

Appendix A: Threatened and Endangered Species



United States Department of the Interior



FISH AND WILDLIFE SERVICE
North Dakota Ecological Services Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926
Phone: (701) 250-4481 Fax: (701) 355-8513

In Reply Refer To:

10/08/2025 21:41:00 UTC

Project Code: 2024-0132672

Project Name: Casselton Robert Miller Regional Airport Runway Relocation

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:

Section 7 of the Endangered Species Act

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 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 Act requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the Service *if they determine their project and associated actions "may affect" listed species or critical habitat*. If Federal agencies or their non-federal representatives determine their project and associated actions will have "no effect" on listed species, their habitats, or designated critical habitat, consultation is not required. However, if a "no effect" is determined, we recommend that you maintain a written record in support of your conclusion.

Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act

Additionally, while not all are listed as threatened or endangered, eagles and migratory birds

have protections under the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act (MBTA). The BGEPA prohibits take which is defined as, “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb” (50 CFR 22.3). Disturb is defined in regulations as, “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.”. The MBTA makes it unlawful without a waiver to pursue, hunt, take, capture, kill, or sell birds listed as migratory birds, including eagles. The statute does not discriminate between live or dead birds and also grants full protection to any bird parts including feathers, eggs, and nests.

Service Property Interests

As part of the National Wildlife Refuge System, the Service administers fee title Refuge and Waterfowl Production Areas, as well as wetland and grassland easements, throughout North Dakota. For exact locations of Service interest lands, please contact the appropriate Wetland Management Districts (WMD) for guidance regarding FWS easements.

Northwest ND WMD Complex: Kyle Flanery, (701) 768-2548

Eastern ND WMD Complex: Dave Azure, (701) 285-3341

Central ND WMD Complex (also covers south and west): Todd Luke, (701) 442-5474

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- 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:

North Dakota Ecological Services Field Office

3425 Miriam Avenue

Bismarck, ND 58501-7926

(701) 250-4481

PROJECT SUMMARY

Project Code: 2024-0132672
Project Name: Casselton Robert Miller Regional Airport Runway Relocation
Project Type: Airport - Maintenance/Modification
Project Description: Relocate concrete runway 400 feet northeast, shift to east, extend from 3,900 feet to 5,500 feet, acquire 235 acres of agricultural property, and relocate portion of township roads. Property acquisition to begin in 2026, construction 2027-2028.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@46.85111035,-97.20168378292486,14z>



Counties: Cass County, North Dakota

ENDANGERED SPECIES ACT SPECIES

There is a total of 2 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 Fisheries¹, 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.

-
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.

INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> There is proposed critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened
Suckley's Cuckoo Bumble Bee <i>Bombus suckleyi</i> Population: No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10885 General project design guidelines: https://ipac.ecosphere.fws.gov/project/JLNCGWSD5FZLOG7OS2U5O5ECI/documents/generated/9852.pdf	Proposed Endangered

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.

WETLANDS

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

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

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

FRESHWATER EMERGENT WETLAND

- PEM1Cx

IPAC USER CONTACT INFORMATION

Agency: Casselton city
Name: Sarah Emmel
Address: 7900 International Drive, Suite 980
City: Bloomington
State: MN
Zip: 55425
Email sarah.emmel@meadhunt.com
Phone: 9526418808

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Aviation Administration

Appendix B: Farmland Consultation

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request 08/15/2024			
Name of Project Casselton Robert Miller Regional Airport		Federal Agency Involved Federal Aviation Administration			
Proposed Land Use Airport		County and State Cass County & Everest Township, ND			
PART II (To be completed by NRCS)		Date Request Received By NRCS 8/15/2024		Person Completing Form: Wade Bott	
Does the site contain Prime, Unique, Statewide or Local Important Farmland? <i>(If no, the FPPA does not apply - do not complete additional parts of this form)</i>		YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>	Acres Irrigated NA	Average Farm Size 1436
Major Crop(s) corn, beans, spring wheat	Farmable Land In Govt. Jurisdiction Acres: NA %		Amount of Farmland As Defined in FPPA Acres: NA %		
Name of Land Evaluation System Used LESA	Name of State or Local Site Assessment System LESA		Date Land Evaluation Returned by NRCS 8/16/2024		
PART III (To be completed by Federal Agency)		Alternative Site Rating			
		Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly		178.2			
B. Total Acres To Be Converted Indirectly		0			
C. Total Acres In Site		178.2			
PART IV (To be completed by NRCS) Land Evaluation Information					
A. Total Acres Prime And Unique Farmland		178.2			
B. Total Acres Statewide Important or Local Important Farmland		0			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted		.001			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value		56.7			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)		88			
PART VI (To be completed by Federal Agency) Site Assessment Criteria <i>(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)</i>		Maximum Points	Site A	Site B	Site C
1. Area In Non-urban Use		(15)	15		
2. Perimeter In Non-urban Use		(10)	10		
3. Percent Of Site Being Farmed		(20)	20		
4. Protection Provided By State and Local Government		(20)	20		
5. Distance From Urban Built-up Area		(15)	15		
6. Distance To Urban Support Services		(15)	0		
7. Size Of Present Farm Unit Compared To Average		(10)	10		
8. Creation Of Non-farmable Farmland		(10)	0		
9. Availability Of Farm Support Services		(5)	5		
10. On-Farm Investments		(20)	10		
11. Effects Of Conversion On Farm Support Services		(10)	0		
12. Compatibility With Existing Agricultural Use		(10)	0		
TOTAL SITE ASSESSMENT POINTS		160	105	0	0
PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)		100	88	0	0
Total Site Assessment (From Part VI above or local site assessment)		160	105	0	0
TOTAL POINTS (Total of above 2 lines)		260	193	0	0
Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES <input type="checkbox"/> NO <input type="checkbox"/>			
Reason For Selection:					
Name of Federal agency representative completing this form:					Date:

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

- Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, <http://fppa.nrcs.usda.gov/lesa/>.
- Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s) of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map, or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)
- Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.
- Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.
- Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.
- Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.
- Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.
2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.

Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \times 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

Appendix C: Phase 1 ESA

Phase I Environmental Site Assessment

Runway Relocation & Extension

**Casselton Robert Miller
Regional Airport
Casselton, North Dakota, 58012**

Prepared for

**Casselton Regional Airport
Authority**

Casselton, North Dakota, 58012

Prepared by

**Mead
& Hunt**

www.meadhunt.com

January 2024

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Summary

Mead & Hunt, Inc. (Mead & Hunt) has completed a Phase I Environmental Site Assessment (ESA), according to American Society for Testing and Materials (ASTM) E1527-21, for the proposed runway relocation and extension of the primary runway (Runway 13/31) at Casselton Regional Airport. This ESA was completed as part of a Federal Environmental Assessment (EA) in compliance with the National Environmental Policy Act (NEPA). Mead & Hunt services are authorized by the Casselton Regional Airport Authority, the project sponsor, under Task Order #3 to the Master Services Agreement. This summary is intended as an overview of the Phase I ESA for the convenience of the reader. The complete report must be reviewed in its entirety prior to making decisions regarding the Airport property.

A. Proposed Project Activities

Casselton Robert Miller Regional Airport ("Airport"), Federal Aviation Administration (FAA) identifier 5N8, is located approximately two miles south of Casselton, North Dakota (ND) and twenty miles west of Fargo, ND. The Airport is owned by the Casselton Regional Airport Authority (CRAA), which consists of the townships of Amenia, Casselton, Durbin, Empire, Everest, Harmony, and Rush River, along with the city of Casselton. The Airport serves as a general aviation hub for Cass County and has seen significant growth in users and operations. 5N8 is one of the busiest GA airports in North Dakota with over 50 aircraft and seven businesses based out of the airport. The Airport has one runway, Runway 13/31, which is 3,900 feet long by 75 feet wide and constructed of concrete.

