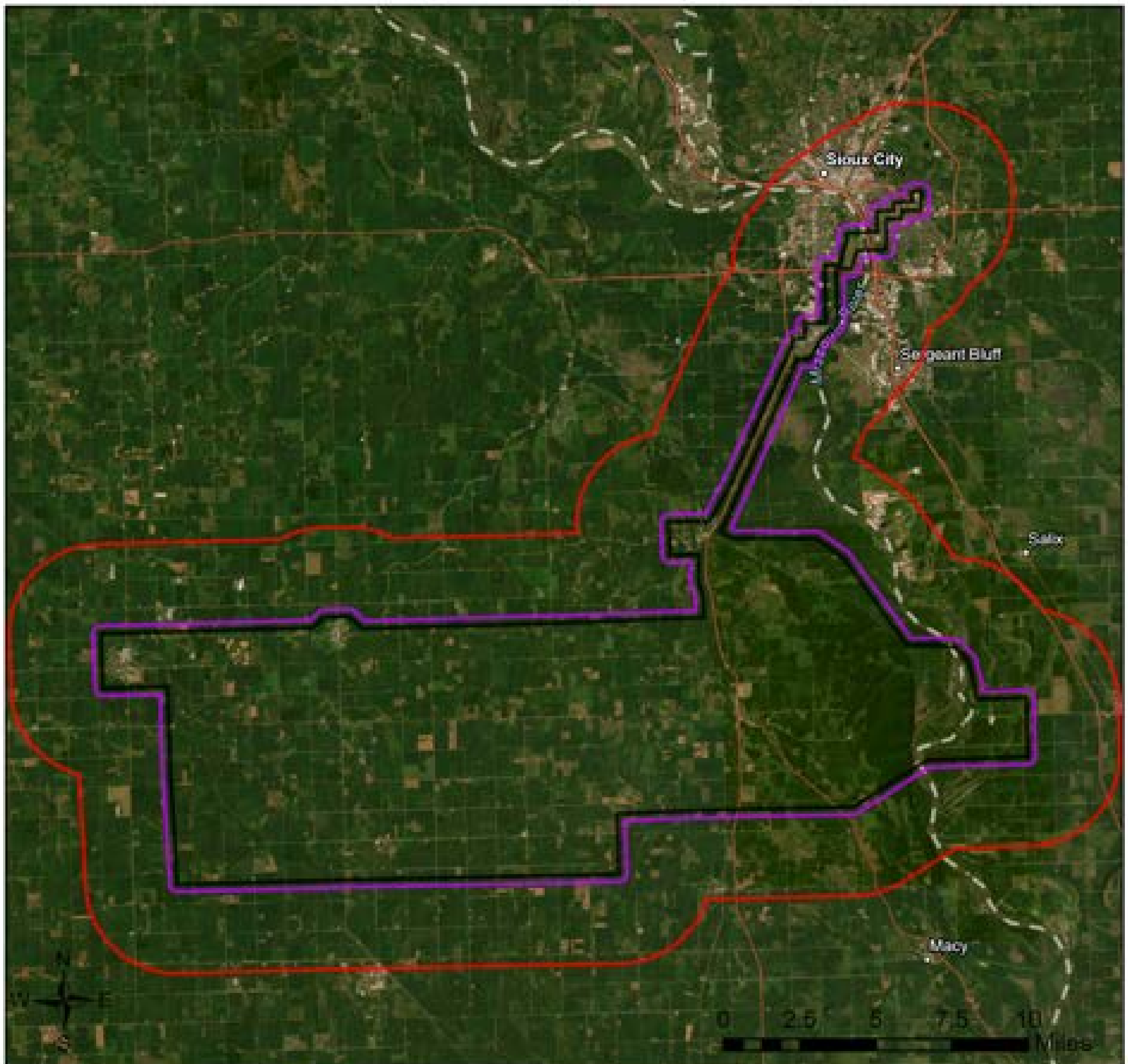
In general, the Nebraska Game and Parks Commission and the U.S. Fish and Wildlife Service have concerns for impacts to wetlands, streams and riparian habitats. We recommend that impacts to wetlands, streams, and associated riparian corridors be avoided and minimized, and that any unavoidable impacts to these habitats be mitigated. If any fill materials will be placed into waterways or wetlands, the U.S. Army Corps of Engineers Regulatory Office in Omaha should be contacted to determine if a 404 permit is needed.

Agency Contact Information

Nebraska Game and Parks Commission
Environmental Review Team
2200 North 33rd Street
Lincoln, NE 68503
Phone: (402) 471-5423
Email: ngpc.envreview@nebraska.gov

Winnebago Tribe of Nebraska Broadband Connectivity Project

Aerial Image Basemap With Locator Map



3-mile Information Buffer Boundary

Project Review Boundary

Project Boundary

Project Size (acres): 141,946.88

Lat/Long (DD): 42.2360 / -96.5897

County(s): Dakota; Dixon; Thurston; Wayne

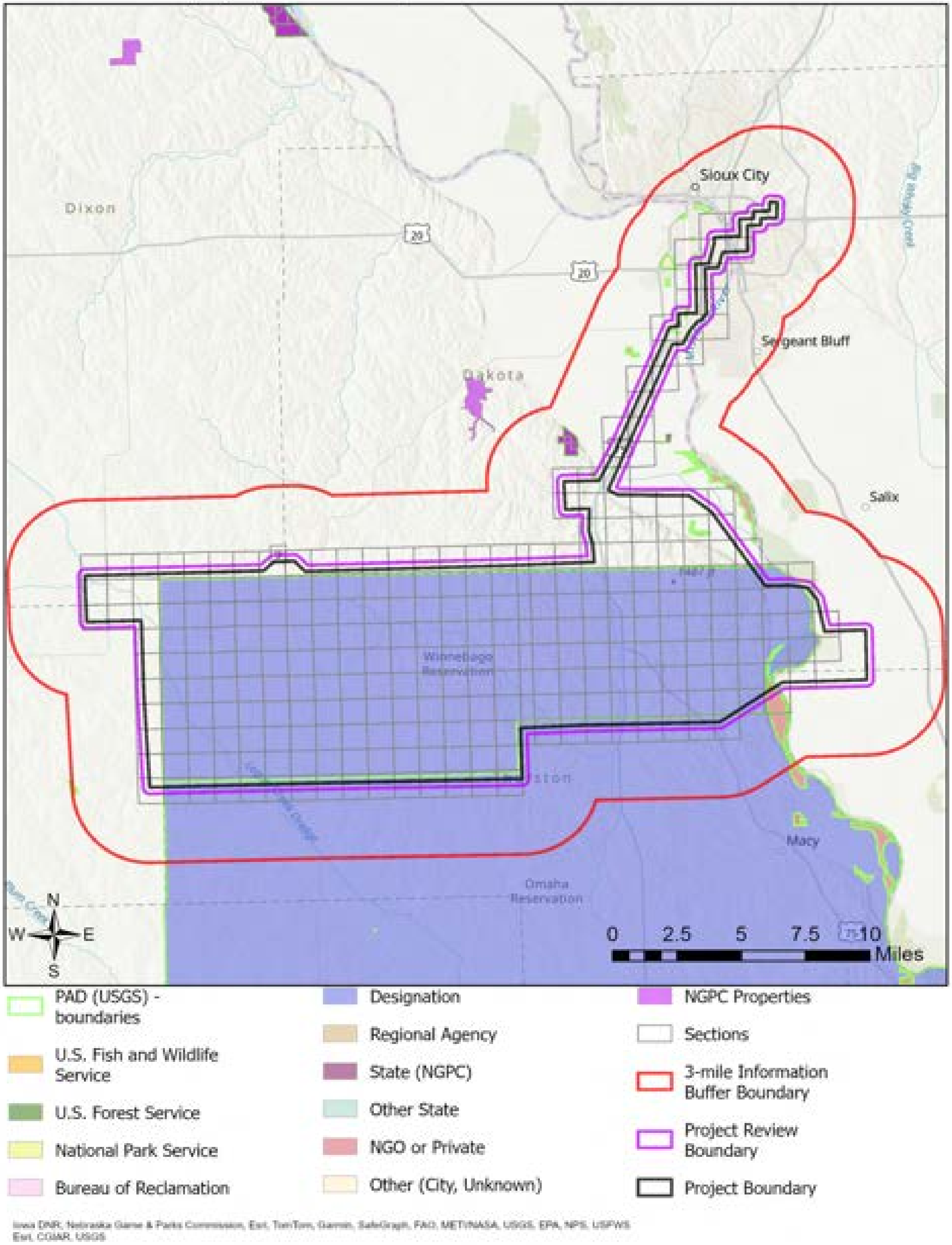
BUL(s): Missouri River; Thurston-Dakota Bluffs

Township/Range/Section(s): T25R05ES01; T25R05ES02; T25R05ES03; T25R05ES10; T25R05ES11 +

Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS
Earthstar Geographics
Iowa DNR, Nebraska Game & Parks Commission, Esri, TomTom, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS, USFWS

Winnebago Tribe of Nebraska Broadband Connectivity Project

Topographic Basemap With Sections and Protected Areas



Winnebago Tribe of Nebraska Broadband Connectivity Project

Web Map As Submitted By User

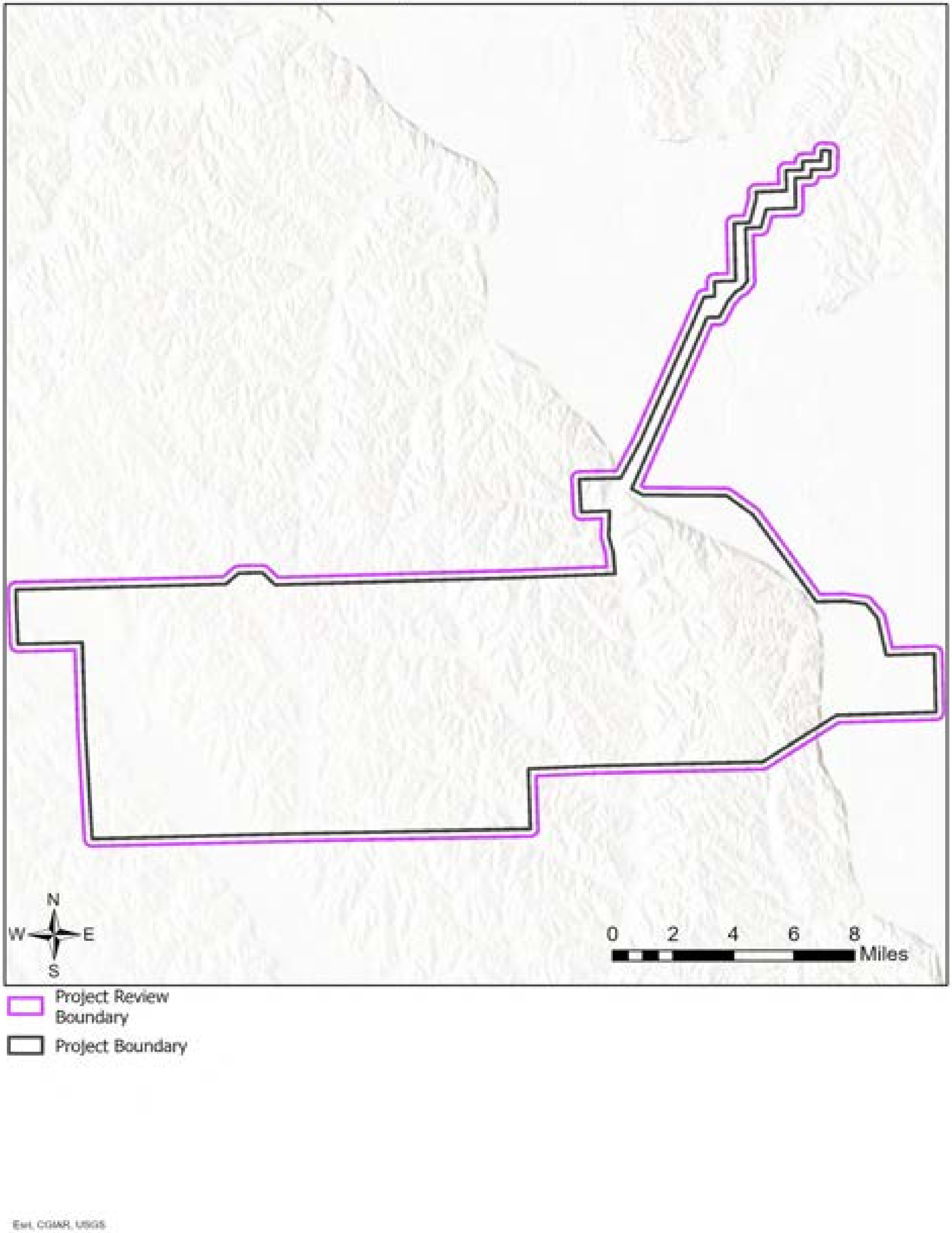


Table 1
Protected Areas in Immediate Vicinity of Project (project review area)

Area Name	Owner/Manager	Information Source
Beermann Park	City Land	USGS Protected Areas Database
Cardinal Park (South Sioux City High School Athletic Fields)	City Land	USGS Protected Areas Database
Cottonwood Cove Park	City Land	USGS Protected Areas Database
Lundberg Field	City Land	USGS Protected Areas Database
Odd Fellow Lodge Park	City Land	USGS Protected Areas Database
Omaha Reservation	Designation	USGS Protected Areas Database
Siouxland Trails	City Land	USGS Protected Areas Database
Sportsmanship Field	City Land	USGS Protected Areas Database
Wetlands Reserve Program (WRP), Dakota, NE	Private	USGS Protected Areas Database
Wetlands Reserve Program (WRP), Thurston, NE	Private	USGS Protected Areas Database
Winnebago Reservation	Designation	USGS Protected Areas Database

Table 2
Documented Occurrences in Immediate Vicinity of Project (project review area):
Natural communities and selected special areas

Name	Other Information	SRank	GRank
Bur Oak-Basswood-Ironwood Forest	Bur Oak-Basswood-Ironwood Forest	S2S3	GNR
Cottonwood-Peachleaf Willow Riparian Woodland	Cottonwood-Peachleaf Willow Riparian Woodland	S3	G3G4
Eastern Bulrush Deep Marsh	Eastern Bulrush Deep Marsh	S3	GNR
Eastern Cottonwood-Dogwood Riparian Woodland	Eastern Cottonwood-Dogwood Riparian Woodland	S2?	GNR
Eastern Riparian Forest	Eastern Riparian Forest	S3	G3G5
Eastern Sedge Wet Meadow	Eastern Sedge Wet Meadow	S1	GNR
Missouri River Valley Dune Grassland	Missouri River Valley Dune Grassland	S2	GNR
Red Oak-Basswood-Ironwood Forest	Red Oak-Basswood-Ironwood Forest	S2	G3G4
Missouri River Biologically Unique Landscape	Link to BUL document		
Thurston-Dakota Bluffs Biologically Unique Landscape	Link to BUL document		
Large Intact Block of Habitat for At-risk Species			

Table 3
Regional Documented Occurrences of Species within 1 Mile of Project Review Area:
Tier 1 and 2 at-risk species and additional S1-S3 plants

Scientific Name	Common Name	USFWS	State	SGCN	SRank	GRank	Taxonomic Group
Acipenser fulvescens	Lake Sturgeon		T	Tier 1	S1	G3G4	Vertebrate Animal - Fishes
Agastache scrophulariifolia	Purple Giant-hyssop			Tier 2	S1	G4	Vascular Plant - Dicots
Allium tricoccum var. burdickii	Ramp			Tier 2	S2	G4G5	Vascular Plant - Monocots
Anguilla rostrata	American Eel			Tier 2	SNR	G4	Vertebrate Animal - Fishes
Anodonta suborbiculata	Flat Floater			Tier 1	S1	G5	Invertebrate Animal - Freshwater Mussels
Aralia racemosa	Spikenard			Tier 2	S1	G5	Vascular Plant - Dicots
Boechera dentata	Short's Rock Cress			Tier 2	S2	G5	Vascular Plant - Dicots
Brachyelytrum erectum	Bearded Short-husk			Tier 2	S2	G5	Vascular Plant - Monocots
Caulophyllum thalictroides	Blue Cohosh			Tier 2	S1	G5	Vascular Plant - Dicots
Cirsium discolor	Field Thistle				S1S2	G5	Vascular Plant - Dicots
Cuscuta umbrosa	Big-fruit Dodder			Tier 2	S1S3	G5	Vascular Plant - Dicots
Cycleptus elongatus	Blue Sucker			Tier 1	S1	G3G4	Vertebrate Animal - Fishes
Dactylorhiza viridis	Long-bract Green Orchid			Tier 2	S1	G5	Vascular Plant - Monocots
Dryopteris carthusiana	Spinulose Wood Fern			Tier 2	S2	G5	Vascular Plant - Leptosporangiate Ferns
Erysimum inconspicuum	Small-flower Wallflower			Tier 2	S2	G5	Vascular Plant - Dicots
Erythronium mesochoreum	Prairie Fawn-lily			Tier 2	S2	G4G5	Vascular Plant - Monocots
Galearis spectabilis	Showy Orchis			Tier 2	S1	G5	Vascular Plant - Monocots
Haliaeetus leucocephalus	Bald Eagle			Tier 2	S3	G5	Vertebrate Animal - Birds
Hybognathus argyritis	Western Silvery Minnow			Tier 1	S2	G4	Vertebrate Animal - Fishes
Hybognathus placitus	Plains Minnow			Tier 1	S2	G4	Vertebrate Animal - Fishes
Lasionycteris noctivagans	Silver-haired Bat			Tier 1	S3	G3G4	Vertebrate Animal - Mammals
Lilium michiganense	Turk's Cap Lily				S2S4	G5	Vascular Plant - Monocots
Lota lota	Burbot			Tier 2	S1	G5	Vertebrate Animal - Fishes
Macrhybopsis gelida	Sturgeon Chub		E	Tier 1	S1	G3	Vertebrate Animal - Fishes
Macrhybopsis hyostoma	Shoal Chub			Tier 2	S3	G5	Vertebrate Animal - Fishes
Macrhybopsis meeki	Sicklefin Chub			Tier 1	S1	G3	Vertebrate Animal - Fishes