The Casselton Regional Airport Authority is proposing to relocate and extend Runway 13/31 to support existing and future operations at the airport. The proposed project will extend Runway 13/31 by 1,600 feet, for a total resulting length of 5,500 feet, and a relocation 400 feet to the northeast. Developable space under this configuration is 43 acres, with the proposed need for acquisition of 150 to 160 acres. No wetland impacts are anticipated, but the closure of 156th Avenue SE, an incompatible land use, will be required.

A location map illustrating the proposed project area (subject property) is included in **Appendix A**. Existing Airport facilities are depicted in **Appendix B**.

B. Findings & Conclusions

Mead & Hunt has performed a Phase I ESA of the Casselton Robert Miller Regional Airport property located in Casselton, North Dakota, in conformance with our understanding of the scope and limitations of ASTM Practice E1527-21. Any exceptions to, or deletions from, this practice are described in Section 1.D of this report.

This assessment has revealed no recognized environmental conditions, controlled recognized environmental conditions, or significant data gaps in connection with the subject property.

1. Introduction

An Airport Master Plan (AMP) was completed in 2020 for Casselton Regional Airport. The AMP evaluated all aspects of the Airport, including airside and landside facilities. During development of the AMP, deficiencies in taxiway Object Free Areas and corresponding congestion and circulation limitations for aircraft became apparent. The Airport desires to address these deficiencies within the 20-year planning horizon.

Federal financial participation in projects through the Airport and Airway Improvement Act of 1982 (AIA) requires environmental review under the National Environmental Policy Act (NEPA). This EA is prepared under the requirements of the Title V of Public Law 97-248 of the Airport and Airway Improvement Act of 1982, NEPA, and FAA Order 5050.4B, National Environmental Policy Act Implementing Instructions for Airport Actions (April 2006). Mead & Hunt conducted this Phase I ESA using ASTM E1527-21, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process as part of the EA.

A. Purpose

The purpose of the Phase I ESA is to identify, pursuant to ASTM E1527-21, *recognized environmental conditions* (RECs) in connection with the property.

ASTM defines the term *recognized environmental condition* as the presence or likely presence of hazardous substances or petroleum products on the property under conditions that are indicative of an existing release, a past release, or a material threat of a release of hazardous substances or petroleum products into the structures on the property or into the ground, groundwater, or surface water of the site. The term does not include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of enforcement action if brought to the attention of appropriate governmental agencies.

B. Detailed Scope of Services

This ESA was completed in accordance with ASTM International Standard E1527-21, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, and U.S. Environmental Protection Agency (USEPA) All Appropriate Inquiries (AAI) regulations under 40 CFR Part 312.

This report summarizes the results of Mead & Hunt's investigation of the proposed project area, visual non-invasive reconnaissance of the project area and adjoining properties, federal and state database reviews, and interviews, as applicable. Limitations, deviations, and significant gaps (if identified) are evident from reviewing the applicable scope of services and the report text. No other environmental issues will be assessed beyond the scope of ASTM E1527-21 in connection with this ESA.

C. Proposed Project Actions

The proposed scope of work recommends implementation of the following proposed project actions associated with the subject property:

- Extend Runway 13/31 by 1,600 feet.
- Relocate Runway 13/31 northeast to increase separation distance from the terminal and apron areas.
- Acquisition of 150-160 acres with 43 acres being developable space.

Appendix C illustrates areas of proposed project activities.

D. Significant Assumptions

No significant assumptions were made.

E. Data Gaps

No major data gaps were identified.

F. Limitations and Exceptions

This Phase I ESA was conducted using ASTM E1527-21. The findings of this report are applicable, and representative of conditions encountered at the property on the date of this assessment and may not represent conditions at a later date.

The review of public records was limited to that information that was available to Mead & Hunt at the time this report was prepared. Interviews with local and state government authorities were limited to those people that Mead & Hunt was able to contact during the preparation of this report. Information was derived from *reasonably ascertainable* and *practically reviewable* sources in compliance with Mead & Hunt's understanding of the standards set forth by ASTM E1527-21.

One limitation for this ESA exists. None of the hangars on site were available for access. Therefore, contents of hangars are unknown.

G. Special Terms and Conditions

This Phase I ESA was conducted in accordance with Task Order #3 to the Master Services Agreement with the City of Casselton, ND, dated July 5, 2023.

H. User Reliance

The resulting report is provided for the sole use of the Airport and its assignees. Use of this report by any third parties will be at such party's sole risk except when granted under written permission by Mead & Hunt. Any such authorized use or reliance by third parties will be subject to the same work authorization under which the work was conducted for the Airport.

Additional party's use and reliance on the report will be subject to the same rights, obligations, and limitations imposed on the Casselton Regional Airport Authority by our Work Authorization. However, the total liability of Mead & Hunt to all parties of the Phase I ESA shall be limited to the remedies and amounts as provided in the Work Authorization as a single contract. The additional party's use and reliance on the report shall signify the additional party's agreement to be bound by the proposal and

contract that make up the Work Authorization between Mead & Hunt and the Casselton Regional Airport Authority.

According to standards set forth by ASTM 1527-21, components of the Phase I ESA will expire 180 days from the date of completion of that component and may therefore require updating if the date of property acquisition exceeds this time period. The dates of completion for pertinent components are as follows:

<u>Component</u>	<u>Date of Completion</u>
Site Reconnaissance	November 6, 2023
Environmental Database Search	October & December 2023

2. Physical Setting

This section summarizes the physical environment in which the Airport operates that may be useful in determining potential RECs or the potential hazard posed by identified RECs.

A. Location

Casselton Robert Miller Regional Airport, Federal Aviation Administration identifier 5N8, is located approximately two miles south of Casselton, ND and twenty miles west of Fargo, ND. The Airport is roughly bounded by ND 18 to the northwest, Airport Road to the southwest and is between 38th St SE and 39th St SE.

B. Current Ownership and Use of the Property

The property is currently owned and operated by the Casselton Regional Airport Authority (CRAA), which consists of the townships of Amenia, Casselton, Durbin, Empire, Everest, Harmony, and Rush River, along with the city of Casselton. The Airport has over 20 airport tenants based there ranging from recreational pilots to businesses and maintenance.

C. Site and Vicinity Description

The dominant use surrounding the Airport is agricultural, with lands in and out of cultivation. A late-nineteenth-century farmstead has been present to the northeast of the Airport since the 1940s. One access road provides entry onto the airport property. This access road is located off of ND Highway 18 at the northeast corner of the property. U.S. Interstate 94 is approximately one mile north of the Airport. Past that is the City of Casselton.

D. Descriptions of Roads, Structures, and Other Improvements on the Site

The airport features one runway (Runway 13-31) extending in a southeast-northwest orientation. Taxiways are located south of the runway in a parallel orientation. Lights and navigational aids are located along the runway.

The airport has approximately 18 structures including hangars, maintenance buildings, administrative buildings, and storage facilities. These structures are arranged in a line parallel to the runway. Additionally, there are over 20 aircraft parking areas in two separate aprons. A wind cone and segmented circle is located in between the aircraft parking aprons.

E. Topography

Portions around the Airport property are under row-crop cultivation. Undeveloped infield areas consist of grasses mown or hayed on a regular basis. The airfield is generally flat and sits at approximately 925 feet above sea level. The northwestern side is somewhat higher, gently sloping to the east and south one to two feet over the length of the runway. See **Appendix D** for a detailed topographic map.

F. Hydrogeology and Geology

Surface drainage flows generally from west to east. There are no wetlands present on the Airport property or the surrounding areas. Areas identified on the map correspond to roadside ditches and are not significant.

Geologic information shows the entire airport property within the Qcof category described as Coleharbor Formation- Offshore Sediment- Proglacial Lake Sediment.¹ The primary rock type is silt, and the secondary rock type is clay or mud.