Table 3
Regional Documented Occurrences of Species within 1 Mile of Project Review Area:
Tier 1 and 2 at-risk species and additional S1-S3 plants

Scientific Name	Common Name	USFWS	State	SGCN	SRank	GRank	Taxonomic Group
Macrhybopsis storeriana	Silver Chub			Tier 2	S2	G5	Vertebrate Animal - Fishes
Matteuccia struthiopteris var. pensylvanica	Ostrich Fern			Tier 2	S1	G5T5	Vascular Plant - Leptosporangiate Ferns
Myotis septentrionalis	Northern Long-eared Myotis	T	T	Tier 1	S1S2	G1G2	Vertebrate Animal - Mammals
Nelumbo lutea	American Lotus			Tier 2	S1S3	G4	Vascular Plant - Dicots
Patis racemosa	Black-seed Ricegrass			Tier 2	S2	G5	Vascular Plant - Monocots
Pellaea atropurpurea	Purple-stem Cliff-brake			Tier 2	S2	G5	Vascular Plant - Leptosporangiate Ferns
Perimyotis subflavus	Tricolored Bat			Tier 1	S3	G2G3	Vertebrate Animal - Mammals
Pimephales notatus	Bluntnose Minnow			Tier 2	S3	G5	Vertebrate Animal - Fishes
Platygobio gracilis	Flathead Chub			Tier 1	S2	G5	Vertebrate Animal - Fishes
Polyodon spathula	Paddlefish			Tier 2	S2	G4	Vertebrate Animal - Fishes
Ranunculus recurvatus var. recurvatus	Hooked Buttercup			Tier 2	S2	G5T5	Vascular Plant - Dicots
Scaphirhynchus albus	Pallid Sturgeon	E	E	Tier 1	S1	G2	Vertebrate Animal - Fishes
Stachys hispida	Hispid Hedge-nettle			Tier 2	S1	G5T4Q	Vascular Plant - Dicots
Ulmus thomasii	Rock Elm				S2S4	G5	Vascular Plant - Dicots
Viburnum lentago	Nannyberry			Tier 2	S1	G5	Vascular Plant - Dicots

Table 4
Potential Occurrences in Immediate Vicinity of Project (project review area):
Special status species (Tier 1 at-risk species and Bald and Golden Eagle), based on models or range maps

Scientific Name	Common Name	Data Type	USFWS	State	SGCN	SRank	GRank	Taxonomic Group
Acipenser fulvescens	Lake Sturgeon	Model		T	Tier 1	S1	G3G4	
Ammodramus henslowii	Henslow's Sparrow	Range			Tier 1	S1	G4	
Anodonta suborbiculata	Flat Floater	Range			Tier 1	S1	G5	
Argynnis idalia	Regal Fritillary	Range			Tier 1	S3	G3?	
Asio flammeus	Short-eared Owl	Range			Tier 1	S2	G5	
Atrytone arogos iowa	Iowa Skipper	Range			Tier 1	S1	G2G3T2T3	

Table 4
Potential Occurrences in Immediate Vicinity of Project (project review area):
Special status species (Tier 1 at-risk species and Bald and Golden Eagle), based on models or range maps

Scientific Name	Common Name	Data Type	USFWS	State	SGCN	SRank	GRank	Taxonomic Group
Boloria myrina nebraskensis	Nebraska Fritillary	Range			Tier 1	SNR	G5?T3T4	
Calidris subruficollis	Buff-breasted Sandpiper	Range			Tier 1	S2N	G4	
Catocala nuptialis	Married Underwing	Range			Tier 1	SNR	G3	
Catocala whitneyi	Whitney Underwing	Range			Tier 1	S1	G2G3	
Coccyzus erythropthalmus	Black-billed Cuckoo	Range			Tier 1	S3	G5	
Cycleptus elongatus	Blue Sucker	Range			Tier 1	S1	G3G4	
Danaus plexippus	Monarch	Range			Tier 1	S2	G4	
Emydoidea blandingii	Blanding's Turtle	Range			Tier 1	S4	G4	
Euphyes bimacula illinois	Two-spotted Skipper	Range			Tier 1	S3	G4T1T2	
Euphyes conspicua buchholzi	Bucholz Black Dash	Range			Tier 1	S1	G4G5T1	
Fundulus sciadicus	Plains Topminnow	Range			Tier 1	S3	G4	
Haliaeetus leucocephalus	Bald Eagle	Range			Tier 2	S3	G5	
Hesperia ottoe	Ottoe Skipper	Range			Tier 1	S2	G3	
Hybognathus argyritis	Western Silvery Minnow	Range			Tier 1	S2	G4	
Hybognathus placitus	Plains Minnow	Range			Tier 1	S2	G4	
Hylocichla mustelina	Wood Thrush	Range			Tier 1	S3	G4	
Lanius ludovicianus	Loggerhead Shrike	Range			Tier 1	S3	G4	
Lasionycteris noctivagans	Silver-haired Bat	Range			Tier 1	S3	G3G4	
Lasiurus borealis	Eastern Red Bat	Range			Tier 1	S3	G3G4	
Lasiurus cinereus	Hoary Bat	Range			Tier 1	S3	G3G4	
Lethe eurydice fumosus	Smoky-eyed Brown	Range			Tier 1	S3	G5T3T4	
Macrhybopsis gelida	Sturgeon Chub	Model		E	Tier 1	S1	G3	
Myotis lucifugus	Little Brown Myotis	Range			Tier 1	SNR	G3G4	
Myotis septentrionalis	Northern Long-eared Myotis	Range	E	E	Tier 1	S1S2	G2G3	
Panax quinquefolius	American Ginseng	Model		T	Tier 1	S1	G3G4	

Table 4
Potential Occurrences in Immediate Vicinity of Project (project review area):
Special status species (Tier 1 at-risk species and Bald and Golden Eagle), based on models or range maps

Scientific Name	Common Name	Data Type	USFWS	State	SGCN	SRank	GRank	Taxonomic Group
Perimyotis subflavus	Tricolored Bat	Range			Tier 1	S3	G3G4	
Perognathus flavescens perniger	Plains Pocket Mouse	Range			Tier 1	SNR	G5TNR	
Platygobio gracilis	Flathead Chub	Range			Tier 1	S2	G5	
Scaphirhynchus albus	Pallid Sturgeon	Model	E	E	Tier 1	S1	G2	

Appendix E

Section 106 Compliance

Cultural Resources Introduction

Olsson, on behalf of Winnebago (the Proponent), has proposed the construction of the Winnebago Broadband project (the Project) in Dakota, Dixon, and Thurston Counties of Nebraska, and within Monona and Woodbury Counties of Iowa. Beaver Creek Archaeology, Inc. (BCA) was hired by Olsson on behalf of the Proponent to complete a cultural resources investigation, including a cultural resources literature review. The purpose of this investigation was to assess what, if any, cultural resources or historic properties are documented within the Project Area that may potentially be impacted by the Project.

While the vast majority of the Project is located within the exterior reservation bounds of the Winnebago Tribe of Nebraska, there are large segments of the Project being proposed off-reservation in Nebraska and Iowa. Accordingly, the Bureau of Indian Affairs (BIA) Aberdeen Office, Winnebago Tribal Historic Preservation Office (THPO), Nebraska State Historic Preservation Office (SHPO), and the Iowa SHPO are all to be directly involved in the project. Moreover, the United States Army Corps of Engineers (USACE) is also involved in the project as part of the Proponent's compliance efforts with the Clean Water Act (CWA). The overall lead federal agency for the project is the National Telecommunications and Information Administration (NTIA). Neither the Nebraska nor Iowa SHPO offices will be deferring any of their consultation responsibilities for the off-reservation portions of the Project. Federal and State agency consultation efforts are being led or otherwise overseen by the NTIA project lead.

Cultural Resources Objective

Due to federal agency(ies) participation in the Project, this project is considered a federal undertaking, and it is subject to the federal laws and regulations of the Section 106 process under the National Historic Preservation Act (NHPA), as amended and defined in 36 CFR Part 800, as well as the National Environmental Policy Act (NEPA). The NHPA requires the agency to consider what effects the undertaking will have on Historic Properties within the survey area, and the agency requires that the applicant provide the necessary data for the agency to consider such effects. The three central objectives of this study are to assist the Proponent with their compliance obligations, identify and assess project impacts to cultural resources located within the survey area, and provide National Register of Historic Places (NRHP) recommendations for Historic Properties encountered within the survey area. In addition, the scientific objective of the study is to gather more comparative information that can be used to answer questions posed in the state plan.

Historic Properties, as defined in the NHPA [54 U.S.C. § 300308], consist of any "prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on, the National Register of Historic Places, including artifacts, records, and material remains related to such a property or resource." Cultural resource(s) is a generic and overarching term used by Cultural Resource Management (CRM) professionals and can be used in reference to different site types, including archaeological, historical, and architectural sites, as well as properties of traditional, cultural, or religious importance that may or may not be eligible for inclusion on the NRHP.

Evaluation Criteria

To be eligible for inclusion on the NRHP, a site must usually be more than 50 years old, and retain sufficient historic integrity to communicate significance based on one or more of the following seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association. Furthermore, the site must meet at least one of the following criteria:

(a) Associated with events that have made a significant contribution to the broad patterns of our history; or

(b) Associated with the lives of persons significant in our past; or

(c) Embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinctions; or

(d) Have yielded, or maybe likely to yield, information important in prehistory or history.

In addition, cultural resources that hold traditional, cultural, or religious significance may be eligible for the NRHP if the National Register Criteria mentioned above are met.

Cultural Resources Literature Search

Beaver Creek Archaeology (BCA) personnel conducted a literature search and review with both the Nebraska and Iowa SHPOs as well as with the BIA Aberdeen Office archaeologist. The literature searches indicated that fifty-two (52) projects overlapped with the Project.

The literature (files) searches revealed that the site distribution is moderate to dense within 150' of the Project and contained forty (40) previously recorded cultural resource sites, thirty-one (31) THPO sensitive and protected site locations (some of which overlap with previously documented cultural resources sites on file with the SHPO), seven (7) historic Indian locations, and one notable location. Of the 40 previously documented sites, five (5) have been listed on the NRHP. These results are included in tabular form in Tables 1 and 2 below. Twenty-six (26) of the aforementioned previously recorded cultural resource sites cross into the Project. These results are included in tabular form in Table 3 below. Of those 26 previously documented cultural resource sites, four (4) have been listed on the NRHP.

Additionally, Olsson personnel Rodney Martin conducted a sensitive areas review and discussion with the Winnebago THPO, Sunshine Bear, for the portion of the project located within the exterior bounds of the Winnebago reservation. The need to know of this review and discussion was provided to BCA by Olsson. As part of the THPO sharing of this information, neither Olsson nor BCA will release the results or any other details of the THPO-sensitive areas, aside from listing the number of areas considered and subsequently avoided as part of the project designing process.

Table 1. Previously recorded Cultural Resources within 150' of the Project Area.

SITS #	Affiliation	Description	NRHP Status
25TS49	Farm/Ranch	Cultural Material (Ineligible Determined by SHPO)	Ineligible
25TS48	Period Unknown	Cultural Material (Ineligible Determined by SHPO)	Ineligible
25TS6	Period Unknown	Burials	Unevaluated

SITS #	Affiliation	Description	NRHP Status
25TS33	Period Unknown	Cultural Material (Ineligible Determined by SHPO)	Ineligible
25TS10	Period Unknown	Bison Bone, Shell, FCR, Pottery	Unevaluated
25TS11	Period Unknown	Projectile Points, Awl, Flakes, Bison Bone, Shell & Pottery, Bean and Squash Seeds	Unevaluated
25TS22	Education, Omaha, Winnebago	Cultural Material	Unevaluated
25TS2	Period Unknown	Depressions, 1 Pit, Small Burial	Unevaluated
DX09-001	**Historical**	**Swedish Evangelical Lutheran Salem Church *(On the Register #83001088)***	**Eligible/Listed on the NRHP**
25DX50	Plains Woodland	CM Scatter: Chipped Stone Tools, Body Sherds	Eligible
DX04-003	**Historical**	**Emerson City Park *(On the Register #100002165)***	**Eligible/Listed on the NRHP**
DK00-113	**Historical**	**Ben Bonderson Farm *(On the Register #06000993)***	**Eligible/Listed on the NRHP**
25DK7	Plains Woodland, St. Helena Phase	Unknown	Unevaluated
25DK9	St. Helena Phase	Unknown	Unevaluated
25DK15	Period Unknown	Cultural Material	Unevaluated
25DK16	Period Unknown	Human Remains	Unevaluated
25DK14	St. Helena Phase	Cultural Material	Eligible
25DK2	Period Unknown	Burial Mounds/Cemetery	Eligible
25DK20	Period Unknown	Cultural Material	Unevaluated
25DK51	Euro-American	4 Structures, 2 Foundations, CM Scatter: Historic Artifacts, Faunal Remains	Ineligible
25DK8	Period Unknown	Cultural Material	Unevaluated
25DK501	Euro-American	Water Powered Flour Mill	Ineligible
25TS14	Omaha	Village	Unevaluated
25DK5	**Period Unknown**	**Ton-wa-ton-ga/Omaha Big Village *(On the Register #73001058)***	**Eligible/Listed on the NRHP**
25TS9	Woodland	Cultural Material	Unevaluated
DK00-001	**Historical**	**Cornelius O'Connor House *(On the Register #77000826)***	**Eligible/Listed on the NRHP**
25DK1	Period Unknown	Cultural Material	Unevaluated
25DK22	Period Unknown	Cultural Material	Eligible
25DK4	Period Unknown	Cultural Material	Unevaluated
25DK47	Period Unknown	Cultural Material	Eligible
25TS49	Farm/Ranch	Cultural Material (Ineligible Determined by SHPO)	Ineligible

NOTE: Bolded sites are listed on the National Register of Historic Places (NRHP).

Iowa sites with undefined boundaries near the project include 13WD184 and 13WD189. Based on the file search results, the undefined site locations are approximately 200' from the project's centerline.

Table 2. Iowa SHPO Historic Indian Locations (HILD) within 150' of the Project Area.

HILD	Description
7	Floyd's Bluff post, County Seat 1848-(13WD184)
1053	1854 Battle
10	Omaha Claim
956	Winnebago Tribe of Nebraska Reservation Property, WinneVagas Casino
957/958	Winnebago Tribe of Nebraska Property
1106	Lewis and Clark CampLewis and Clark Expedition 17-20 Aug 1804 Also, has a Notable Location Number: XX7906: Lewis and Clark camp
651	Omaha Tti-ttaga Ziga Village

The Iowa SHPO has one Notable Location documented within 150' of the proposed Project Area. That location is XX7906: Lewis and Clark camp, which is also listed as HILD 1106.

Cultural Resources Literature Review Conclusion

The purpose of this cultural resources literature search and review is to update the Proponent and the NTIA with the knowledge of previously recorded cultural resources, THPO sensitive areas, and previous cultural inventories within and surrounding the proposed project area.

In addition, this literature review emphasizes the importance of avoiding or otherwise minimizing potential impacts or adverse effects to NRHP-listed resources, cultural resources recommended as eligible or unevaluated for the NRHP, and areas considered sensitive to the consulting THPOs. Moreover, this review seeks to highlight and alert the Proponent as to the numerous previously documented human remains locations within and immediately adjacent to the proposed project.

As a result, BCA recommends additional cultural resource inventories. Prior to such inventories being initiated, due to the number and nature of sites to be affected by the proposed project, BCA further recommends that both the Nebraska and Iowa SHPOs, as well as, at minimum, the Winnebago and Omaha THPOs, be consulted before any fieldwork is initiated. This pre-fieldwork consultation is being specifically emphasized by BCA, due to the nature of the cultural resources and historic properties documented within the Project Area (Table 3 below) and the HILD and notable locations (Table 2 above). Such consultation should seek to define the nature and extent of any expected pedestrian field inventories and associated additional efforts, as well as to consider any potential mitigation measures.

Additionally, BCA recommends that, at minimum, the Winnebago and Omaha THPOs are invited to participate in any field investigations they are interested in, especially within and immediately adjacent to the town of Homer, Nebraska. At present, it is BCA's understanding that no direct effects are anticipated to occur to NRHP-listed structure sites such as the Swedish Evangelical Lutheran Salem Church (DX09-001) as the line would be meant to provide broadband service to the structure.

As currently proposed, neither a finding of *No Adverse Effect to Historic Properties* nor a finding of *No Historic Properties Affected* cannot be achieved. Therefore, BCA *does not* recommend this project proceed as it is currently planned until consultation has been completed with all involved consulting parties, including, but not limited to, the Nebraska SHPO, the Iowa SHPO, the Omaha THPO, the Winnebago THPO, as well as the BIA and USACE.

Table 3. Previously Recorded Cultural Resources within the Project Area.

SITS #	Affiliation	Description	NRHP Recommendation/NRHP Status
25DK1	Period Unknown	Cultural Material	Unevaluated
25DK14	St. Helena Phase	Cultural Material	Eligible
25DK15	Period Unknown	Cultural Material	Unevaluated
25DK16	Period Unknown	Human Remains	Unevaluated
25DK2	Period Unknown	Burial Mounds/Cemetery	Eligible
25DK22	Period Unknown	Cultural Material	Eligible
25DK4	Period Unknown	Cultural Material	Unevaluated
25DK5	**Period Unknown**	**Ton-wa-ton-ga/Omaha Big Village *(On the Register #73001058)***	**Eligible/Listed on the NRHP**
25DK501	Euro-American	Water Powered Flour Mill	Ineligible
25DK51	Euro-American	4 Structures, 2 Foundations, CM Scatter: Historic Artifacts, Faunal Remains	Ineligible
25DK7	Plains Woodland, St. Helena Phase	Unknown	Unevaluated
25DK8	Period Unknown	Cultural Material	Unevaluated
25DK9	St. Helena Phase	Unknown	Unevaluated
25TS10	Period Unknown	Bison Bone, Shell, FCR, Pottery	Unevaluated
25TS11	Period Unknown	Projectile Points, Awl, Flakes, Bison Bone, Shell & Pottery, Bean and Squash Seeds	Unevaluated
25TS14	Omaha	Village	Unevaluated
25TS2	Period Unknown	Depressions, 1 Pit, Small Burial	Unevaluated
25TS22	Education, Omaha, Winnebago	Cultural Material	Unevaluated
25TS33	Period Unknown	Cultural Material *(Ineligible Determined by SHPO)*	Ineligible
25TS48	Period Unknown	Cultural Material *(Ineligible Determined by SHPO)*	Ineligible
25TS49	Farm/Ranch	Cultural Material *(Ineligible Determined by SHPO)*	Ineligible
25TS6	Period Unknown	Burials	Unevaluated
25TS9	Woodland	Cultural Material	Unevaluated
DK00-001	**Historical**	**Cornelius O'Connor House *(On the Register #77000826)***	**Eligible/Listed on the NRHP**
DK00-113	**Historical**	**Ben Bonderson Farm (*On the Register #06000993)***	**Eligible/Listed on the NRHP**
DX09-001	**Historical**	**Swedish Evangelical Lutheran Salem Church (*On the Register #83001088)***	**Eligible/Listed on the NRHP**

NOTE: Bolded sites are listed on the National Register of Historic Places (NRHP).

UNITED STATES DEPARTMENT OF COMMERCE
National Telecommunications and Information Administration
Washington, DC 20230

February 21, 2024

Ms. Sunshine Bear
Tribal Historic Preservation Office
Winnebago Tribe of Nebraska
PO Box 687
Winnebago, NE 68071

Subject: Section 106 Finding of No Historic Properties Affected Submitted to the Winnebago Tribe of Nebraska Tribal Historic Preservation Office (THPO) for the Winnebago Tribe of Nebraska (Federal Grant #NT22TBC0290076) Broadband Fiber Project

Dear Ms. Bear,

The Winnebago Tribe of Nebraska (Grantee) was awarded funding for a proposed Broadband Connectivity Project (Project) under the U.S. Department of Commerce, National Telecommunications and Information Administration (NTIA) Tribal Broadband Connectivity Program (TBCP). The purpose of the Project is to deploy a broadband infrastructure network on the Winnebago Reservation and in the adjacent communities of Emerson, Homer, and Wakefield, Nebraska to connect unserved/underserved tribal households, businesses, and community anchor institutions (i.e., schools, medical facilities) to reliable and affordable high-speed Internet. The Project would provide qualified broadband service with a minimum speed of 200/40 megabits per second (Mbps) to approximately 600 unserved Native American households, 40 unserved Native American and/or tribal businesses, and 16 tribal anchor institutions. In addition, the Project includes a rate stabilization program designed to provide up to a maximum payment on broadband household monthly bills to alleviate the burden felt most heavily by those in poverty and to prevent disconnection of service.

The fiber-optic installation alignment is generally located on the Winnebago Tribe of Nebraska Reservation, which spans approximately 120,000 acres and is situated primarily in a rural area in the northern half of Thurston County in northeast Nebraska, 20 miles south of Sioux City, Iowa, and 80 miles north of Omaha, Nebraska. U.S. highways 75 and 77 join in the east-central area of the reservation, near the community of Winnebago. A small portion of the reservation is located directly east of the Iowa-side of the Missouri River west of Interstate 29 in Woodbury County.

Portions of the fiber-optic alignment also extend to communities just outside of the reservation, including the northern portion of Emerson (the southern half of Emerson is within the reservation; Dakota, Dixon, and Thurston counties), Homer (Dakota County), and Wakefield (Dixon and Wayne counties). In addition, the fiber-optic alignment extends north to the Western Iowa Technical Community College in Sioux City, Iowa and a very small portion outside of the southern Winnebago Reservation boundary in Iowa (Woodbury County). Refer to the attached

Figures for a depiction of the project location. The fiber-optic alignment includes two crossings under the Missouri River at approximately River Miles (RMs) 711.0 and 729.7. The southern crossing will connect those southern portions of the reservation on the Iowa side of the river.

The Project is expected to facilitate economic development and commercial activity, create remote employment and entrepreneurial opportunities, and increase availability of remote learning and telehealth services.

1. Description of the Undertaking

The proposed action involves the construction of a multi-conduit, underground Fiber to the Premises (FTTP) system capable of 200 Mbps download speeds and 40 Mbps upload speeds. In total, approximately 235 miles of new fiber-optic cable would be buried within protective conduit along existing road right-of-way (ROW) and under the Missouri River in the project area. The buried fiber-optic line installation, which consists of the telecommunications cable and its protective conduit, would be performed using plowing and trenching construction techniques along roadways, and a directional boring machine would be used to install line under waterway, road, and railroad crossings. In addition, to facilitate operation and maintenance of the Fiber to the Home (FTTP) system, ancillary equipment would be installed along the alignment including optical line terminals (OLT), vaults, handholes, pedestals, markers, and network interface devices (NID).

Approximately 156 miles of the proposed installations would be performed using plowing or trenching construction techniques within existing road ROW. Plowed conduit would be installed using a track-type bulldozer equipped with a specialized single ripper that loosens the soil along the installation path. Conduit would be fed either from the plow bulldozer or from a separate truck-mounted reel through a plow chute attached to the ripper and laid directly at a nominal depth of approximately 36 to 48 inches, depending on permit requirements. A compaction machine would follow directly behind the plow bulldozer and restore the ground surface to its original contour. The installation path may be preripped by a second bulldozer, if necessary, to loosen the soil in areas where subsurface rock or other buried obstructions may be present. This second bulldozer may also, in some cases, be attached to the plow bulldozer to provide additional pulling power for the plowing operation. Ground disturbance associated with the plowed installation would be limited to an approximately 8-foot-wide corridor. In areas that are too narrow for plowing equipment to be used and where directional boring is not required to avoid surface disturbance, trenching construction techniques would be used for the conduit installations. Typically, a backhoe would be used to dig the required trench, although a compact excavator may be used in areas that are exceedingly narrow. The nominal trench depth would be the same as for plowed installations, but the disturbance width would be less.

Approximately 78 miles of the proposed installations would be performed using directional boring construction techniques. Directional boring is a method used to install utility lines under waterways and roads and in other areas where the avoidance of surface disturbance is desirable. Directional boring machines are horizontal drilling rigs with a steerable drill bit. In general, each bore begins with the creation of a pilot hole (entry pit), through which the drill bit is guided by the operator as it progresses along the desired boring path toward the exit pit. After the pilot hole has been bored, conduit is attached to the end of the drill string, and the conduit is pulled back through the bore.

In addition to shorter road and railroad boring installations, the proposed action includes horizontal drilling underneath the Missouri River from Nebraska to Iowa at RM 711.0 (with a bore length of approximately 5,240 feet) and RM 729.7 (with a bore length of approximately 1,670 feet). For this installation, a drilling rig would be stationed at a fixed point, or entry pit, where the operator installs a piloted drilling bit while adding segments of drill rod at predetermined depths horizontally across the river. At the surface level, a locator assists the rig operator by locating the position and the depth of the piloted drilling bit as it moves away from the drilling rig. While drilling, the rig operator would continuously inject an inert clay-based fluid that lubricates and stabilizes the bore hole. This process would continue until the piloted drilling bit reaches the exit pit on the other side of the river. The piloted drilling bit would then be removed, and stages of larger reamers and drill rod would be added and pulled toward the rig operator to enlarge the hole in preparation for pipe installation. This method allows for the continuous monitoring of the bore hole and maintains a pathway until the pipe package is ready for installation. Once the hole is large enough for the determined diameter of pipe(s), the pipe package would be connected to the drilling rods and pulled across the river toward the drilling rig operator. The pipe package would then be secured at both the entry and exit pits, and the annular space around the pipe package would be filled/grouted if required or determined necessary and the ground surface restored to its original contour.

Exploratory drill borings were completed on July 26, November 3, and November 7, 2023, to determine the soil structure of the proposed drill holes. The drilling method used was a hollow-stem from 0 to 15 feet then a rotary drill to 100 feet (termination). This method was used to determine the stratigraphy of the soils to be certain that the borings under the river will hold. The general stratigraphy of the boring holes consisted of native sand and clay and imported clay fill material.

Attached please find both KMZ and a zipped folder with Shapefiles (projected in Coordinate System: NAD_1983_UTM_Zone_14N) of the proposed alignment as well as any staging/stockpile/laydown areas on both sides of the river. The Bureau of Indian Affairs (BIA) Great Plains Archeologist has surveyed these staging areas. These files also include known previously recorded resources and any previous archaeological surveys within 150 feet of the proposed centerline that was received as part of the file search. To aid in project understanding, a file outlining the proposed construction equipment and methods that are planned for the project is also attached. Please note, the Horizontal Bore/Pneumatic Drilling method will be limited to the borings under the Missouri River.

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The attached APE is the area within which an undertaking may affect a historic property, either directly or indirectly. The Area of Potential Effect is the maximum area of disturbance for the proposed project in Nebraska and Iowa.

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The literature review covered the entirety of the proposed project area plus a one-mile buffer. The literature review revealed 201 previously documented cultural resources within a one-mile radius of the project area. Approximately 82 cultural resources were on file at the Nebraska SHPO, 81 through the Winnebago Tribal Historic Preservation Offices (THPO), and 38 were on file at the Iowa Office of State Archeology (OSA). Reach out to NTIA for copy of cultural resources report if you want to review. File was too large to send through TCNS.

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Due to the lack of recent previous archaeological survey in the remainder of the inventory area, along with the high probability for cultural resources and/or human remains, the NTIA requires that the Winnebago Tribe of Nebraska maintain the currently planned route and remain within existing ground disturbances when working within or near (within 100' of) the remaining 20 previously documented NRHP listed, eligible, or unevaluated cultural resource sites (see attached cultural resources report). Archaeological and tribal monitoring will occur when construction is occurring within and near to (within 100' of) each the sites in Table 4 of the cultural resources report. Reach out to NTIA for copy of cultural resources report if you want to review. File was too large to send through TCNS.

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Table 1: Iowa SHPO Historic Indian Locations within 150 feet of the Project Area

HILD	Description
7	Floyd's Bluff post, County Seat 1848-(13WD184)
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10	Omaha Claim
956	Winnebago Tribe of Nebraska Reservation Property, WinneVagas Casino
957/958	Winnebago Tribe of Nebraska Property
1106	Lewis and Clark Camp Lewis and Clark Expedition 17-20 Aug 1804 Also, has a Notable Location Number: XX7906: Lewis and Clark camp
651	Omaha Tti-ttaga Ziga Village

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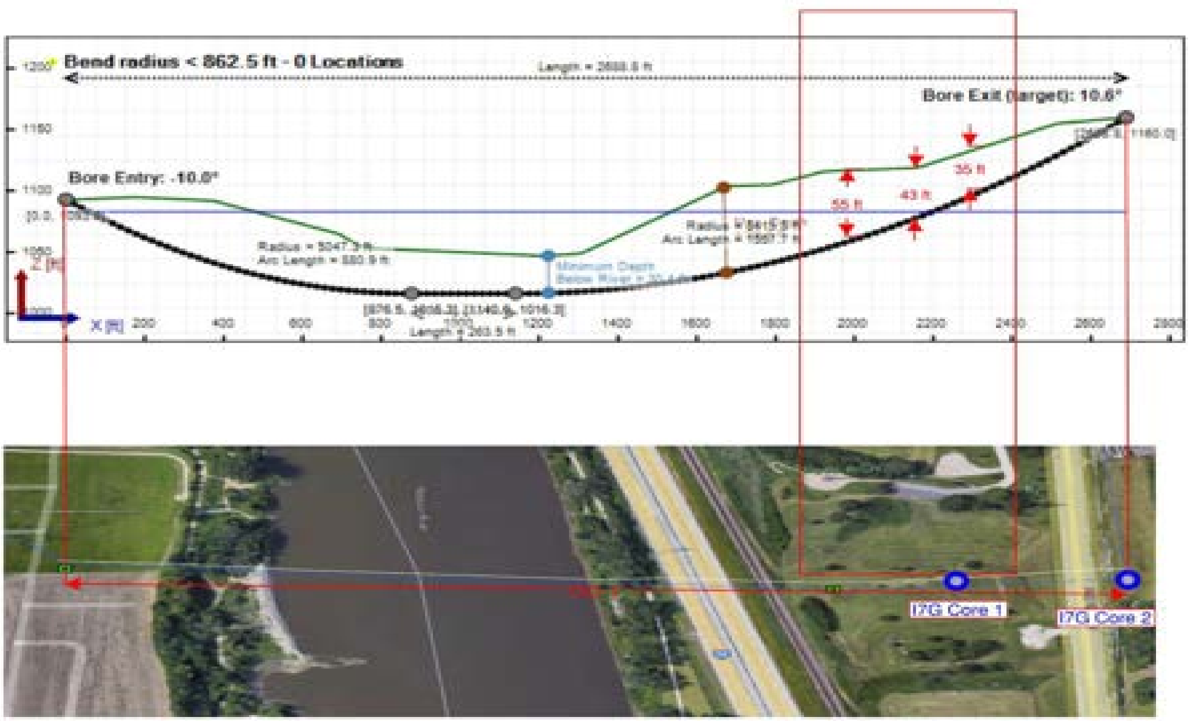
Based on the literature review, project plans, and consultation with the IA SHPO office for the exploratory bores identified above (IA SHPO number R&C 230897264), a geomorphological assessment was conducted for the planned horizontal boring with support from Impact7G, Inc. Two exploratory drill borings conducted on November 3, 2023, in South Sioux City, Iowa were also used to determine if the area had archeological potential and to ascertain the soil properties. See Exhibit 1 below for the locations and depths of these borings.

Exhibit 1



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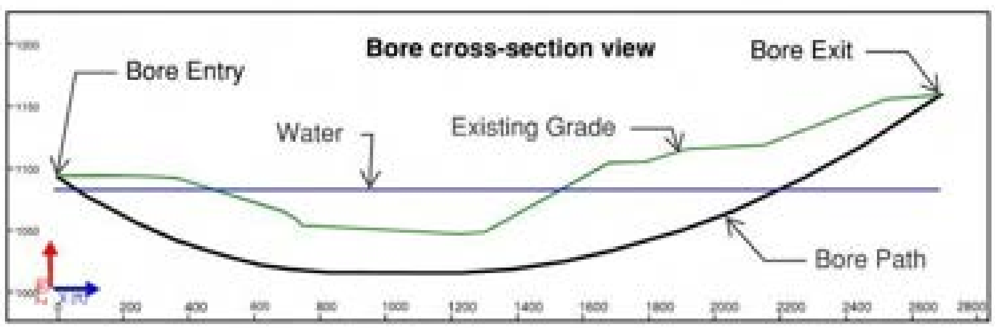
There were no concerns from the Iowa SHPO Archeologist.