G. Soils Data

Most of the Airport is covered by three soils: somewhat poorly drained Bearden-Kindred silt clay loam, somewhat poorly drained Kindred-Bearden silty clay loams and poorly drained Overly-Bearden silt loams. Soils present in the project area are summarized in **Table 1** and soils mapping is presented in **Appendix E**. Only one soil type has a hydric status.

Table 1. Summary of Soils Present

Map unit symbol	Map unit name	Soil Unit Component Percentage	Landform	Hydric Status
I229A	Fargo silty clay, 0 to 1 percent slopes	Fargo/Other Components 80/20	Flats on lake plains	Yes
I371A	Bearden-Kindred silty clay loams, 0 to 2 percent slopes	Bearden/Kindred/Other Components 40/35/25	Flats on lake plains	No
I373A	Kindred-Bearden silty clay loams, 0 to 2 percent slopes	Kindred/Bearden/Other Components 50/30/20	Flats on lake plains	No
I482A	Overly-Bearden silt loams, 0 to 2 percent slopes	Overly/Bearden/Other Components 45/30/25	Flats on lake plains	No

¹ Physical Setting Report. Environmental Risk Information Services (ERIS) Database Report. Order 23101200257p.

3. Site Reconnaissance

Environmental Professionals with Mead & Hunt conducted site reconnaissance on November 6, 2023, to observe the current uses of the site, adjoining properties, and properties in the surrounding area, as well as the hydraulic and topographic conditions of the site and the surrounding area. Photographs were taken of various portions of the subject site to document existing conditions. See **Appendix F**.

A. Methodology and Limiting Conditions

The property was observed by driving around the perimeter and by systematically traversing the project area to provide an overlapping field of view where accessible.

A vehicular tour of the area was made to confirm the nearby land use. The tour involved viewing nearby properties from publicly accessible roadways. Observation was limited to areas visible in the line of sight from the subject property or public roadways. Mead & Hunt did not enter adjacent properties.

Access to hangars was not provided. Therefore, contents of all hangars on the Airport property are currently unknown.

B. Perimeter Observations

Land south and east of the runway is primarily agricultural land with 156th Avenue SE running north to south and 39th Street SE running east to west. Both roads exist within the proposed subject property. A farmstead northeast of the airport was observed from 156th Avenue SE. Two silos and a farm building were evident along with a residence. The Red River Valley and Western Railroad forms the southern/western boundary of Airport and the follows the layout of the airport, running in a northwest to southeast orientation. No commercial or other residential land uses exist within one-half mile of the airport property.

No evidence of underground storage tanks (USTs), aboveground storage tanks (ASTs), stained soils, stressed vegetation, landfilling, or foul odors were noted. No pits were identified on the property or immediate vicinity. No monitoring wells were found on the property. No railroad ties or other discarded items were visible along the railroad property adjacent to the Airport.

C. On-Site Observations

On-site observations revealed one active fuel location: a 50' by 40' fueling area on the taxiway with two ASTs in fair condition. One AST appears to be active, and in use and contain aviation fuel (Avgas). Total and current capacity is unknown. While secondary containment is not present, the tank is bordered by concrete bollards. The second AST at this location is smaller. It is unknown if this tank is in use. The capacity and contents are unknown, no secondary containment exists, and this tank is outside any crash barriers (concrete bollards).

Additionally, ASTs were evident in three other locations: four (4) grouped together in between two hangars and one (1) next to the hangars south of the wind cone. Of the four ASTs groups together, one appears to be in use as the filling hose runs from the AST into the hangar. Other than that, capacity,

Section 3
Site Reconnaissance

contents and current use of these two sets of ASTs is unknown. See **Appendix H for location and K for photos.**

While these AST clusters exist, they are located away from any areas of potential expansion which are currently in agricultural fields away from the existing airport infrastructure.

4. Records Review

A. Historical Use Development of the Airport and Periphery

The Casselton Regional Airport Authority was established in 1976. The Airport land was acquired, and the airport constructed, in the mid 1980's. The Airport was officially opened to the public in 1986. Runway 13/31 was constructed in 1987 and lengthened in 1994.

Previous use of the land was agricultural production. The surrounding land has been agricultural since before the 1930's and remains in crop rotation agricultural production today. The Airport land is approximately 110 acres with an additional 14 acres in aviation easements. The Airport authority leases airport land for aeronautical and agricultural uses. Aeronautical uses include hangars for aircraft storage and generally have a 20-year terms. Agricultural uses are for agricultural production and carry a 5-year term.

Today, the Airport provides a multitude of services/functions and supports a number of businesses. These include aircraft refinishing, aircraft storage, fuel services, major airframe and power plant repairs, aircraft sales, agriculture operations, and flight instruction.²

(1) Aerial Photographs

Aerial photography taken between 1941 and 2021 was reviewed to observe previous conditions and development of the property, as well as immediately adjacent properties. Images are included in **Appendix G**.

The earliest photograph of the area, taken in 1941, shows the general vicinity of the Airport mostly under cultivation. Two, or one combined, farmsteads are northeast of the present-day Airport property.

By 1962, North Dakota Highway 18 is constructed in its current day configuration along the northwest edge of what would become the Airport property.

By 1985, the Airports general outline becomes evident in a similar but less developed configuration than exists today. The 1985 aerial appears to be at the very early stages of airport construction. In the 1990 aerial, the runway and taxiway hard surfaces are present along with several buildings.

Between 1990 and 1997, the runway and taxiways are extended to the southeast in the current day configuration and more hangar buildings are constructed.

From 2003 to 2009, the Airport and surrounding uses do not change. Between 2010 and 2012, additional hangars are constructed to the southeast of the other structures. From 2012 to 2021, the Airport saw minor development of supporting structures, but stays generally unchanged.

² Airport Master Plan, Casselton Robert Miller Regional Airport (5N8). February 2020

A farmstead is evident just northeast of the subject property in the 1941 aerial. It remains throughout the timeframe covered by the aerials and is evident in the 2021 one. The pattern of agricultural use, both row cropping and forage production, in areas around the airfield and within Airport property, observed since the airport's construction, continues too today.

(2) Land Use

Historical and existing land use is primarily agricultural. Little to no other types of land use development (e.g., commercial, industrial, office) have been observed around the immediate vicinity of the airport.

The surrounding land uses around the subject property have been agricultural. The area has not seen much development other than the construction of ND 18 prior to 1962 to the west.

B. Standard Environmental Record Sources

Previously reported hazardous materials sites were identified based on a review of federal and state agency records and online databases for potential hazardous materials contamination sites in accordance with ASTM standards. The following databases were searched:

- North Dakota Department of Environmental Quality
 - Leaking Underground Storage Tank Registry
 - [Leaking Underground Storage Tanks - North Dakota Department of Environmental Quality](#)
- Combined Environmental Reporting Information System (CERIS-ND)
 - [Combined Environmental Reporting Information System - North Dakota \(nd.gov\)](#)
- Envirofacts, U.S. Environmental Protection Agency
 - [Multisystem Search | Envirofacts | US EPA](#)

The following findings are based on data obtained from regulatory database searches and reviews of other available information. Federal and state database searches returned 2 records associated with parcels located on or within one-quarter mile of the Airport. Records for sites within one-quarter mile include registered ASTs and hazardous waste generators. A list of sites identified in database reports and/or site reconnaissance is included in **Table 2**. A corresponding map is included in **Appendix H**. Available site reports are provided in **Appendix I**. A third-party ESIS Report is included in **Appendix J**.

Table 2. Sites Located Within the Vicinity of Proposed Project Activities

Site Number	Type	Status	Search Radius	Reference	Database or Site Reconnaissance
1	Facility Registry Service/Facility Index	Active	On project property	Casselton Airport	Database
1A	Above Ground Storage Tank	Active	On project property	Fuel area	Reconnaissance
1B	Above Ground Storage Tank	Unknown	On project property	ASTs between Hangars	Reconnaissance
1C	Above Ground Storage Tank	Unknown	On project property	AST near shed	Reconnaissance
1D	Above Ground Storage Tank	Unknown	On project property	AST in grass	Reconnaissance
2	Very Small Quantity Generator	Active	On project property	Custom Aircraft Refinishing Inc.	Database

5. Interviews

A. Interview with Owner

An interview was not conducted with the Airport maintenance manager. Due to the lack of findings adjacent to the proposed work and the land being primarily agricultural, additional information from the owner was not deemed necessary. A User Questionnaire was provided to the Airport maintenance manager but was not returned.