Core 2: West of S. Lewis Blvd – buried soil at 1.8 – 3.0 meters (5.9-9.84 feet) (Corrington Member)
The Iowa SHPO Archeologist stated this area could have historic properties.

As a result, the boring profile was shifted to remain at depths in the area west of S. Lewis Blvd that would not disturb or impact any potential archaeological resources. Exhibit 2 below shows the planned bore path, entering on the Nebraska side and exiting on the Iowa side to the east of S. Lewis Blvd. The X-axis depicts length in feet and the Z-axis shows elevation in feet above mean sea level. The profile shows the bore path will stay relatively deep, with a depth in the area with potentially archaeological concern ranging from about 35 to 55 feet below ground surface. While the initial version shared with the Iowa SHPO Archeologist had different depths below ground surface shown due to calculations completed using the X-axis scale, these depths are still well below where the buried soil was identified during the geomorphological assessment. The Iowa SHPO agreed that if the drilling in the area west of S. Lewis Blvd is completed at such depths, no additional subsurface investigation was needed, and the project can proceed after formal Iowa SHPO Section 106 concurrence.

The buried soil with archeological potential will be avoided and no further action is recommended. Details and associated results for the geomorphological assessment are included in the attached report (Phase I Geomorphological Assessment with the Winnebago Tribe Broadband Project; Impact7G, Inc.; 2023). Reach out to NTIA for copy of geomorphological assessment report if you want to review. File was too large to send through TCNS.

Exhibit 2



Consultation with your office and the Omaha THPO is currently underway and will continue throughout project construction. An Unanticipated Discovery plan is currently being developed if any resources are found during construction. No direct effects are anticipated to occur to NRHP-listed structure sites.

4. Basis for Finding

Based on the previous coordination with your office and Iowa and Nebraska SHPOs and our ongoing consultation and efforts to identify historic properties, the NTIA has made a Section 106 finding of No Adverse Effect to Historic Properties. As mentioned, NTIA will require the proposed project construction remain within existing ground disturbances when working within

UNITED STATES DEPARTMENT OF COMMERCE
National Telecommunications and Information Administration
Washington, DC 20230

or near (within 100'of) the remaining 20 previously documented NRHP listed, eligible, or unevaluated cultural resource sites. Archaeological and tribal monitoring is also required when construction is occurring within and near to (within 100' of) each these sites (Table 4 of the cultural resources report). I respectfully request your response to this Section 106 Determination within 30 days of receipt.

If you have questions or need any additional information, please contact me at jfitzpatrick@ntia.gov or 202-834-3123. I look forward to your reply.

Sincerely,

Josh Fitzpatrick Digitally signed by Josh Fitzpatrick
Date: 2024.02.21 17:09:18 -06'00'

Josh Fitzpatrick
Environmental Program Officer
National Telecommunications and Information Administration
Department of Commerce

Attachments:
Figures
KMZ/SHP Files project alignment and staging areas
Construction Methods Guidance
APE Maps
Cultural Resources Literature Review and Intensive Pedestrian Survey
Impact 7G Geomorphological Investigation
Sioux City Geotech Bore Letter

DocuSign Envelope ID: A96013C9-CD27-4806-8867-E1C12246DB3F

Angel De Cora
Museum & Research Center

March 22nd, 2024

Josh Fitzpatrick
Environmental Program Officer
National Telecommunications and Information Administration
Department of Commerce

Mr. Fitzpatrick,

Thank you for reaching out to the Tribal Historic Preservation Office of the Winnebago Tribe of Nebraska with this Section 106 correspondence regarding the Winnebago Broadband Fiber Project.

We have reviewed the above-referenced proposed undertaking known to us as, the "Winnebago Broadband Fiber Project" (Federal Grant #NT22TBC0290076) located within the exterior boundaries of the Winnebago Reservation; through multiple meetings, the Tribal Historic Preservation Officer concurs with Olsson and this project is in compliance with Section 106 of the National Historic Preservation Act. We are aware of areas within the APE of your project, through discussions with the Olsson team we have mitigated the areas, with both parties agreeing to avoid and the reroute of fiber lines in areas of cultural interest.

Although we are specifically aware of these archaeological and/or cultural sites or properties within the footprint of the project which are on the Winnebago Tribe's Historical Register, through mitigation we have chosen avoidance as the best route, we are fully aware and will encourage you to proceed with caution. There is so much history in this area not just with the Winnebago Tribe but for our relatives to the south, the Omaha Tribe of Nebraska who inhabited this area long before the Winnebago Tribe, that possible TCP's could be inadvertently discovered by way of your project. If inadvertent finds concerning cultural resources such as pottery, shards, historic/pre-historic artifacts, bone fragments/human remains occur during the process involved with this project, please stop all work immediately and contact the necessary agencies consulting and/or interested parties.

Respectfully,

DocuSigned by:
Sunshine Bear
4F9737FE7C014B9...

3/22/2024

Sunshine Thomas-Bear
THPO/ NAGPRA Rep./Cultural Preservation Director/Angel De Cora Museum Director
THPO Office/Angel De Cora Museum
Little Priest Tribal College - Thunder Clan Building
601 E. College Road
Winnebago, NE 68071
(402) 922-2631 Cell

UNITED STATES DEPARTMENT OF COMMERCE
National Telecommunications and Information Administration
Washington, DC 20230

February 21, 2024

Mr. Jarell Grant
Tribal Historic Preservation Office
Omaha Tribe of Nebraska
P.O. Box 368
Macy, NE 68039

Subject: Section 106 Finding of No Historic Properties Affected Submitted to the Omaha Tribe of Nebraska Tribal Historic Preservation Office (THPO) for the Winnebago Tribe of Nebraska (Federal Grant #NT22TBC0290076) Broadband Fiber Project

Dear Mr. Grant,

The Winnebago Tribe of Nebraska (Grantee) was awarded funding for a proposed Broadband Connectivity Project (Project) under the U.S. Department of Commerce, National Telecommunications and Information Administration (NTIA) Tribal Broadband Connectivity Program (TBCP). The purpose of the Project is to deploy a broadband infrastructure network on the Winnebago Reservation and in the adjacent communities of Emerson, Homer, and Wakefield, Nebraska to connect unserved/underserved tribal households, businesses, and community anchor institutions (i.e., schools, medical facilities) to reliable and affordable high-speed Internet. The Project would provide qualified broadband service with a minimum speed of 200/40 megabits per second (Mbps) to approximately 600 unserved Native American households, 40 unserved Native American and/or tribal businesses, and 16 tribal anchor institutions. In addition, the Project includes a rate stabilization program designed to provide up to a maximum payment on broadband household monthly bills to alleviate the burden felt most heavily by those in poverty and to prevent disconnection of service.

The fiber-optic installation alignment is generally located on the Winnebago Tribe of Nebraska Reservation, which spans approximately 120,000 acres and is situated primarily in a rural area in the northern half of Thurston County in northeast Nebraska, 20 miles south of Sioux City, Iowa, and 80 miles north of Omaha, Nebraska. U.S. highways 75 and 77 join in the east-central area of the reservation, near the community of Winnebago. A small portion of the reservation is located directly east of the Iowa-side of the Missouri River west of Interstate 29 in Woodbury County.

Portions of the fiber-optic alignment also extend to communities just outside of the reservation, including the northern portion of Emerson (the southern half of Emerson is within the reservation; Dakota, Dixon, and Thurston counties), Homer (Dakota County), and Wakefield (Dixon and Wayne counties). In addition, the fiber-optic alignment extends north to the Western Iowa Technical Community College in Sioux City, Iowa and a very small portion outside of the southern Winnebago Reservation boundary in Iowa (Woodbury County). Refer to the attached Figures for a depiction of the project location. The fiber-optic alignment includes two crossings under the Missouri River at approximately River Miles (RMs) 711.0 and 729.7. The southern crossing will connect those southern portions of the reservation on the Iowa side of the river.

The Project is expected to facilitate economic development and commercial activity, create remote employment and entrepreneurial opportunities, and increase availability of remote learning and telehealth services.

1. Description of the Undertaking

The proposed action involves the construction of a multi-conduit, underground Fiber to the Premises (FTTP) system capable of 200 Mbps download speeds and 40 Mbps upload speeds. In total, approximately 235 miles of new fiber-optic cable would be buried within protective conduit along existing road right-of-way (ROW) and under the Missouri River in the project area. The buried fiber-optic line installation, which consists of the telecommunications cable and its protective conduit, would be performed using plowing and trenching construction techniques along roadways, and a directional boring machine would be used to install line under waterway, road, and railroad crossings. In addition, to facilitate operation and maintenance of the Fiber to the Home (FTTP) system, ancillary equipment would be installed along the alignment including optical line terminals (OLT), vaults, handholes, pedestals, markers, and network interface devices (NID).

Approximately 156 miles of the proposed installations would be performed using plowing or trenching construction techniques within existing road ROW. Plowed conduit would be installed using a track-type bulldozer equipped with a specialized single ripper that loosens the soil along the installation path. Conduit would be fed either from the plow bulldozer or from a separate truck-mounted reel through a plow chute attached to the ripper and laid directly at a nominal depth of approximately 36 to 48 inches, depending on permit requirements. A compaction machine would follow directly behind the plow bulldozer and restore the ground surface to its original contour. The installation path may be preripped by a second bulldozer, if necessary, to loosen the soil in areas where subsurface rock or other buried obstructions may be present. This second bulldozer may also, in some cases, be attached to the plow bulldozer to provide additional pulling power for the plowing operation. Ground disturbance associated with the plowed installation would be limited to an approximately 8-foot-wide corridor. In areas that are too narrow for plowing equipment to be used and where directional boring is not required to avoid surface disturbance, trenching construction techniques would be used for the conduit installations. Typically, a backhoe would be used to dig the required trench, although a compact excavator may be used in areas that are exceedingly narrow. The nominal trench depth would be the same as for plowed installations, but the disturbance width would be less.

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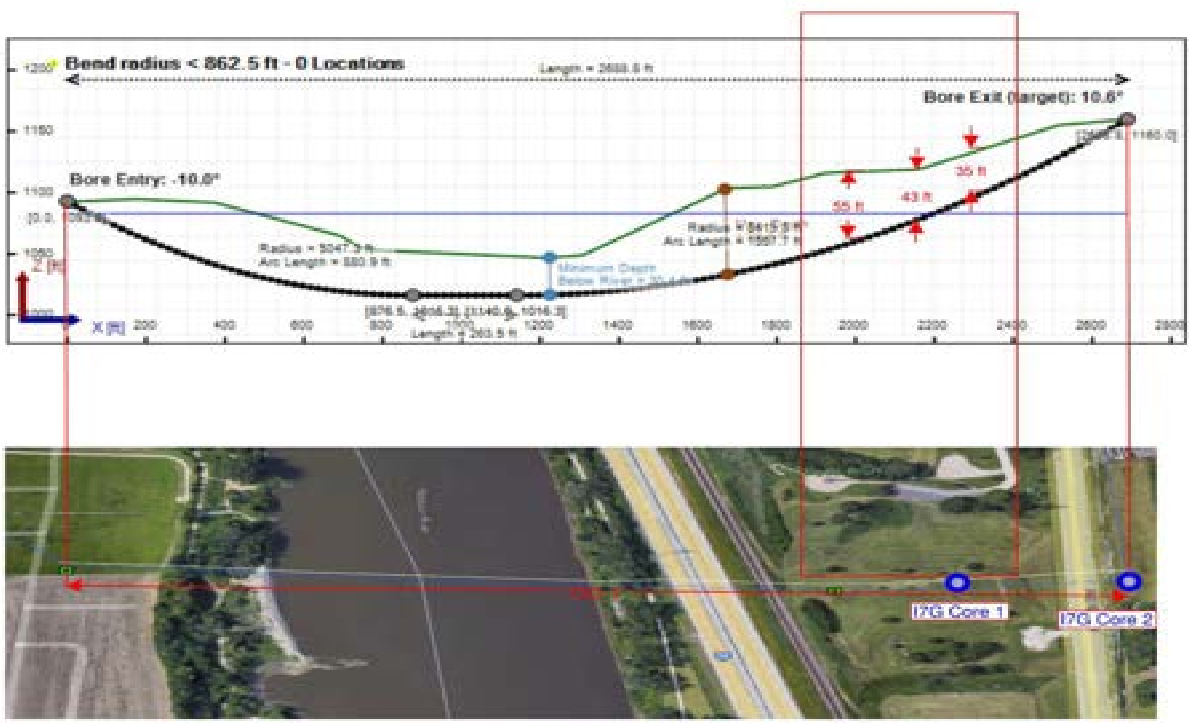

Core 1: East of S. Lewis Blvd – Fill over Loess
There were no concerns from the Iowa SHPO Archeologist.

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The Iowa SHPO Archeologist stated this area could have historic properties.

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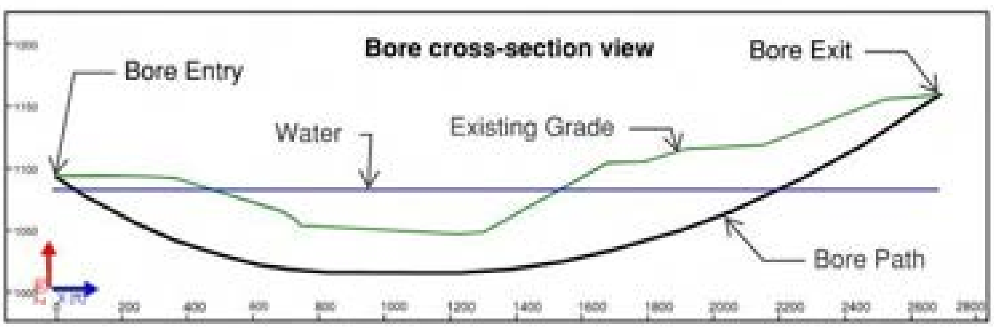

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4. Basis for Finding

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Sincerely,

Josh Fitzpatrick

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Josh Fitzpatrick
Environmental Program Officer
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Sioux City Geotech Bore Letter

From: Mark Parker <mark.parker@theomahatribe.com>
Sent: Tuesday, March 26, 2024 11:31 AM
To: Fitzpatrick, Joshua
Cc: Jarell Grant; Calvin Harlan; Joy Johnson; Sunshine Bear; Krista Schnepf; Deixler, Josh
Subject: RE: Nebraska Broadband project going through the Winnebago tribal reservation

This Message Is From an External Sender

This message came from outside your organization. Please take care when clicking links or opening attachments. When in doubt, use the Report Phish button or contact IT to have the message analyzed.

Yes, the email will be our concurrence for this project. Thank you.

From: Fitzpatrick, Joshua <jfitzpatrick@ntia.gov>
Sent: Monday, March 25, 2024 5:55 PM
To: Mark Parker <mark.parker@theomahatribe.com>
Cc: Jarell Grant <jarell.grant@theomahatribe.com>; Calvin Harlan <calvin.harlan@theomahatribe.com>; Joy Johnson <joy.johnson@winnebagotribe.com>; Sunshine Bear <sunshine.bear@winnebagotribe.com>; Krista Schnepf <kschnepf@olsson.com>; Deixler, Josh <jdeixler@ntia.gov>
Subject: RE: Nebraska Broadband project going through the Winnebago tribal reservation

Thank you, Mr. Parker.

Is the email below considered the Omaha THPO's Section 106 concurrence for the Winnebago Tribal Broadband Connectivity Project? We can certainly add the Omaha THPO office into the inadvertent discovery plan and work with your office for construction monitoring as this project builds out.

I have copied Sunshine Bear from the Winnebago THPO office and Joy Johnson as well for visibility.

Thank you!

Josh Fitzpatrick
Environmental Program Officer
National Telecommunications and Information Administration
Office of Internet Connectivity and Growth
Email: jfitzpatrick@ntia.gov
Phone: 202.834.3123

From: Mark Parker <mark.parker@theomahatribe.com>
Sent: Monday, March 25, 2024 2:07 PM
To: Fitzpatrick, Joshua <jfitzpatrick@ntia.gov>
Cc: Jarell Grant <jarell.grant@theomahatribe.com>; Calvin Harlan <calvin.harlan@theomahatribe.com>
Subject: Nebraska Broadband project going through the Winnebago tribal reservation

Good afternoon,

I have reviewed the information regarding the broadband project that is planned to run through the Winnebago reservation and local areas. The methods of construction may be minimal disturbance, the areas in which it takes place is still a concern for the Omaha tribe. We feel that is in all parties best interest that we be involved in this project moving forward. Omaha ancestors either inhabited or hunted all the areas indicated in your maps and have unmarked family burials within them. As for the planned line itself, the disturbance may still uncover a lead to a discovery. We would ask also that in your discovery plan you would add the Omaha Tribe as well. I hope this email got to you in a timely manner and look forward to hearing from you.