B. Interview with Occupants

No interviews were conducted with the airport occupants as no record results were determined to warrant additional information from occupants.

C. Interview with Local Government Officials

No individual local government officials were interviewed as no record results were determined to warrant additional information from local officials.

D. Interviews with Others

No additional interviews were conducted.

6. Evaluation

A. Findings

The Phase I ESA was completed in accordance with ASTM International Standard E1527-21, Standard Practice for *Environmental Site Assessments: Phase I Environmental Site Assessment Process* and USEPA AAI regulations under 40 CFR Part 312. This report summarizes the results of Mead & Hunt's investigation of the subject property and database review. No other environmental issues are assessed beyond the scope of ASTM E1527-21 in connection with this Phase I ESA.

Findings are listed below by site. Each site listed is an individual database record. Multiple records may exist for one location, for instance the general Airport property. However, each site was evaluated individually.

Site 1, Casselton Regional Airport, is listed in the EPA's Facility Registry Service/Facility Index (FINDS/FRS). This database identifies facilities subject to environmental regulations. While this site is regulated, it has no records of previously reported hazardous materials incidents. No evidence of contamination from the site was identified.

Site 1A, fuel area at Casselton Regional Airport, was discovered during site reconnaissance. This site is located more than 300 feet from the area of proposed activities. Two (2) Above Ground Storage Tanks (ASTs) of unknown capacity were photographed. One AST contains Avgas, aviation fuel and appears to be in use. Both ASTs appeared to be in fair condition. No evidence of leaks or cracks were found. Neither tank appeared to have any form of secondary containment. No evidence of contamination from the site was identified.

Site 1B, ASTs between aircraft hangars, was discovered during site reconnaissance. This site is located more than 300 feet from the area of proposed activities. Four (4) ASTs of unknown contents and capacity were photographed. The two largest tanks, furthest south, appeared in good condition. The middle smaller tank appeared in fair condition, however, multiple dents to the end of the tank were evident. The tank located against the hangar wall appeared to be in use. It appeared in fair condition with evident rust along all sides. None of the four ASTs had any form of secondary containment. No evidence of contamination from the site was identified.

Site 1C, AST next to small shed, was discovered during site reconnaissance. This site is located more than 300 feet from the area of proposed activities. One AST of unknown contents and capacity was photographed. The AST appeared to be in good condition. This AST did not have any form of secondary containment. No evidence of contamination from the site was identified.

Site 1D, AST in grass by trailer and aqua cistern, was discovered during site reconnaissance. This site is located more than 300 feet from the area of proposed activities. One AST of unknown contents and capacity was photographed. It appeared to be in fair condition but had evident rusting on the top and bottom. It could not be determined if this AST was in use. The AST did not have any form of secondary containment. No evidence of contamination from the site was identified.

Site 2, Custom Aircraft Refinishing Inc., was discovered during database searches. The USEPA Envirofacts database lists this business as a very small quantity generator and shows it located at Casselton Regional Airport. Further investigation identified the business's location to be in the fourth hangar from the south at the airport. This site is not located within 300 ft of proposed project activities. Wastes generated include ignitable waste, methyl ethyl ketone, and spent nonhalogenated solvents. While this site is regulated, it has no records of previously reported hazardous materials incidents. No evidence of contamination from the site was identified.

7. Conclusions

Mead & Hunt has performed a Phase I ESA of the Casselton Regional Airport property located in Casselton, North Dakota, in conformance with our understanding of the scope and limitations of ASTM Practice E1527-21. Any limitations, exceptions to, or deletions from, this practice are described in Section 1 of this report.

This assessment has revealed no evidence of recognized environmental conditions, controlled recognized environmental conditions, or significant data gaps in connection with the subject property.

8. Statement of Environmental Professional

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in §312.10 of 40 CFR § 312 and I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the proposed action. I have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Signed,

Michael C. Lewis

Michael Lewis

A handwritten signature in black ink, appearing to read "Mark S. Sauer". The signature is written in a cursive style with a long horizontal flourish extending to the right.

Mark S. Sauer, AICP



Michael Lewis, AICP CANDIDATE
URBAN PLANNER

Areas of Expertise

- GIS
- Comprehensive Plans
- Data management

Education

- Master, Urban Planning, University of Wisconsin – Milwaukee, 2021
- BS, Environmental Geography, University of Wisconsin – Eau Claire, 2019

Registration/Certifications

- American Institute of Certified Planners (AICP), Candidate

Memberships

- American Planning Association (APA)

LinkedIn URL

- www.linkedin.com/in/michael-lewis-1a4a71160

Michael is an urban planner with hands-on experience at Public Works and Metropolitan Sewerage agencies. He has four years of experience with Geographical Information Systems (GIS) using ERSI and online programs, including ArcMap, ArcGIS Online, and QGIS. Additionally, he has two years of experience with long-range planning documents such as Comprehensive Plans, zoning codes, ordinances, and permits. He has served in public-facing roles, including handling public feedback and educating homeowners on topics surrounding green infrastructure. He is also experienced with data analysis, pedestrian and bicycle planning, and land use planning.

Phase 1 Environmental Site Assessment Experience

Michael has completed abbreviated Phase 1 Environmental Site Assessments for the following projects:

Transportation

WisDOT NW Region

- Kington Road Bridge Replacement, Nelson Creek, Clark County, WI.
- Lien Lane Bridge Replacement, North Fork Beaver Creek, Trempealeau County, WI

WisDOT NC Region

- County U Reconstruction, Bangor to Rockland, La Crosse County, WI.

Other Planning and Environmental Experience

NEPA

WisDOT NE Region

- IH-43 Resurfacing, Green Bay to Manitowoc, Brown County, WI
- Lawrence Drive Reconstruction, Fortune Avenue to Scheuring Road, Brown County, WI
- Rest Area Reconstruction, Rest Areas 51 & 52, Manitowoc County, WI

WisDOT NC Region

- Kington Road Bridge Replacement, Nelson Creek, Clark County, WI.
- WIS 29, Chippewa Falls to Abbotsford, Clark County, WI
- Lien Lane Bridge Replacement, North Fork Beaver Creek, Trempealeau County, WI
- WIS 95, County A to 250' W of WIS 93, Trempealeau County, WI

WisDOT SW Region

- CTH U, Bangor to Rockland, La Crosse County, WI
- WIS 162, Stoddard to Chaseburg, Vernon County, WI



Mark Sauer, AICP
PLANNER/TRANSPORTATION PLANNER

Areas of Expertise

- Comprehensive Smart Growth planning
- Park planning and design
- Land and site planning
- Urban design
- Land division and zoning change procedures
- Zoning code and policy analysis
- Presentation graphics
- Public involvement/charettes
- NEPA documentation
- Environmental Permitting
- Transportation corridor studies
- Grant applications
- Phase 1 Environmental Site Assessments
- Section 4(f)

Education

- Master of Urban Planning, University of Wisconsin – Milwaukee (2011)
- Bachelor of Urban Planning, University of Cincinnati (2008)

Registration

- American Institute of Certified Planners (AICP) (2015)

Training

- Phase I & Phase II Environmental Site Assessment Processes, ASTM International (2017)

Mark Sauer has worked in diverse professional workplaces designing and leading projects in the A&E industry both domestically and internationally for over ten years. He has expertise in comprehensive and sub-area planning, site design, urban and rural transportation studies, land division and zoning procedures, public involvement, and presentation visualizations. He has prepared numerous environmental documents including Categorical Exclusions, Environmental Reports, Environmental Assessments, and Indirect and Cumulative Effects Analyses. He has specialized training in Section 4(f) and Phase 1 Environmental Site Assessments.

Mark has completed Phase 1 Environmental Site Assessments for the following projects:

Transportation

WisDOT NC Region

- County K Bridge Replacement, Wisconsin River, Vilas County, WI
- County GG Bridge Replacement, Cranberry Creek, Wood County, WI
- County J Bridge Replacement, Little Wolf River, Waupaca County, WI

WisDOT NE Region

- WIS 32 Resurfacing, Main Avenue & Reid Street, City of De Pere, Brown County
- Rest Areas 51 (Maribel) and 52 (Denmark) Reconstruction, I-43, Manitowoc County, WI
- Lawrence Drive Reconstruction, Fortune Avenue – Scheuring Road, City of De Pere, WI
- I-43 Resurfacing, WIS 172 – Atkinson Dr., Brown County, WI
- North Union Road Bridge Replacement, Branch River, Manitowoc County, WI
- Old Hwy 47 Bridge Replacement, Toad Creek, Outagamie County, WI
- Maloney Road Bridge Replacement, Branch Apple Creek, Outagamie County, WI
- WIS 57 Resurfacing, WIS 42 – Summit Road, Door County, WI
- County BB Bridge Replacement, Little River, Marinette County, WI
- South Union Road Bridge Replacement, Point Creek, Manitowoc County, WI
- WIS 67 Resurfacing/ Reconstruction, West County Line – East County Line, Fond du Lac County, WI

WisDOT NW Region

- Joe Coulee & Hagestad Road Bridge Replacements, North Fork Beaver Creek, Trempealeau County, WI
- County O Reconstruction, Gibson St. – WIS 13, Taylor County, WI
- I-94 Bridge Replacements, Rush River, St. Croix County, WI
- WIS 88 Reconstruction, County U – WIS 37, Buffalo County, WI
- Owen Avenue Bridge Replacement, Rock Creek, Clark County, WI

- WIS 29 Pavement Replacement, Koser Avenue to County D, Clark County, WI

WisDOT SW Region

- WIS 95 Resurfacing, Main Street. County A to 250' West of WIS 93, City of Arcadia, Trempealeau County
- WIS 16 Reconstruction, Wisconsin Dells – Portage, Columbia Co., WI
- WIS 16/60 Urban Reconstruction, US 151 – River Road, Columbia County, WI
- WIS 16 Intersection Improvements, La Crosse & Onalaska County, WI
- WIS 173 Reconstruction, WIS 21 – County Line, Monroe & Juneau County, WI
- WIS 162 Resurfacing & Bridge Replacements, Coon Valley – Bangor, Vernon & La Crosse County, WI
- WIS 162 Resurfacing & Bridge Replacements, Village Park Drive to Depot Street, Vernon County, WI
- WIS 16 Pavement Replacement, County L / Business 26 to E. Main Street, Dodge & Jefferson County, WI
- WIS 19 Pavement Replacement, Crawford River Bridge to Gypsy Road, Dodge & Jefferson County, WI

Transportation Other

- Dunbar Toll Bridge Replacement, Kanawha County, WV

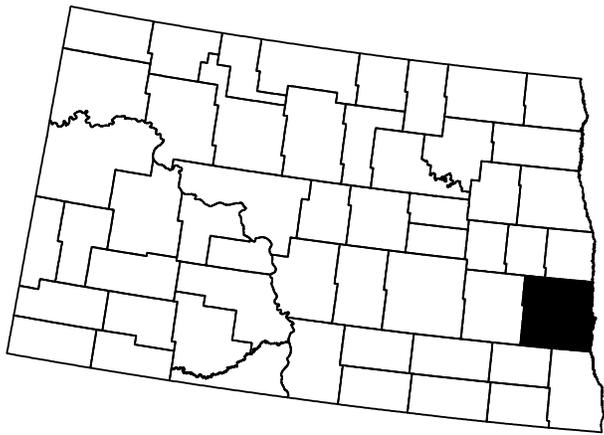
Aviation

- 21D, Lake Elmo Airport, Runway 14/32 Relocation and Associated Improvements, Washington County, MN (142 acres)
- AGS, Augusta Regional Airport, Aviation Improvements, Richmond County, GA
- BIV, West Michigan Regional Airport, Land Release, City of Holland, Ottawa and Allegan County, MI (32 acres)
- BTL, W.K. Kellogg Airport, Mass Grading, City of Battle Creek, Calhoun County, MI (120 acres)
- CMX, Houghton County Memorial Airport, Runway 25 Obstructions Clearing, Houghton, MI (20 acres)
- OCQ, J. Douglas Bake Municipal Airport, Land Acquisition, Oconto County, WI (140 acres)
- OGM, Ontonagon County Airport Schuster Field, Runway 17 Obstructions Clearing, Ontonagon County, MI (4 acres)
- MSN, Dane County Regional Airport, East Side Hangar Development, City of Madison, Dane County, WI (50 acres)

Land Development

- Chr. Hansen Land Acquisition, Wausau, WI (18 acres)
- Oakwood Village University Woods Campus, Madison, WI (35 acres)
- Oakwood Village Prairie Ridge Campus, Madison, WI (18 acres)
- Historic Iowa State Penitentiary, Land Release, Fort Madison, IA (55 acres)
- Parcel SC-194, Residential Development, Town of Scott, Brown County, WI (40 acres)
- Salm Partners, LLC, Commercial Development, Village of Denmark, Brown County, WI (26 acres)