Regards,

Mark Parker
THPO Cultural Resource Lead
The Omaha Tribe of Nebraska
(402) 837-5391 ext. 433

UNITED STATES DEPARTMENT OF COMMERCE
National Telecommunications and
Information Administration
Washington, D.C. 20230

NOTICE OF ORGANIZATION(S) WHICH WERE SENT PROPOSED BROADBAND PROJECT NOTIFICATION INFORMATION

Date: 02/23/2024

WINNEBAGO TRIBE OF NEBRASKA
JOY JOHNSON
1401 CONSTITUTION AVE.
WASHINGTON, DC 20230

Dear Applicant:

The National Telecommunications and Information Administration (NTIA) is using a modified version of the Federal Communications Commission's (FCC) Tower Construction Notification System (TCNS) as a means of expediting its Broadband grant programs. This notice is to inform you that the following authorized parties were sent information about the application that you submitted to NTIA through TCNS. The information was forwarded to authorized TCNS users by electronic mail and/or regular mail (letter).

Persons who have received the notification that you provided include leaders or their designees of federally-recognized American Indian Tribes, including Alaska Native Villages (collectively "Tribal Nations"), Native Hawaiian Organizations (NHOs), and State Historic Preservation Officers (SHPOs) who have set their geographic preferences on TCNS. For your convenience in identifying the referenced Tribal Nations and NHOs and in making further contacts, the City and State of the Seat of Government for each Tribal Nation and NHO, as well as the designated contact person, is included in the listing below. We note that Tribal Nations may have Section 106 cultural interests in ancestral homelands or other locations that are far removed from their current Seat of Government. Consistent with the FCC's rules as set forth in the NPA, NTIA requires that all Tribal Nations and NHOs listed below are afforded a reasonable opportunity to respond to this notification, consistent with the procedures set forth below.

We note that the review period for all parties begins upon receipt of a full project submittal and notifications that do not provide this serve as information only. If, upon receipt, the Tribal Nation or NHO does not respond within a reasonable time, you should make a reasonable effort at follow-up contact, unless the Tribal Nation or NHO has agreed to different procedures. In the event a Tribal Nation or NHO does not respond to a follow-up inquiry, or if a substantive or procedural disagreement arises between you and a Tribal Nation or NHO, you must seek guidance from NTIA. NTIA will follow procedures consistent with those set forth in the FCC's Second Report and Order released on March 30, 2018 (FCC 18-30).

1. FCC Compliance Officer - Susie Fox - Spirit Lake Nation - (PO Box: 359) - Fort Totten, ND - sfox@spiritlakenation.com - 701-766-4031 - electronic mail
Details: The Spirit Lake Nation requirement for consultation is digitally through our departmental website. Our website is http://cms.spiritlakeconsulting.com

We do not accept mailed paper or emailed digital submissions of project material. To speed up our response time and to be in compliance with our environmental practices we do not accept paper submissions. All proposed projects must be processed through our website. Multiple people in our department need access to the project files and department notes to be able to do their work on the project. For organization, documentation, and financial regulation, all Section 106 project compliance work is archived in our system.

Just as the majority of State Historic Preservation Offices elect to have companies submit their proposed project directly to their office in the format they require, as a sovereign nation, we have the right to ask for the same courtesy.

We require that you submit Form 620 or 621, complete with all of its attachments to our website.

It would expedite the process of getting your project into compliance if you would wait and submit your proposed project to our department when Form 620/621 and all of its attachments are ready - particularly the complete cultural resource report.We waste quite a bit of time contacting companies and searching for the Form 620/621 if the proposed project is submitted to us with only a dot on the map.

If you have any questions or need more information please contact FCC specialist Susie Fox at sfox@gondtc.com and 701-230-2133, or THPO Erich Longie, PHD at thpo@gondtc.com and 701-766-4032.

2. THPO - Merle Marks - Crow Creek Sioux Tribe - (PO Box: 286) - Ft Thompson, SD - cchistory@midstatesd.net - 605-245-2221 - electronic mail
Details: The Crow Creek Sioux Tribe has no interest in collocation projects. The Crow Creek Sioux Tribe requests the following states be removed from our geographic areas of interest, Arkansas , Virginia , South Carolina , Ohio , North Carolina, Michigan, Illinois

3. Cultural Resources Consultant - Brian Molyneaux - Lower Brule Sioux Tribe - 187 Oyate Circle - Lower Brule, SD - lowerbrulecro@gmail.com - 605-473-8000 - electronic mail

4. Tribal Historic Preservation - Benjamin Young - Rosebud Sioux Tribe - .(PO Box: 750) - Rosebud, SD - benjamin1011young@gmail.com - 605-747-4255 - electronic mail and regular mail
Details: Please send an archaeological survey or site inventory/map for the area within 1 mile of the APR for Pre-construction, collocation projects, and PTC Poles. The request gives the tribe an opportunity to comment on past projects that are now proposed as collocation projects. The Rosebud Sioux Tribe requests the legal description of the proposed site(township, range, section and topo map name). The RST requests a chronology if sites are within the 1-mile radius of the APE. The RST requests info of the Native American tribes identified having traditional use within the 1-mile radius of the APE. Ethnographic reports for the RST are requested. The RST may request a site visit for areas of significance to the tribe's history. PLEASE SEND ONLY HARD COPIES OF REPORTS BY MAIL. DO NOT EMAIL REPORTS. The Rosebud Sioux Tribe THPO at PO Box 809, Rosebud, S.D. 57570. ATTN: Ben Young and/or Bernadette Emery. Please include the TCNS number on all correspondence. Any questions call or email: Ben Young-Primary at benjamin1011young@gmail.com, 6057474255. Secondary-Bernadette Emery at bernadette.emery@rst-nsn.gov, 6057474255.

5. THPO/Director - Colton Archambeau - Yankton Sioux Tribe - 800 Main Street SW (PO Box: 1153) - Wagner, SD - yst.thpo@gmail.com - 605-384-3641 (ext: 1033) - electronic mail

6. TCNS Compliance Reviewer - Alicia Cloud - Sisseton-Wahpeton Oyate of the Lake Traverse Reservation - (PO Box: 907) - Sisseton, SD - SWO_TCNS@swo-nsn.gov; virginia.m.w.oboyle@gmail.com - 605-698-3584 - electronic mail
Details: The Sisseton Wahpeton Oyate Nation requirement for consultation is digitally through our departmental website. Our website is http://sisseton.heritageconsultation.com

We do not accept mailed paper or emailed digital submissions of project material.Tospeed up our response time and to be in compliance with our environmental practices, we do not accept paper submissions. All proposed projects must be processed through our website. Multiple people in our department need access to the project files and department notes to be able to do their work on the project. For organization, documentation, and financial regulation, all Section 106 project compliance work is archived in our system.

Just as the majority of State Historic Preservation Offices electto have companies submit their proposed project directly to their office in the format they require, as a sovereign nation, we have the right to ask for the same courtesy.

We require that you submit Form 620 or 621, complete with all of its attachments to our website.

It would expedite the process of getting your project into compliance if you would wait and submit your proposed project to our department when Form 620/621 and all of its attachments are ready - particularly the complete cultural resource report. We waste quite a bit of time contacting companies and searching for the Form 620/621 if the proposed project is submitted to us with only a dot on the map.

If you have any questions or need more information please contact FCC specialist Alicia Cloud at SWO_TCNS@swo-nsn.gov and 605-698-8306, or THPO Dianne Desrosiers at dianned@swo-nsn.gov and 605-698-8225.

7. THPO Assistant - Sara Childers - Flandreau Santee Sioux Tribe - 603 W. Broad Avenue (PO Box: 283) - Flandreau, SD - sara.childers@fsst.org - 605-864-1236 - electronic mail
Details: All correspondence must be done by email. We will no longer except anything by U.S. mail service.

8. THPO - Jon Eagle - Standing Rock Sioux Tribal Council - (PO Box: D) - Fort Yates, ND - j.eagle@standingrock.org - 701-854-8645 - regular mail

If the applicant/tower builder receives no response from the Standing Rock Sioux Tribal Council within 30 days after notification through TCNS, the Standing Rock Sioux Tribal Council has no interest in participating in pre-construction review for the proposed site. The Applicant/tower builder, however, must immediately notify the Standing Rock Sioux Tribal Council in the event archaeological properties or human remains are discovered during construction, consistent with Section IX of the Nationwide Programmatic Agreement and applicable law.

9. THPO - Stacy Settje - Ponca Tribe of Nebraska - 2523 Woodbine St (PO Box: PO box 288) - Niobrara, NE - ssettje@poncatribe-ne.org - 402-857-3519 - electronic mail

10. THPO - Jarell Grant - Omaha Tribe of Nebraska - (PO Box: 368) - Macy, NE - jarell.grant@theomahatribe.com; mark.parker@theomahatribe.com - 402-837-5391 (ext: 434) - electronic mail
Details: Please note we have updated procedures. Please email us at Omahatribefcctcns@outlook.com

11. Tribal Historic Preservation Office - Misty Flowers - Santee Sioux Nation of Nebraska - 425 Frazier Ave N Ste 2 - Niobrara, NE - ssn.thpo@gmail.com - 402-857-2302 - electronic mail

12. CPD/THPO - Sunshine Thomas-Bear - Winnebago Tribe of Nebraska - P.O. Box 687 - Winnebago, NE - thpo@winnebagotribe.com - 402-878-3313 - electronic mail

13. Historic Preservation Officer - Matt Reed - Pawnee Nation of Oklahoma - PO Box 470 657 Harrison Street(PO Box: 470) - Pawnee, OK - jreed@pawneenation.org; jreed@pawneenation.org - 918-762-2180 (ext: 220) - electronic mail

14. THPO - Amanda Hill - Kiowa Indian Tribe THPO - (PO Box: 369) - Carnegie, OK - thpo@kiowatribe.org; ahill@kiowatribe.org - 580-654-2300 - electronic mail

15. THPO - Lance Foster - Iowa Tribe of Kansas & Nebraska - 3345 B. Thrasher Rd. - White Cloud, KS - lfoster@iowas.org - 785-595-3258 (ext: 104) - electronic mail
Details: We do not need to review collocations on buildings without any ground disturbance.

If the applicant/tower builder receives no response from the Iowa Tribe of Kansas & Nebraska within 30 days after notification through TCNS, the Iowa Tribe of Kansas & Nebraska has no interest in participating in pre-construction review for the proposed site. The Applicant/tower builder, however, must immediately notify the Iowa Tribe of Kansas & Nebraska in the event archaeological properties or human remains are discovered during construction, consistent with Section IX of the Nationwide Programmatic Agreement and applicable law.

16. Deputy Tribal Historic Preservation Officer - Tara Mitchell - Prairie Band Potawatomi Nation - Government Center 16281 Q Road - Mayetta, KS - taramitchell@pbpnation.org - 785-966-4016 - electronic mail

If the applicant/tower builder receives no response from the Prairie Band Potawatomi Nation within 30 days after notification through TCNS, the Prairie Band Potawatomi Nation has no interest in participating in pre-construction review for the proposed site. The Applicant/tower builder, however, must immediately notify the Prairie Band Potawatomi Nation in the event archaeological properties or human remains are discovered during construction, consistent with Section IX of the Nationwide Programmatic Agreement and applicable law.

17. TCNS Administrator - kennis wheeler - Kaw Nation - 222 E. Grand Suite 313 - Ponca City, OK - Kenny.rksllc@gmail.com; Kenny.rksllc@gmail.com - 405-443-7531 - electronic mail

18. Tribal Historic Preservation Officer - Elsie Whitehorn - Otoe-Missouria Tribe of Indians - 8151 Highway 177 - Red Rock, OK - tcns@omtribe.org; ewhitehorn@omtribe.org - 580-723-4434 (ext: 202) - electronic mail

19. THPO - Liana Hesler - Ponca Tribe of Indians of Oklahoma - 121 White Eagle Drive - Ponca City, OK - liana.hesler@ponca-nsn.gov; shesler.thpo@gmail.com - 580-382-6633 - electronic mail and regular mail

20. TCNS Director - Iowa Tribe - Iowa Tribe of Oklahoma - 222 E. Grand Suite 313 - Ponca City, OK - iowatribetcns@gmail.com; iowatribetcns@gmail.com - 405-443-7531 - electronic mail

21. Chief of Staff - Audrey Lee - Sac and Fox Nation - 920883 S. Hwy 99, Building A - Stroud, OK - cos@sacandfoxnation-nsn.gov; sacandfoxtcns@gmail.com - 918-968-3526 (ext: 1072) - electronic mail and regular mail

22. THPO - Aaron Brien - Crow Tribe - (PO Box: 159) - Crow Agency, MT - aaron.brien@crow-nsn.gov; john.birdinground@crow-nsn.gov - 406-839-3817 - electronic mail

23. Tribal Historic Preservation Officer - Dyan Youpee - Fort Peck Tribes - Cultural Resources Department (PO Box: 1027) - Poplar, MT - tcnsinfo@fortpecktribes.net; tcnsinfo@fortpecktribes.net - 406-768-2382 - electronic mail and regular mail
Details: To ensure the Fort Peck Tribal Historic Preservation Officer and staff to review within a timely manner, please email:

TCNSinfo@fortpecktribes.net

with attached adequate mapping, TOPO map, archaeological/ethnographic report, R.O.W., road access, file searches, and other related material for the proposed site(s). Preferably NO animals, vehicles, or persons in the pictures. The better the quality of the aerial, landscape view, the greater chance of visibility to create a concurrence.

Failure to email TCNS projects to Fort Peck's TCNS staff @ TCNSinfo@fortpecktribes.net will be dismissed. Larger files and/or multiple projects can be mailed to Tribal Historic Preservation Office, Fort Peck Tribes, P.O. Box 1027, Poplar MT 59255. The Fort Peck T.H.P.O. cannot account for any information emailed or mailed to other than addressed above.

Requested on-site visitations will result in a $400.00 fee. These fees are to be paid directly to the Traditional Cultural Specialist (T.C.S.), as will be invoiced by the Tribal Historic Preservation Office. All TCNS towers residing within the Fort Peck Indian Reservation will be required to have an on-site fee with a T.C.S. Should there be cultural resources near impact, or needing mitigation, additional costs may be charged for construction monitoring. Please allow the Fort Peck Tribes TCNS staff a minimum of 30 days (upon received by office) to respond by review. If there are further questions from the Fort Peck T.H.P.O., your contact information provided will beused for communication.

For off-reservation on-site requests; Fort Peck Tribes will parallel on-reservation procedures.

Reviews that continuously lack the proper information or adequate aerials, photos of the project area, will be sent a request fora T.C.S. to do the area recording for the Fort Peck Tribes T.H.P.O. standards.

To avoid delay, please provide this information as soon as possible. Applications will NOT be processed if the aforementioned requests are not met. We MUST have an email copy of this information to review each proposed site.

24. THPO - Josh Mann - Eastern Shoshone Tribe - (PO Box: 538) - Fort Washakie, WY - jmann@easternshoshone.org; sdurgin@easternshoshone.org - 307-335-2081 - electronic mail
Details: Thank you for the recent submittal regarding your TCNS project. Based on the location of your proposed project, the Eastern Shoshone Tribe does have an
interest in this project as required by the mandatesexpressed in 36 CFR 800, EO 13175, and the FCC Programmatic Agreement as Traditionally Associated
Peoples (TAPs) and a sovereign nation legal responsibility for heritage preservation on ancestral homelands. Please utilize our ESTHPO website for online
submittals. Our website address is: http://www.esthpo.com. Please navigate to our Services page. On the services page there will be a Submittal button
under the Section 106 Consultation literature. The submittal button will navigate you to the upload page where can submit relevant project files for our
consultation review.

Your submission should include:
Appropriate SHPO determination or response letter
Cultural Resource Report and or Archaeological Survey Report
Photographic project site documentation
Topographic or Quadrangle Maps
Site Plans/Construction Drawings
FCC Forms 620 and 621
Lat/Long Coordinates for the proposed project.
Project Coordinator Contact Information

Our 30-day review period will commence once all project details havebeen submitted into our online database. If you have any questions, please feel free to
contact the Eastern Shoshone THPO: Joshua Mann, jmann@easternshoshone.org or by phone at: (307) 335-2081 or Shaylynn Durgin,
sdurgin@easternshoshone.org or by phoneat: (307) 335-2081. Thank you for consulting with the Eastern Shoshone Tribe.

The ancestors of the Eastern Shoshone Tribe lived a long and storied history across several states on their westward journey from the Western area to present-day Wyoming. This journey, confirmed by tribal oral history, ethnographies, and archaeological evidence, took place over multiple generations and through the present-day states of North Dakota, South Dakota, Nebraska, Kansas, Colorado, Wyoming, Montana, Idaho, Washington, Oregon, California, Utah, Nevada, Arizona, NewMexico and Texas. Significant historical resources throughout this region include major sacred sites including burial sites, occupation areas, medicinal plant and resource collection areas, and other significant traditional cultural properties (TCPs). Therefore, based on the location of your proposed project, the Eastern Shoshone Tribe does have an interest in this proposed project and are requesting to be consulted on this proposed project as required bythe mandates expressed in 36 CFR 800, EO 13175,and the FCC National Programmatic Agreement as traditionally associated peoples (TAPs) and a sovereign nation with legal responsibility for heritage preservation on ancestral homelands.

25. THPO - Benjamin Ridgley - Northern Arapaho - 1010 Railroad Ave (PO Box: 67) - St. Stephens, WY - archtech.nathpo@gmail.com; pejuta.villa@northernarapaho.com - 307-856-1628 - electronic mail
Details: PLEASE SEND AN ARCHAEOLOGICAL SURVEY OR SITE INVENTORY/MAP FOR THE AREA WITHIN 1 MILE OF THE APE FOR PRE-CONSTRUCTION, COLLOCATION PROJECTS AND PTC POLES. The request gives the tribe an opportunity to comment on past projects that are now proposed as collocation projects.

Email reports to: archtech.nathpo@gmail.com

Please include the TCNS number on all correspondence, reports, maps.

ANY QUESTIONS CALL OR EMAIL:

Benjamin Ridgley
3078561628
benjamin.ridgley@northernarapaho.com

Crystal C'Bearing
crystal.cbearing@northernarapaho.com

26. THPO - Cheyanne St. John - Lower Sioux Indian Community of Minnesota - 39527 Res. Highway 1 (PO Box: 308) - Morton, MN - lowersiouxthpo@lowersioux.com - 507-697-6321 - regular mail
Details: 1. Please submit a brief project summary LETTER (1-2 pgs. of project detail, coordinates, location) to initiate consultation with Lower Sioux Indian Community, Tribal Historic Preservation Office, via US mail only.

2. Please confirm projects are within Lower Sioux Indian Community's identified areas of interest.

3. The Lower Sioux Indian Community in the State of Minnesota will respond to directly to applicant if additional forms, project information or report/findings are requested. (Do not send unless REQUESTED)

27. THPO - Noah White - Prairie Island Indian Community - 5636 Sturgeon Lake Road - Welch, MN - celltower@piic.org - 651-385-4175 - electronic mail

If the applicant/tower builder receives no response from the Prairie Island Indian Community within 30 days after notification through TCNS, the Prairie Island Indian Community has no interest in participating in pre-construction review for the proposed site. The Applicant/tower builder, however, must immediately notify the Prairie Island Indian Community in the event archaeological properties or human remains are discovered during construction, consistent with Section IX of the Nationwide Programmatic Agreement and applicable law.

28. THPO - Lawrence Plucinski - Bad River Band of Lake Superior Tribe of Chippewa Indians - (PO Box: 39) - Odanah, WI - thpo@badriver-nsn.gov; deputyTHPO@badriver-nsn.gov - 715-682-7123 - electronic mail

If the applicant/tower builder receives no response from the Bad River Band of Lake Superior Tribe of Chippewa Indians within 30 days after notification through TCNS, the Bad River Band of Lake Superior Tribe of Chippewa Indians has no interest in participating in pre-construction review for the proposed site. The Applicant/tower builder, however, must immediately notify the Bad River Band of Lake Superior Tribe of Chippewa Indians in the event archaeological properties or human remains are discovered during construction, consistent with Section IX of the Nationwide Programmatic Agreement and applicable law.

29. Tribal Historic Preservation Officer - William Quackenbush - Ho-Chunk Nation - (PO Box: 667) - Black River Falls, WI - bill.quackenbush@ho-chunk.com - 715-284-7181 (ext: 1121) - electronic mail

30. THPO - Marvin DeFoe - Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin - 88455 Pike Road, HWY 13 - Bayfield, WI - Marvin.DeFoe@redcliff-nsn.gov; Edwina.Buffalo-Reyes@redcliff-nsn.gov - 715-779-3700 (ext: 4242) - electronic mail
Details: Boozhoo, we do not have the Red Cliff Portal site online anymore and apologize for the inconvenience.

If you have a project that has already been paid for or would like to voluntarily pay for, please email documents for project review to THPO@redcliff-nsn.gov. This address is only to be used by Consultants who are voluntarily paying for projects.

If you have any questions, please contact Marvin Defoe, THPO Manager at (715) 779-3700 Ext. 4244 or Edwina Buffalo-Reyes, THPO Assistant at (715) 779-3700Ext. 4243.

31. THPO Dept - Rhonda Hayworth - Ottawa Tribe of Oklahoma - (PO Box: 110) - Miami, OK - ottawatcns.oto@gmail.com - 918-540-1536 - electronic mail

32. THPO - Sarah Thompson - Lac du Flambeau Band of Lake Superior Chippewa Indians - Tribal Historic Preservation Office (PO Box: 67) - Lac du Flambeau, WI - ldfthpo@ldftribe.com - 715-588-2139 - electronic mail
Details: Effective Immediately:

Please send all submissions through email until further notice. Effective 3/23/2020

Please email all submissions to ldfthpo@ldftribe.com

Thank you

33. FCC Specialist - Gary LaFranier - Northern Cheyenne Tribe - (PO Box: 128) - Lame Deer, MT - gary.lafranier@cheyennenation.com - 406-477-8114 - electronic mail
Details: The Northern Cheyenne Tribe requirement for consultation is digitally through our departmental website. Our website is http://cms.cheyennenation.com

We do not accept mailed paper or emailed digital submissions of project material. To speed up our response time and to be in compliance with our environmental practices we do not accept paper submissions. All proposed projects must be processed through our website. Multiple people in our department need access to the project files and department notes to be able to do their work on the project. For organization, documentation, and financial regulation, all Section 106 project compliance work.

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If you have any questions or need more information please contact FCC specialist Gary LaFranier at gary.lafranier@cheyennenation.com and 406-477-8114, or THPO Teanna Limpy at teanna.limpy@cheyennenation.com and 406-477-4839.

The information you provided was also forwarded to the additional Tribes and NHOs listed below. These Tribes and NHOs have NOT set their geographic preferences on TCNS, and therefore they are currently receiving tower notifications for the entire United States.

The information you provided was also forwarded to the following SHPOs in the state in which you propose to construct and neighboring states. The information was provided to these SHPOs as a courtesy for their information and planning.

34. Chief of Staff, Deputy SHPO - Theodore Hild - Illinois Historic Preservation Agency - 1 Old State Capitol Plaza - Springfield, IL - ted_hild@ihpa.state.il.us - - electronic mail

35. SHPO - Dru Buntin - Acting Director, State Department of Natural Resources - (PO Box: 176) - Jefferson City, MO - MOSection106@dnr.mo.gov - 573-751-4732 - electronic mail

36. Deputy SHPO - David Kelly - Division of State Parks Director - (PO Box: 176) - Jefferson City, MO - MOSection106@dnr.mo.gov - 573-751-9392 - electronic mail

37. Deputy SHPO - Toni Prawl - State Historic Preservation Office (Missouri) - (PO Box: 176) - Jefferson City, MO - MOSection106@dnr.mo.gov - 573-751-7858 - electronic mail

38. SHPO Staff Member - John Swigart - Nebraska State Historical Society - 1500 R Street - Lincoln, NE - hn.hp@nebraska.gov - 402-416-0666 - electronic mail

TCNS automatically forwards all notifications to all Tribal Nations and SHPOs that have an expressed interest in the geographic area of a proposal. A particular Tribal Nation or SHPO may also set forth policies or procedures within its details box that exclude from review certain facilities (for example, a statement that it does not review collocations with no ground disturbance or that indicates that no response within 30 days indicates no interest in participating in pre-construction review).

Please be advised that the NTIA cannot guarantee that the contact(s) listed above opened and reviewed an electronic or regular mail notification. The following information relating to the proposed project was forwarded to the person(s) listed above.

Notification Received: 02/14/2024

Notification ID: 276634
Project Number: 112822
Applicant: Winnebago Tribe of Nebraska
Applicant Contact: Joy Johnson

Project Type(s): Other (details in attachments)

Region(s) affected (State, County): IOWA, WOODBURY NEBRASKA, DAKOTA NEBRASKA, DIXON

NEBRASKA, THURSTON NEBRASKA, WAYNE

Address or Geographical Location Description: Winnebago Tribe of Nebraska

If you have any questions or comments regarding the content of this notice, please contact NTIA at: TCNS@ntia.gov.

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Tower Construction Notification

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There are 6 replies for Notification ID 276634:

Reply Information

Reply Posted: March 5, 2024 From: THPO Merle Marks, Crow Creek Sioux Tribe	We have no interest in this site. However, if the Applicant discovers archaeological remains or resources during construction, the Applicant should immediately stop construction and notify the appropriate Federal Agency and the Tribe.
Reply Posted: March 4, 2024 From: THPO Assistant Sara Childers, Flandreau Santee Sioux Tribe	We have an interest in this site and would like the applicant to contact us. Sara Childers 605-370-2422 Please email all information to sara.childers@fsst-nsn.gov
Reply Posted: February 23, 2024 From: FCC Compliance Officer Susie Fox, Spirit Lake Nation	We have an interest in this site and would like the applicant to contact us. Susie Fox 701-230-2133 Please consider this our formal letter of interest in your proposed project. The Spirit Lake Nation requirement for consultation is digitally through our departmental website. Our website is http://cms.spiritlakeconsulting.com We do not accept mailed paper or emailed digital submissions of project material. To speed up our response time and to be in compliance with our environmental practices we do not accept paper submissions. All proposed projects must be processed through our website. Multiple people in our department need access to the project files and department notes to be able to do their work on the project. For organization, documentation, and financial regulation, all Section 106 project compliance work is archived in our system. Just as the majority of State Historic Preservation Offices elect to have companies submit their proposed project directly to their office in the format they require, as a sovereign nation, we have the right to ask for the same courtesy. We require that you submit Form 620 or 621, complete with all of its attachments to our website. It will save time if you wait and submit your proposed project to our department when Form 620/621 and all of its attachments are ready, particularly the complete cultural resource report. We waste quite a bit of time contacting companies and searching for the Form 620/621 if the proposed project is submitted to us with only a dot on a map. It would expedite the process of getting your project into compliance if you would consider submitting a complete files search to us. The SHPO has records of all known sites in the area of your proposed undertaking ☐ even the unevaluated, undetermined, and recommended ineligible sites. Nearly every single Native cultural resource that is identified by archaeologists is recorded as unevaluated and needing further evaluation. Without this complete list, nearly all Native sites are missed. With the complete SHPO file search, we can expedite your project by streamlining the evaluation process of the state☐s site database and our tribal site register. The Spirit Lake Nation has a long and rich history in the area including oral histories going back millennia. Under 36 CFR 800 .4 we have the right to evaluate federal undertakings with the potential to effect cultural resources. Our unique knowledge of sites and their potential significance under the National and Tribal Register make it essential for us to evaluate all sites within the area of potential

	effect. This is the very reason why we ☐ the Tribes ☐ are involved. The history, language, or religion of our people, the significance or sacredness of a place to us, our important people associated with these places, and our ongoing traditional uses of a location. If youhave any questions or need more information please contact FCC Compliance Susie Fox at sfox@gondtc.com and 701-230-2133, or THPO Kenneth Graywater Jr. (KJ) at thpo@gondtc.com and 701-766-4032. Thank you for ☐ensuring tribal cultural properties and other sacred sites of a historic nature are protected in a manner respectful of tribal sovereignty and consistent with the obligations of the Commission under the NHPA☐ (WT Docket No. 03-128 2004:38).
Reply Posted: February 23, 2024 From: FCC Specialist Gary LaFranier, Northern Cheyenne Tribe	We have no interest in this site. However, if the Applicant discovers archaeological remains or resources during construction, the Applicant should immediately stop construction and notify the appropriate Federal Agency and the Tribe.
Reply Posted: February 21, 2024 From: THPO Benjamin Ridgley, Northern Arapaho	The Northern Arapaho THPO has reviewed your Consultation Request under the National Environmental Protection Act & National Historic Preservation Act, Section 106 process, regarding the proposed project & offers the following response: No Historic Properties in the Direct or Visual APE Our office has come to this determination by drawing conclusions from the report, ethnography, previous survey search from SHPO and maps depicting province of sites in regards to Direct and Visual APE. There are no cultural resources and no eligible historic properties within the APE. Currently, there are no properties of religious and cultural significance to the Northern Arapaho within the area of potential effect. However, if traditional cultural properties, rockfeatures, or human remains are found during excavation with any new ground disturbance, we request to be contacted and a report provided.
Reply Posted: February 21, 2024 From: THPO Sarah E Thompson, Lac du Flambeau Band of Lake Superior Chippewa Indians	Please forward the following information: a short summary of all proposed activity within the project area, Legal Description of the Area of Potential Effects, Topo maps identifying the proposed area, and copies of any studies that have already been conducted regarding cultural resources and archeology in their full format, including reports on archeological and cultural sites identified. Should you have any questions, please feel free to contact me at 715-588-2139 or ldfthpo@ldftribe.com Please send requested information to: Sarah E. Thompson, THPO Lac du Flambeau Band of Lake Superior Chippewa Indians THPO P.O. Box 67 (Postal) 418 Little Pines (FedEx Mailing Address) Lac du Flambeau, WI 54538 Or ldfthpo@ldftribe.com

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From: Fitzpatrick, Joshua <jfitzpatrick@ntia.gov>
Sent: Tuesday, March 19, 2024 7:43 AM
To: Sunshine Bear; Joy Johnson; Krista Schnepf
Subject: FW: Winnebago Tribe of Nebraska Broadband Project: TCNS LDF Response

Follow Up Flag: Follow up
Flag Status: Flagged

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Per below, no concern from the Lac du Flambeau THPO. I believe that closes the loop on all outside tribal coordination.

Sunshine,

Please let me know if you concur with the Section 106 finding I sent you as well. I have not heard back from Jarell Grant yet either.

Thank you,

Josh Fitzpatrick
Environmental Program Officer
National Telecommunications and Information Administration
Office of Internet Connectivity and Growth
Email: jfitzpatrick@ntia.gov
Phone: 202.834.3123

From: ldfthpo <ldfthpo@ldftribe.com>
Sent: Tuesday, March 19, 2024 7:17 AM
To: Fitzpatrick, Joshua <jfitzpatrick@ntia.gov>
Subject: RE: Winnebago Tribe of Nebraska Broadband Project: TCNS LDF Response

This project is out of our current area of interest.

Sarah E. Thompson
THPO

From: Fitzpatrick, Joshua <jfitzpatrick@ntia.gov>
Sent: Friday, March 15, 2024 2:36 PM
To: ldfthpo <ldfthpo@ldftribe.com>
Cc: Sunshine Bear <sunshine.bear@winnebagotribe.com>; Joy Johnson <joy.johnson@winnebagotribe.com>; Krista Schnepf <kschnepf@olsson.com>
Subject: Winnebago Tribe of Nebraska Broadband Project: TCNS LDF Response

Hi Ms. Thompson:

I left a voicemail, but wanted to follow up with an email. Per below, you had commented on the Winnebago Tribe of Nebraska's proposed broadband project in TCNS. Are you wanting to see more informaiton on this project? I believe the TCNS submittal has the information you had requested so I am just checking. I have copied the Winnebago THPO and management for visibility as well. Please let me know your thoughts.

Please forward the following information: a short summary of all proposed activity within the project area, Legal Description of the Area of Potential Effects, Topo maps identifying the proposed area, and copies of any studies that have already been conducted regarding cultural resources and archeology in their full format, including reports on archeological and cultural sites identified. Should you have any questions, please feel free to contact me at 715-588-2139 or ldfthpo@ldftribe.com Please send requested information to: Sarah E. Thompson, THPO Lac du Flambeau Band of Lake Superior Chippewa Indians THPO P.O. Box 67 (Postal) 418 Little Pines (FedEx Mailing Address) Lac du Flambeau, WI 54538 Or ldfthpo@ldftribe.com

Thank you,

Josh Fitzpatrick
Environmental Program Officer
National Telecommunications and Information Administration
Office of Internet Connectivity and Growth
Email: jfitzpatrick@ntia.gov
Phone: 202.834.3123

Spirit Lake Tribe
Tribal Historic Preservation Office
PO Box 359
Fort Totten, ND 58335

To: JOSH FITZPATRICK
Date: MARCH 21, 2024
Project: WINNEBAGO TRIBE OF NEBRASKA
TCNS: 276634

FINDING OF NO EFFECT – While there are cultural resources in the vicinity of the proposed undertaking - no cultural resources should be adversely affected by your proposed undertaking. If cultural materials are discovered during construction please notify the Tribal Historic Preservation Office.