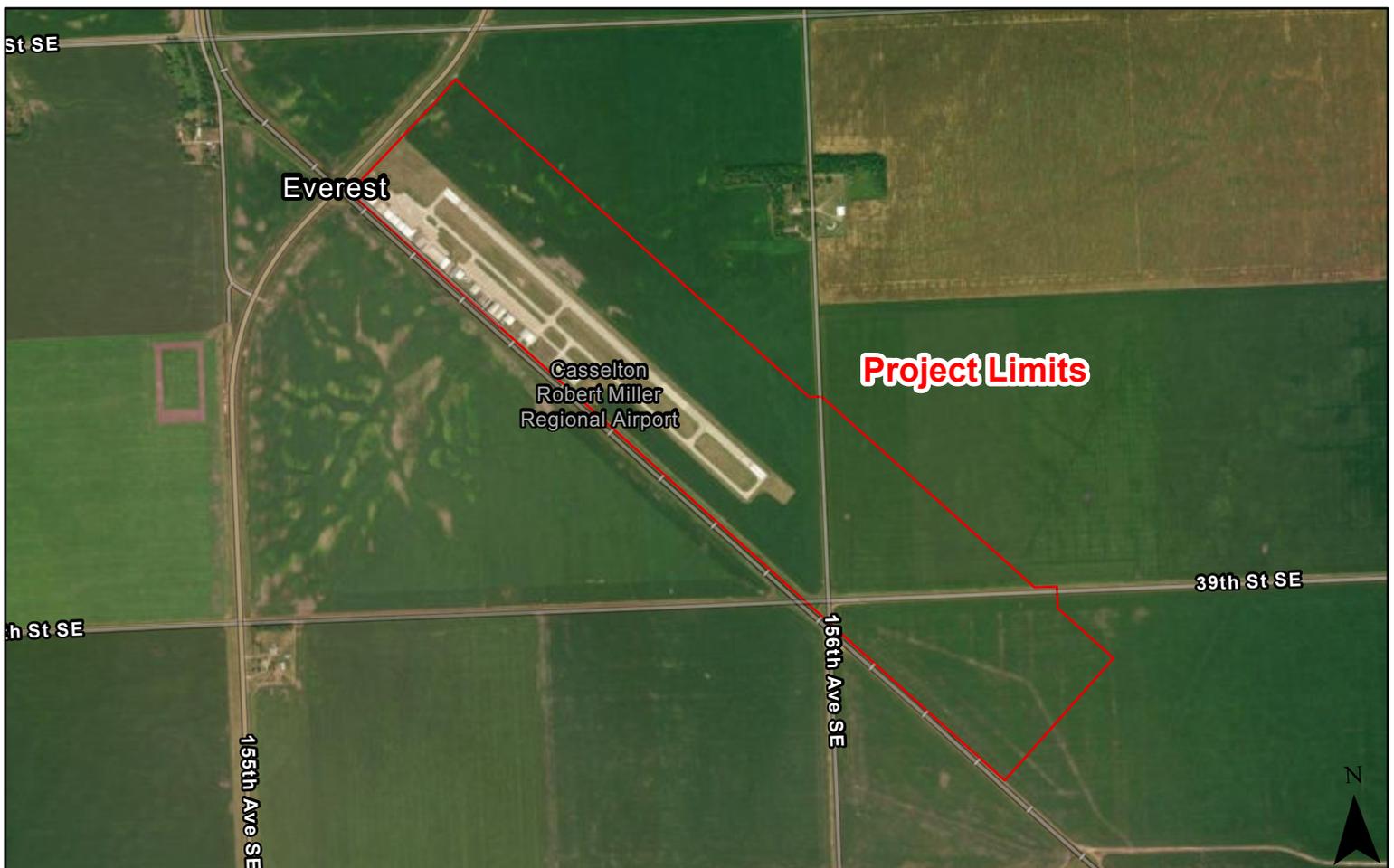
Appendix A. Project Location Map



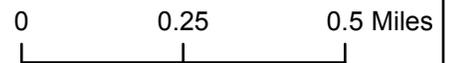
Cass County, North Dakota



Project Vicinity



Project Location

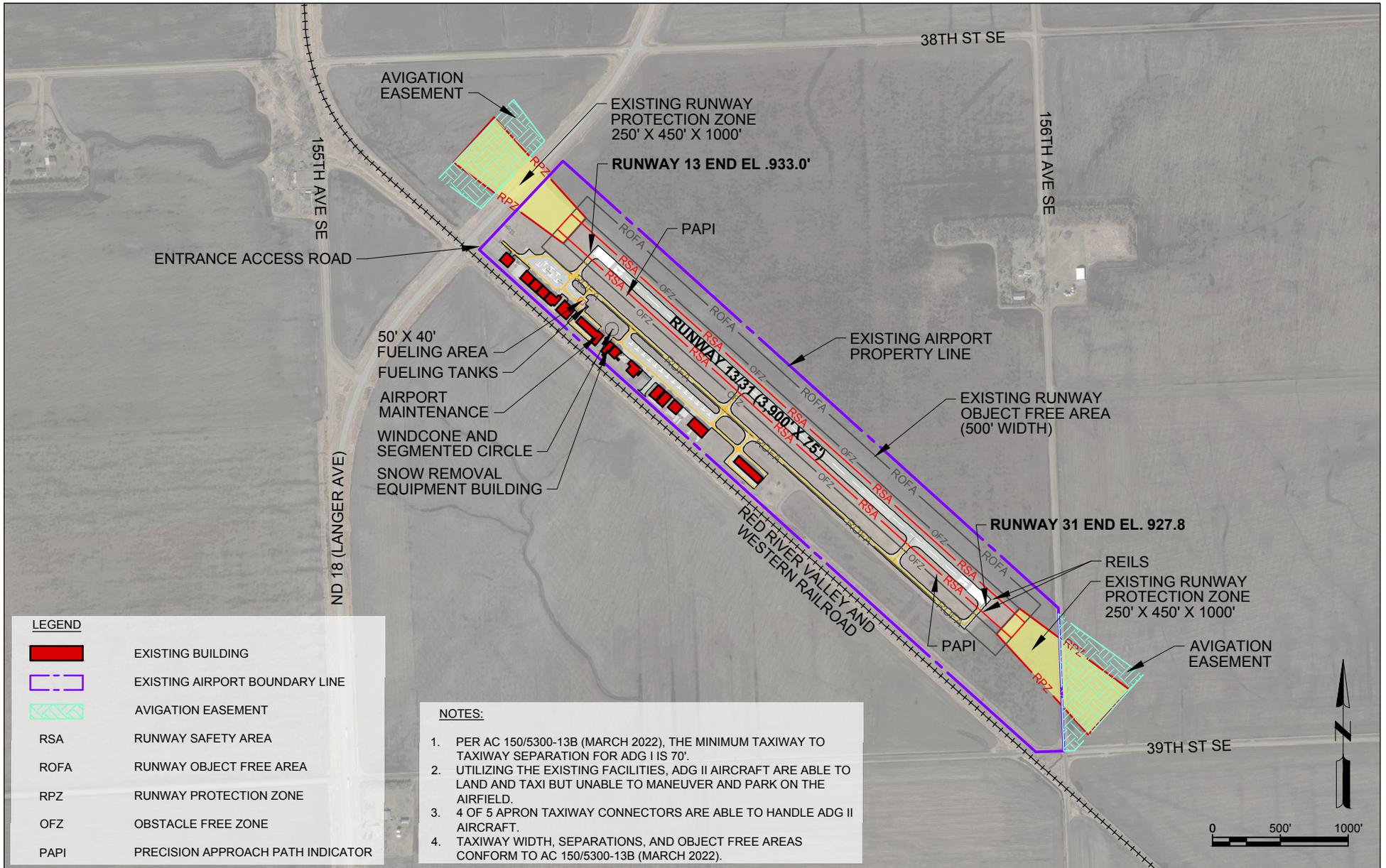


Casselton Robert Miller Regional Airport Runway Relocation & Extension Casselton, Cass County, North Dakota

12/22/2023

County of Cass, ND, State of North
Dakota, Esri, HERE, Garmin,

Appendix B. Airport Structures Location Map



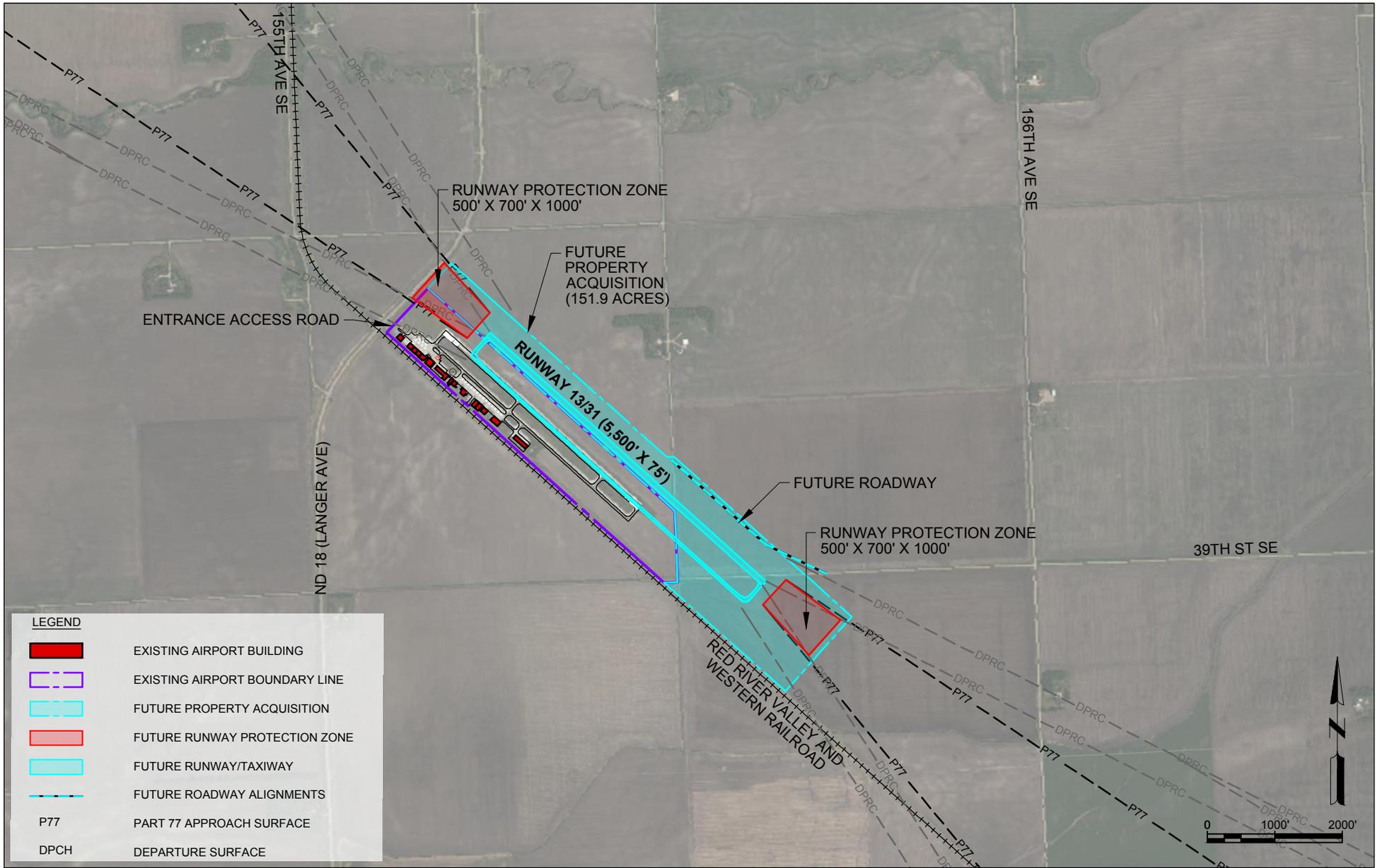
CASSELTON ROBERT MILLER
REGIONAL AIRPORT
Casselton, North Dakota

EXISTING AIRPORT FACILITIES



4266800-220791.02
NOVEMBER 2023

Appendix C. Area of Proposed Project Activities



CASSELTON ROBERT MILLER
REGIONAL AIRPORT
Casselton, North Dakota

4266800-220791.02
NOVEMBER 2023

RELOCATE RUNWAY 13/31
(400 FEET RW/TW SEPARATION)



Appendix D. Topography Map



Property Information

Order Number: 23101200257p
 Date Completed: October 12, 2023
 Project Number: 4545300-230576.01, Ph.3
 Project Property: Casselton Robert Miller Regional Airport
 Casselton Robert Miller Regional Airport Mapleton ND
 Coordinates:
 Latitude: 46.85140164
 Longitude: -97.20328953
 UTM Northing: 5190218.25014 Meters
 UTM Easting: 636972.782507 Meters
 UTM Zone: UTM Zone 14T
 Elevation: 924.35 ft
 Slope Direction: SSW

Topographic Information.....2
 Hydrologic Information.....12
 Geologic Information.....20
 Soil Information.....25
 Wells and Additional Sources.....35
 Summary.....40
 Detail Report.....42
 Radon Information.....46
 Appendix.....47
 Liability Notice.....49

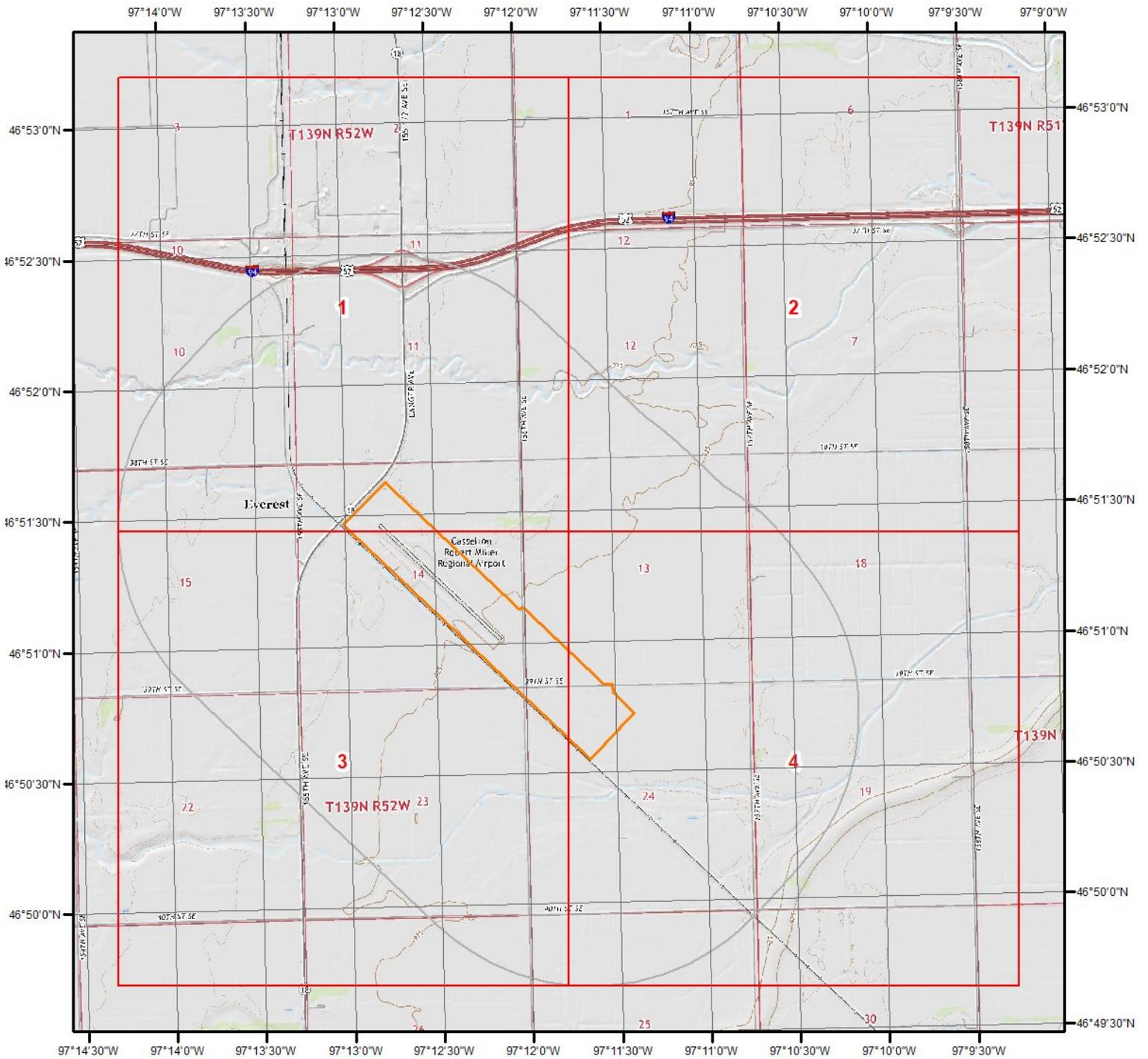
The ERIS **Physical Setting Report - PSR** provides comprehensive information about the physical setting around a site and includes a complete overview of topography and surface topology, in addition to hydrologic, geologic and soil characteristics. The location and detailed attributes of oil and gas wells, water wells, public water systems and radon are also included for review.

The compilation of both physical characteristics of a site and additional attribute data is useful in assessing the impact of migration of contaminants and subsequent impact on soils and groundwater.

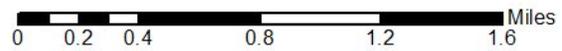
Disclaimer

This Report does not provide a full environmental evaluation for the site or adjacent properties. Please see the terms and disclaimer at the end of the Report for greater detail.