Under the authority of Section 1N06 of the National Historic Preservation Act of 1966 and in accordance with 36CFR800.2A4, after reviewing the materials you gave us for the project, the Spirit Lake Tribal Historic Preservation Department finds there should be no effect by the proposed undertaking on cultural resources.

The proposed undertaking is near known and documented cultural resources. Many of these resources are Native American sites. The vicinity of the project is significant to the Mini Wakan Oyate – Spirit Lake Tribe (People of Spirit Waters). For millennia, the Mini Wakan Oyate have cekiya (prayed), gathered phezuta (medicines), and eti (camped) the surrounding vicinity. Since the area around the project was HEAVILY utilized in prehistoric times, it is particularly important for the construction to remain in the areas designated in the archaeological survey. No further cultural resource work is necessary for this project as long as the areas outlined are adhered to. If additional work is necessary outside the areas designated, please notify our department and we can make the necessary arrangements.

Please be aware though, because cultural inventories are done at different times of the year and under different circumstances there can be variations in the effectiveness of pedestrian surveys. At times, certain resources are not visible. For instance, medicinal plants, some very significant to the ongoing traditions and lifeway of the Spirit Lake people, may only be seen in the spring or summer of the year. Other times, the grass is too deep for certain features or artifacts to be located through pedestrian surveys. With this in mind, we recommend that cultural resources not be forgotten with this letter of finding of no properties affected. **If resources are located during construction please halt activity and notify our office.**

Spirit Lake Tribe
Tribal Historic Preservation Office
PO Box 359
Fort Totten, ND 58335

Thank you for consulting with the Tribal Historic Preservation Office. If you have any questions please feel free to contact me at 701.381-2009, or Thpo@gondtc.com

Kenneth Graywater Jr., Director
SPIRIT LAKE TRIBE
Tribal Historic Preservation Office

From: Fitzpatrick, Joshua <jfitzpatrick@ntia.gov>
Sent: Friday, April 5, 2024 11:40 AM
To: Krista Schnepf
Subject: FW: 276634

Importance: High

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Hey Krista,

Here is one more response from the Northern Cheyenne THPO office of No effect for the Winnebago project.

Please reference in the EA and attach in appendix.

Thank you,

Josh Fitzpatrick
Environmental Program Officer
National Telecommunications and Information Administration
Office of Internet Connectivity and Growth
Email: jfitzpatrick@ntia.gov
Phone: 202.834.3123

From: gary.lafranier@cheyennenation.com <gary.lafranier@cheyennenation.com>
Sent: Friday, April 5, 2024 10:52 AM
To: Fitzpatrick, Joshua <jfitzpatrick@ntia.gov>
Subject: 276634
Importance: High

Good Morning,

276634 will have a determination of No Effect. Project may proceed as planned

Thank You,

Gary LaFranier
FCC/ Section 106 Coordinator
(406) 477-8114

Lame Deer, MT. 59043

From: Fitzpatrick, Joshua <jfitzpatrick@ntia.gov>
Sent: Wednesday, April 24, 2024 6:28 PM
To: Krista Schnepf
Subject: Fwd: Reply to Proposed Tower Structure (Notification ID: 276634) - Email ID #8808900

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From: towernotifyinfo@fcc.gov <towernotifyinfo@fcc.gov>
Sent: Wednesday, April 24, 2024 8:26:06 AM
To: Fitzpatrick, Joshua <jfitzpatrick@ntia.gov>
Cc: tcns.fccarchive@fcc.gov <tcns.fccarchive@fcc.gov>; taramitchell@pbpnation.org <taramitchell@pbpnation.org>; raphaelwahwassuck@pbpnation.org <raphaelwahwassuck@pbpnation.org>
Subject: Reply to Proposed Tower Structure (Notification ID: 276634) - Email ID #8808900

Dear Director, Grants Management and Complian Jennifer Duane Ms,

Thank you for using the Federal Communications Commission's (FCC) Tower Construction Notification System (TCNS). The purpose of this email is to inform you that an authorized user of the TCNS has replied to a proposed tower construction notification that you had submitted through the TCNS.

The following message has been sent to you from Deputy Tribal Historic Preservation Officer Tara Mitchell of the Prairie Band Potawatomi Nation in reference to Notification ID #276634:

Based on your description we are unaware of any potential resources or sites affected in this area. This is not to say that such a site may not exist, just that this office does not have any available information on the area(s) at this time. We request to receive communication regarding the proposed project. If human remains or archaeological materials are exposed as a result of project activities then work must halt and the Tribe must be included in any further discussion regarding the treatment and disposition of the findings prior to their removal. Tara Mitchell, Deputy Tribal Historic Preservation Officer, will be the primary contact. Her contact information is 785-966-3984 or email TaraMitchell@pbpnation.org.

For your convenience, the information you submitted for this notification is detailed below.

Application Details

Notification ID: 276634
Project Number: 112822
Applicant: Winnebago Tribe of Nebraska
Applicant Contact: Joy Johnson

Project Type(s):

Other (details in attachments)

Region(s) affected by the proposed broadband project:

IOWA, WOODBURY
NEBRASKA, DAKOTA
NEBRASKA, DIXON
NEBRASKA, THURSTON
NEBRASKA, WAYNE

Address or Geographical Location Description: Winnebago Tribe of Nebraska

From: Fitzpatrick, Joshua <jfitzpatrick@ntia.gov>
Sent: Wednesday, April 24, 2024 6:27 PM
To: Krista Schnepf
Subject: Fwd: Reply to Proposed Tower Structure (Notification ID: 276634) - Email ID #8790861

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From: towernotifyinfo@fcc.gov <towernotifyinfo@fcc.gov>
Sent: Wednesday, April 24, 2024 8:24:41 AM
To: Fitzpatrick, Joshua <jfitzpatrick@ntia.gov>
Cc: tcns.fccarchive@fcc.gov <tcns.fccarchive@fcc.gov>; archtech.nathpo@gmail.com <archtech.nathpo@gmail.com>; pejuta.villa@northernarapaho.com <pejuta.villa@northernarapaho.com>
Subject: Reply to Proposed Tower Structure (Notification ID: 276634) - Email ID #8790861

Dear Director, Grants Management and Complian Jennifer Duane Ms,

Thank you for using the Federal Communications Commission's (FCC) Tower Construction Notification System (TCNS). The purpose of this email is to inform you that an authorized user of the TCNS has replied to a proposed tower construction notification that you had submitted through the TCNS.

The following message has been sent to you from THPO Benjamin Ridgley of the Northern Arapaho in reference to Notification ID #276634:

The Northern Arapaho THPO has reviewed your Consultation Request under the National Environmental Protection Act & National Historic Preservation Act, Section 106 process, regarding the proposed project & offers the following response:

No Historic Properties in the Direct or Visual APE

Our office has come to this determination by drawing conclusions from the report, ethnography, previous survey search from SHPO and maps depicting province of sites in regards to Direct and Visual APE. There are no cultural resources and no eligible historic properties within the APE. Currently, there are no properties of religious and cultural significance to the Northern Arapaho within the area of potential effect. However, if traditional cultural properties, rock features, or human remains are found during excavation with any new ground disturbance, we request to be contacted and a report provided.

For your convenience, the information you submitted for this notification is detailed below.

Application Details

Notification ID: 276634
Project Number: 112822
Applicant: Winnebago Tribe of Nebraska
Applicant Contact: Joy Johnson

Project Type(s):
Other (details in attachments)

Region(s) affected by the proposed broadband project:
IOWA, WOODBURY
NEBRASKA, DAKOTA
NEBRASKA, DIXON
NEBRASKA, THURSTON
NEBRASKA, WAYNE

Address or Geographical Location Description: Winnebago Tribe of Nebraska

UNITED STATES DEPARTMENT OF COMMERCE
National Telecommunications and Information Administration
Washington, DC 20230

February 21, 2024

Betty Gillespie
Deputy State Historic Preservation Officer
History Nebraska State Historic Preservation Office
1500 R Street
Lincoln, NE 68508

Subject: Section 106 Finding of No Historic Properties Affected Submitted to the Nebraska State Historic Preservation Office (SHPO) for the Winnebago Tribe of Nebraska (Federal Grant #NT22TBC0290076) Broadband Fiber Project

Dear Ms. Gillespie,

The Winnebago Tribe of Nebraska (Grantee) was awarded funding for a proposed Broadband Connectivity Project (Project) under the U.S. Department of Commerce, National Telecommunications and Information Administration (NTIA) Tribal Broadband Connectivity Program (TBCP). The purpose of the Project is to deploy a broadband infrastructure network on the Winnebago Reservation and in the adjacent communities of Emerson, Homer, and Wakefield, Nebraska to connect unserved/underserved tribal households, businesses, and community anchor institutions (i.e., schools, medical facilities) to reliable and affordable high-speed Internet. The Project would provide qualified broadband service with a minimum speed of 200/40 megabits per second (Mbps) to approximately 600 unserved Native American households, 40 unserved Native American and/or tribal businesses, and 16 tribal anchor institutions. In addition, the Project includes a rate stabilization program designed to provide up to a maximum payment on broadband household monthly bills to alleviate the burden felt most heavily by those in poverty and to prevent disconnection of service.

The fiber-optic installation alignment is generally located on the Winnebago Tribe of Nebraska Reservation, which spans approximately 120,000 acres and is situated primarily in a rural area in the northern half of Thurston County in northeast Nebraska, 20 miles south of Sioux City, Iowa, and 80 miles north of Omaha, Nebraska. U.S. highways 75 and 77 join in the east-central area of the reservation, near the community of Winnebago. A small portion of the reservation is located directly east of the Iowa-side of the Missouri River west of Interstate 29 in Woodbury County.

Portions of the fiber-optic alignment also extend to communities just outside of the reservation, including the northern portion of Emerson (the southern half of Emerson is within the reservation; Dakota, Dixon, and Thurston counties), Homer (Dakota County), and Wakefield (Dixon and Wayne counties). In addition, the fiber-optic alignment extends north to the Western Iowa Technical Community College in Sioux City, Iowa and a very small portion outside of the southern Winnebago Reservation boundary in Iowa (Woodbury County). Refer to the attached Figures 2A-2F and 2K-2L for a depiction of the project location as it relates to SHPO jurisdiction off the Reservation. The fiber-optic alignment includes two crossings under the Missouri River at approximately River Miles (RMs) 711.0 and 729.7. The southern crossing will connect those southern portions of the reservation on the Iowa side of the river.

The Project is expected to facilitate economic development and commercial activity, create remote employment and entrepreneurial opportunities, and increase availability of remote learning and telehealth services.

1. Description of the Undertaking

The proposed action involves the construction of a multi-conduit, underground Fiber to the Premises (FTTP) system capable of 200 Mbps download speeds and 40 Mbps upload speeds. In total, approximately 235 miles of new fiber-optic cable would be buried within protective conduit along existing road right-of-way (ROW) and under the Missouri River in the project area. The buried fiber-optic line installation, which consists of the telecommunications cable and its protective conduit, would be performed using plowing and trenching construction techniques along roadways, and a directional boring machine would be used to install line under waterway, road, and railroad crossings. In addition, to facilitate operation and maintenance of the Fiber to the Home (FTTP) system, ancillary equipment would be installed along the alignment including optical line terminals (OLT), vaults, handholes, pedestals, markers, and network interface devices (NID).

Approximately 156 miles of the proposed installations would be performed using plowing or trenching construction techniques within existing road ROW. Plowed conduit would be installed using a track-type bulldozer equipped with a specialized single ripper that loosens the soil along the installation path. Conduit would be fed either from the plow bulldozer or from a separate truck-mounted reel through a plow chute attached to the ripper and laid directly at a nominal depth of approximately 36 to 48 inches, depending on permit requirements. A compaction machine would follow directly behind the plow bulldozer and restore the ground surface to its original contour. The installation path may be preripped by a second bulldozer, if necessary, to loosen the soil in areas where subsurface rock or other buried obstructions may be present. This second bulldozer may also, in some cases, be attached to the plow bulldozer to provide additional pulling power for the plowing operation. Ground disturbance associated with the plowed installation would be limited to an approximately 8-foot-wide corridor. In areas that are too narrow for plowing equipment to be used and where directional boring is not required to avoid surface disturbance, trenching construction techniques would be used for the conduit installations. Typically, a backhoe would be used to dig the required trench, although a compact excavator may be used in areas that are exceedingly narrow. The nominal trench depth would be the same as for plowed installations.

Approximately 78 miles of the proposed installations would be performed using directional boring construction techniques. Directional boring is a method used to install utility lines under waterways and roads and in other areas where the avoidance of surface disturbance is desirable. Directional boring machines are horizontal drilling rigs with a steerable drill bit. In general, each bore begins with the creation of a pilot hole (entry pit), through which the drill bit is guided by the operator as it progresses along the desired boring path toward the exit pit. After the pilot hole has been bored, conduit is attached to the end of the drill string, and the conduit is pulled back through the bore.

In addition to shorter road and railroad boring installations, the proposed action includes horizontal drilling underneath the Missouri River from Nebraska to Iowa at RM 711.0 (with a bore length of approximately 5,240 feet) and RM 729.7 (with a bore length of approximately 1,670 feet). For this installation, a drilling rig would be stationed at a fixed point, or entry pit, where the operator installs a piloted drilling bit while adding segments of drill rod at predetermined depths horizontally across the river. At the surface level, a locator assists the rig operator by locating the position and the depth of the piloted drilling bit as it moves away from the drilling rig. While drilling, the rig operator would continuously inject an inert clay-based fluid that lubricates and stabilizes the bore hole. This process would continue until the piloted drilling bit reaches the exit pit on the other side of the river. The piloted drilling bit would then be removed, and stages of larger reamers and drill rod would be added and pulled toward the rig operator to enlarge the hole in preparation for pipe installation. This method allows for the continuous monitoring of the bore hole and maintains a pathway until the pipe package is ready for installation. Once the hole is large enough for the determined diameter of pipe(s), the pipe package would be connected to the drilling rods and pulled across the river toward the drilling rig operator. The pipe package would then be secured at both the entry and exit pits, and the annular space around the pipe package would be filled/grouted if required or determined necessary and the ground surface restored to its original contour.

Exploratory drill borings were completed on July 26, November 3, and November 7, 2023, to determine the soil structure of the proposed drill holes. The drilling method used was a hollow-stem from 0 to 15 feet then a rotary drill to 100 feet (termination). This method was used to determine the stratigraphy of the soils to be certain that the borings under the river will hold. The general stratigraphy of the boring holes consisted of native sand and clay and imported clay fill material.

Attached please find both KMZ and a zipped folder with Shapefiles (projected in Coordinate System: NAD_1983_UTM_Zone_14N) of the proposed alignment as well as any staging/stockpile/laydown areas on both sides of the river. The Bureau of Indian Affairs (BIA) Great Plains Archeologist has surveyed these staging areas. These files also include known previously recorded resources and any previous archaeological surveys within 150 feet of the proposed centerline that was received as part of the file search. To aid in project understanding, a file outlining the proposed construction equipment and methods that are planned for the project is also attached. Please note, the Horizontal Bore/Pneumatic Drilling method will be limited to the borings under the Missouri River.

2. Area of Potential Affect (APE)

The attached APE is the area within which an undertaking may affect a historic property, either directly or indirectly. The Area of Potential Effect is the maximum area of disturbance for the proposed project in Nebraska. The APE consists of a 15' buffer measured from either side of the Project centerline, as defined by the NTIA in consultation with the Nebraska SHPO.

3. Efforts to Identify Historic Properties

A cultural resources literature review and intensive pedestrian survey was completed by Beaver Creek Archeology (BCA) for the Nebraska segment of the Winnebago Broadband project in Dakota, Dixon, Thurston, and Wayne Counties, Nebraska. See the attached cultural resources report based off the summary below.

The literature review covered the entirety of the proposed project area plus a one-mile buffer. The literature review revealed 201 previously documented cultural resources within a one-mile radius of the project area. Approximately 82 cultural resources were on file at the Nebraska SHPO, 81 through the Winnebago Tribal Historic Preservation Offices (THPO), and 38 were on file at the Iowa Office of State Archeology (OSA). See the attached cultural resources report for further information.

The NTIA, in consultation with the Nebraska SHPO, determined that certain locations in the inventory area must undergo intensive pedestrian survey. On December 19, 2023, BCA conducted the intensive pedestrian inventory, with Wade Burns serving as the Principal Investigator/Project Director and Clay Bruckner serving as Staff Archaeologist. Christopher Guevara served as a Tribal Cultural Specialist (TCS) from the Omaha Tribe of Nebraska and Iowa. The Winnebago Tribe was invited to participate in the project, but was unable to attend.

During the survey of these areas, no new or previously documented cultural resources were encountered. However, nine historic structures were observed and are recommended as "not eligible" for nomination to the National Register of Historic Places (NRHP). As a result, they were not formally documented, and no specific avoidance measures are recommended for these locations. See the attached cultural resources report for further information.

Within the remaining 1,985 acres of inventory area, which were not surveyed, there are 30 cultural resource sites which are on file at the Nebraska SHPO and are located within or near (within 100' of) the inventory area. The results include five NRHP listed sites, 20 sites recommended as eligible or unevaluated, and five sites recommended as ineligible for inclusion on the NRHP. The proposed broadband project is designed to provide service to three historic structures listed on the NRHP (Sites DK00001, DK00113, and DX09001). The proposed project is currently routed around Site DX04-003, an NRHP listed city park, as well. Installation of the fiber optic line is not expected to impact any of these properties and no specific avoidance measures are recommended for these sites.

Due to the lack of recent previous archaeological survey in the remainder of the inventory area, along with the high probability for cultural resources and/or human remains, the NTIA requires that the Winnebago Tribe of Nebraska maintain the currently planned route and remain within existing ground disturbances when working within or near (within 100' of) the remaining 20 previously documented NRHP listed, eligible, or unevaluated cultural resource sites (see attached cultural resources report). Archaeological and tribal monitoring will occur when construction is occurring within and near to (within 100' of) each the sites in Table 4 of the cultural resources report (see attached cultural resources report).

Consultation with the Winnebago and Omaha THPOs is currently underway and will continue throughout project construction. An Unanticipated Discovery plan is currently being developed if any resources are found during construction.

4. Basis for Finding

Based on the previous coordination with the Nebraska SHPO and our ongoing consultation and efforts to identify historic properties, the NTIA has made a Section 106 finding of No Adverse Effect to Historic Properties. As mentioned, NTIA will require the proposed project construction remain within existing ground disturbances when working within or near (within 100'of) the remaining 20 previously documented NRHP listed, eligible, or unevaluated cultural resource sites. Archaeological and tribal monitoring is also required when construction is occurring within and near to (within 100' of) each of these sites (Table 4 of the cultural resources report). The APE was determined by the NTIA in consultation with the Nebraska SHPO and Winnebago Tribe of Nebraska, but if SHPO prefers changes or adjustments to the APE area please alert the NTIA Environmental Program Officer. I respectfully request your response to this Section 106 Determination within 30 days of receipt.

If you have questions or need any additional information, please contact me at jfitzpatrick@ntia.gov or 202-834-3123. I look forward to your reply.

Sincerely,

Josh Fitzpatrick
Digitally signed by Josh Fitzpatrick
Date: 2024.02.21 11:33:54 -06'00'

Josh Fitzpatrick
Environmental Program Officer
National Telecommunications and Information Administration
Department of Commerce

Attachments:
Figures
KMZ/SHP Files project alignment and staging areas
Construction Methods Guidance
APE Map
Cultural Resources Literature Review and Intensive Pedestrian Survey

History NEBRASKA

Preserving the past. Building the future.

March 14, 2024

Josh Fitzpatrick
Environmental Program Officer
National Telecommunications and Information Administration
Department of Commerce
VIA EMAIL

RE: HP# 2311-033-01; Winnebago Broadbank Line, Section 106 Finding, Dakota, Dixon, and Thurston Counties, NE, Grant #NT22TBC0290076

Dear Josh Fitzpatrick,

Thank you for submitting the above-referenced project changes for review and comment by the Nebraska State Historic Preservation Office (NeSHPO). Our comment on this project and its potential to affect historic properties is required by Section 106 of the National Historic Preservation Act of 1966, as amended, and implementing regulations 36 CFR Part 800.

Based on the additional information provided, the proposed undertaking is unlikely to adversely affect any cultural resources listed on the National Register of Historic Places or eligible for such a listing. Therefore, the NeSHPO concurs with the determination that ***No Adverse Effect to Historic Properties*** is appropriate for this undertaking, and the project can proceed as planned so long as the following conditions are met:

1. Proposed project construction needs to remain within existing ground disturbances when working within or near (within 100' of) the documented NRHP listed, eligible, or unevaluated cultural resource sites.
2. Archeological and tribal monitoring is required when construction is occurring within and near to (within 100' of) each of the sites identified in Table 4 of the survey report.

These conditions were expressed in the request letter but are being provided in this letter to ensure all parties are aware of these conditions.

Please retain this correspondence and your documented finding in order to show compliance with Section 106 of the National Historic Preservation Act, as amended. If you have any questions, please contact me at betty.gillespie@nebraska.gov or 402-805-7392.

Sincerely,

Betty Gillespie
Interim Deputy SHPO
Section 106 Review & Compliance Coordinator

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From: Branden Scott <branden.scott@iowa.gov>
Sent: Wednesday, February 7, 2024 7:32 AM
To: jfitzpatrick@ntia.gov
Cc: sunshine.bear@winnebagotribe.com; Krista Schnepf <kschnepf@olsson.com>; shpo106@iowaeda.com
Subject: R&C 230897264 - 00050141 - COM - Woodbury - Winnebago Tribe of Nebraska Broadband Fiber Project

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Mr. Fitzpatrick:

We have received your submittal for the above referenced federal undertaking. We provide the following response in accordance with Section 106 of the National Historic Preservation Act of 1966 and its implementing regulations 36 CFR 800.

Regarding this project, please see the following comments:

R&C 230897264 - 00050141 - COM - Woodbury - Winnebago Tribe of Nebraska Broadband Fiber Project - The purpose of the Project is to deploy a broadband infrastructure network on the Winnebago Reservation and in the adjacent communities of Emerson, Homer, and Wakefield, Nebraska to connect unserved/underserved tribal households, businesses, and community anchor institutions (i.e., schools,

medical facilities) to reliable and affordable high-speed Internet. The Project would provide qualified broadband service with a minimum speed of 200/40 megabits per second (Mbps) to approximately 600 unserved Native American households, 40 unserved Native American and/or tribal businesses, and 16 tribal anchor institutions. In addition, the Project includes a rate stabilization program designed to provide up to a maximum payment on broadband household monthly bills to alleviate the burden felt most heavily by those in poverty and to prevent disconnection of service.
The fiber-optic installation alignment is generally located on the Winnebago Tribe of Nebraska Reservation, which spans approximately 120,000 acres and is situated primarily in a rural area in the northern half of Thurston County in northeast Nebraska, 20 miles south of Sioux City, Iowa, and 80 miles north of Omaha, Nebraska. U.S. highways 75 and 77 join in the east-central area of the reservation, near the community of Winnebago. A small portion of the reservation is located directly east of the Iowa-side of the Missouri River west of Interstate 29 in Woodbury County.

As it concerns the small section of the undertaking in Woodbury County, Iowa at Sioux City, we concur with the federal agency and/or their designated representative (No Historic Properties Affected - No Effect). All other areas of this undertaking occur outside of Iowa or Section 106 consultation will be completed by the Winnebago Tribe of Nebraska.

You will not receive a hard copy of this email. It is the submitter's responsibility to maintain the official file of record. If you have any questions or comments, please feel free to contact our office.

With kind regards,
Branden K. Scott
Archaeologist, State Historic Preservation Office
branden.scott@iowaeda.com | 515.348.6291 | culture.iowaeda.com/shpo

Iowa Economic Development Authority

UNITED STATES DEPARTMENT OF COMMERCE
National Telecommunications and Information Administration
Washington, DC 20230

April 19, 2024

State Historic Preservation Officer
State Historical Society of Iowa
600 E Locust Street
Des Moines, IA 50319

Subject: R&C 230897264 - 00050141 - COM - Woodbury - Winnebago Tribe of Nebraska Broadband Fiber Project

Dear Mr. Scott:

This email serves as an update and a follow-up to your email on February 7, 2024, providing concurrence with NTIA's finding of No Historic Properties Affected - No Effect for the referenced project.

Since then, the horizontal drilling approach for the South Sioux City bore location has been further evaluated based on calculations from geotechnical data. This evaluation indicates there is the **potential** for fracturing during the horizontal drilling process due to high pressures. To address this potential concern **if it occurs** during horizontal drilling, one vertical boring using a 6-inch outer diameter core would be installed to reduce the pressures and prevent or minimize fracturing. This boring would be advanced to the depth of the horizontal boring (approximately 50 feet below ground surface) using a mud rotary drill rig (or similar). A casing or conduit would be temporarily installed in the boring to reduce the pressures in the horizontal boring. When complete, the boring would be properly abandoned.

If needed, the vertical boring would be east of the railroad tracks and west of the previous core (I7G Core 1) completed for the geomorphological assessment in November 2023. In addition, the vertical boring location would be along the previously provided horizontal boring path, within the 25-foot buffer of the Area of Potential Affect (APE), and within 270 feet of I7G Core 1. The I7G Core 1 contained colluvium over Corrington in recovered cores. The Corrington Member occurred in the core from about 160 centimeters (5.25 feet) to about 3 meters (9.84 feet), and the lithology of this additional boring is expected to be similar. See attached figures showing the horizontal boring/fiber path, previous geomorphological assessment core locations, and projected area for the location of the potential vertical boring.

Based on this additional information to allow for this contingency, NTIA's determination of No Historic Properties Affected - No Effect remains unchanged. Your feedback on this update and your concurrence with the associated determination is requested.

Please let me know of any questions or if a call would be helpful to discuss.

UNITED STATES DEPARTMENT OF COMMERCE
National Telecommunications and Information Administration
Washington, DC 20230

Sincerely,

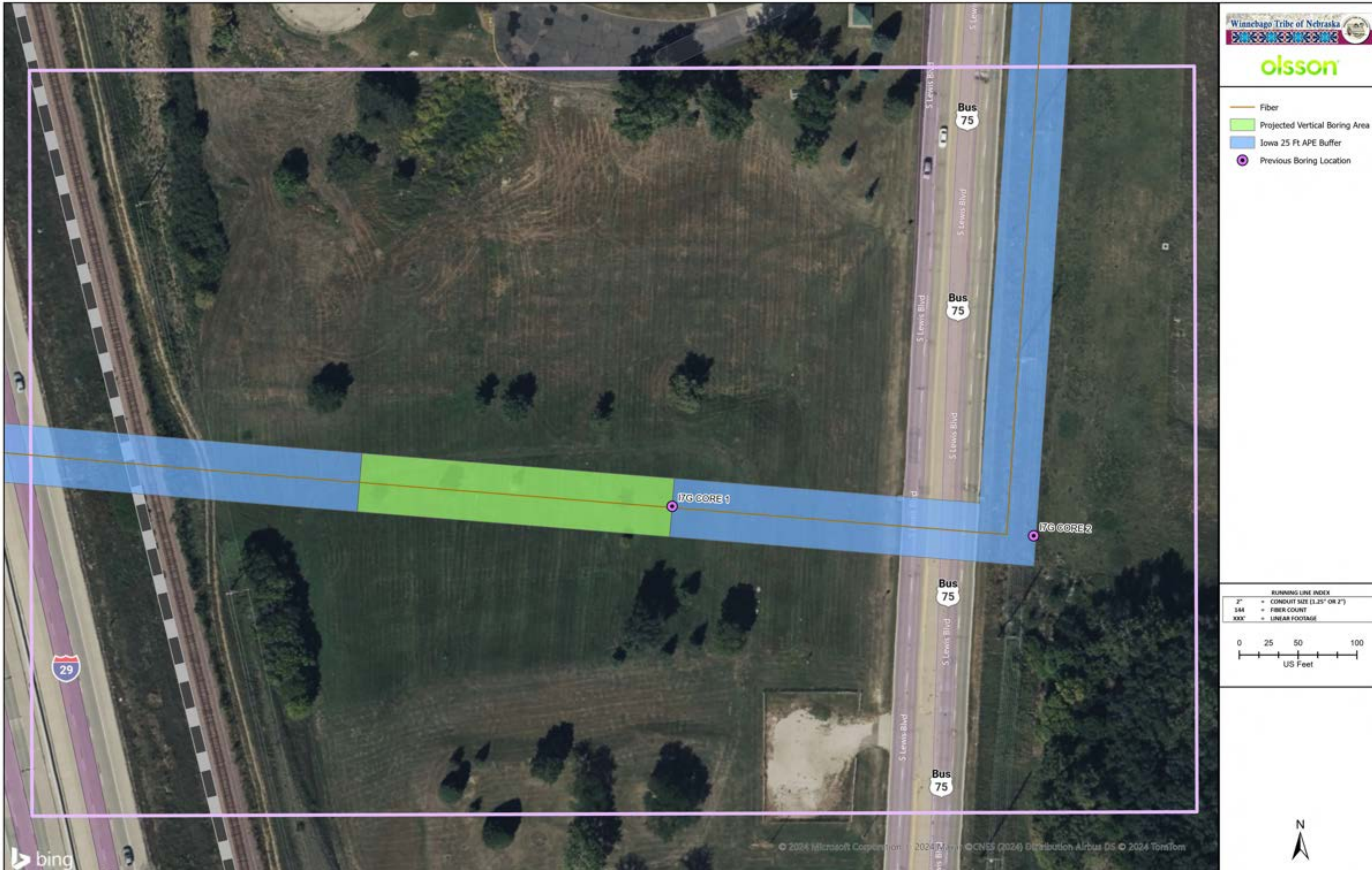
Josh Fitzpatrick

Digitally signed by Josh Fitzpatrick
Date: 2024.04.19 14:57:31 -05'00'

Josh Fitzpatrick
Environmental Program Officer
National Telecommunications and Information Administration
Department of Commerce

Attachments:
Horizontal boring/fiber path, previous geomorphological assessment core locations
Projected area for the location of the potential vertical boring.

Winnebago Tribe of Nebraska
olsson
Fiber
Projected Vertical Boring Area
Iowa 25 Ft APE Buffer
Nebraska 15 Ft APE Buffer
Previous Boring Location
RUNNING LINE INDEX
2" = CONDUIT SIZE (1.25" OR 2")
144 = FIBER COUNT
XXX' = LINEAR FOOTAGE
0
80
160
320
US Feet
N
Missouri River
Missouri River
Missouri River
Missouri River
Missouri River
Missouri River
Missouri River
Geotech Soil Sample
I7G CORE 1
I7G CORE 2
S Lewis Blvd
S Lewis Blvd
S Lewis Blvd
S Lewis Blvd
S Lewis Blvd
S Lewis Blvd
29
29
29
75
75
bing


Winnebago Tribe of Nebraska
olsson
Fiber
Projected Vertical Boring Area
Iowa 25 Ft APE Buffer
Previous Boring Location
RUNNING LINE INDEX
2" = CONDUIT SIZE (1.25" OR 2")
144 = FIBER COUNT
XXX' = LINEAR FOOTAGE
0 25 50 100
US Feet
N
I7G CORE 1
I7G CORE 2
Bus 75
S Lewis Blvd
29
bing
© 2024 Microsoft Corporation © 2024 Maxar ©CNES (2024) Distribution Airbus DS © 2024 TomTom

From: branden.scott@email.iowaeda.com
Sent: Monday, April 22, 2024 12:37 PM
To: jfitzpatrick@ntia.gov
Cc: Krista Schnepf; sunshine.bear@winnebagotribe.com; shpo106@iowaeda.com
Subject: R&C 230897264 - 00050141 - COM - Woodbury - Winnebago Tribe of Nebraska Broadband Fiber Project

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Project Update 4/22/24 submittal: Please see the attached proposed amendment to the Winnebago Tribal Broadband project. To address fracturing potential concern if it occurs during horizontal drilling, one vertical boring using a 6-inch outer diameter core would be installed to reduce the pressures and prevent or minimize fracturing.

The Impact7G Core #1 demonstrated intact soils associated with the Corrington Member of the DeForest Formation; an alluvial package that has potential for deeply buried archaeological sites. The Corrington Member deposit is buried below late Holocene alluvium. Our understanding of the scope of work change is that you will need to:

A) Access the location by driving across the surface. Given the soil of interest is deeply buried, significant archaeological resources are unlikely to be affected by this activity.

B) Drill a vertical hole to the depth of the horizontal boring that is 6" in diameter. In our opinion, a 6" hole at this location is unlikely to affect historic integrity of unidentified archaeological sites that might exist within the soil. If activities require a larger than 6" excavation area (such as a receiving pit), then we would recommend Phase I archaeological investigations prior to drilling work.

C) Should archaeological deposits be uncovered during the activities, however, we request that consultation be reopened to evaluate any effects to historic properties.

Concur with the federal agency and/or their designated representative (No Historic Properties Affected - No Effect).

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With kind regards,
Branden K. Scott
Archaeologist, State Historic Preservation Office
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Iowa Economic Development Authority

--------------- Original Message ---------------
From: Branden Scott [branden.scott@iowa.gov]
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To: jfitzpatrick@ntia.gov
Cc: sunshine.bear@winnebagotribe.com; kschnepf@olsson.com; shpo106@iowaeda.com
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