Topographic Information



Current USGS Topo (2020)

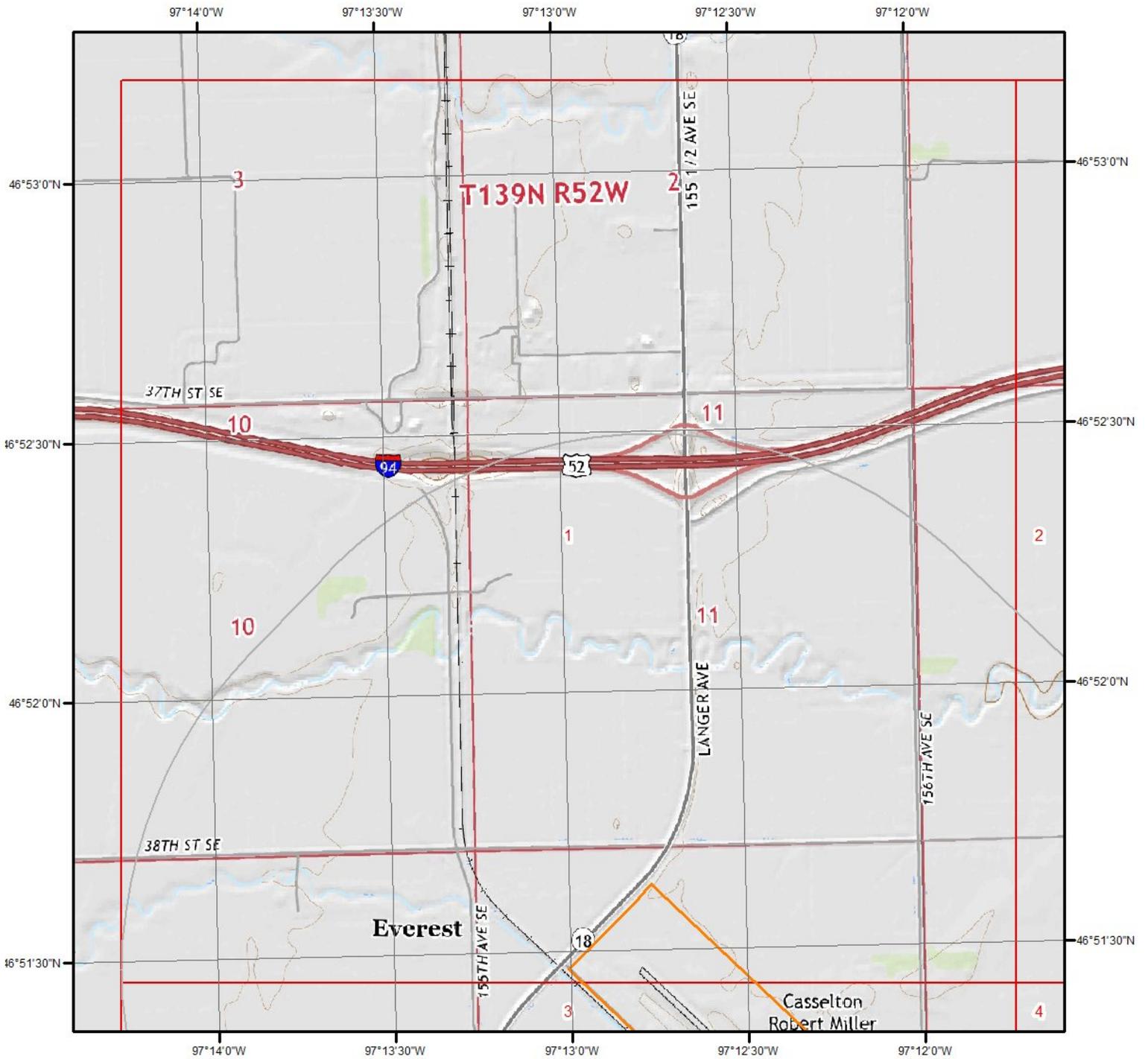


Quadrangle(s): Chaffee,ND; Casselton,ND; Casselton SE,ND; Durbin,ND; Mapleton,ND; Wheatland,ND

Source: USGS 7.5 Minute Topographic Map



Topographic Information



Current USGS Topo - Page 1

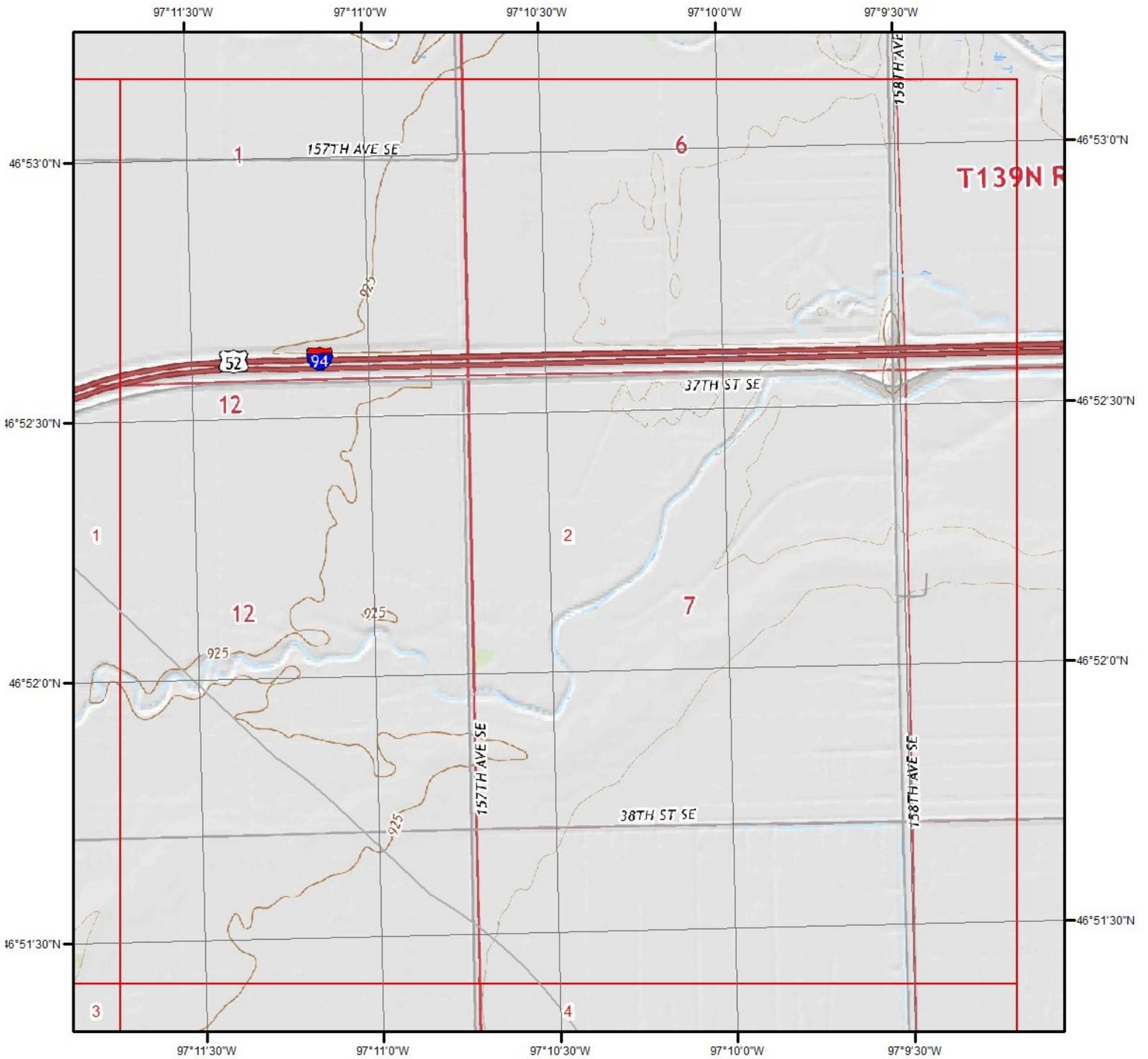


Quadrangle(s): Casselton,ND; Durbin,ND

Source: USGS 7.5 Minute Topographic Map



Topographic Information



Current USGS Topo - Page 2

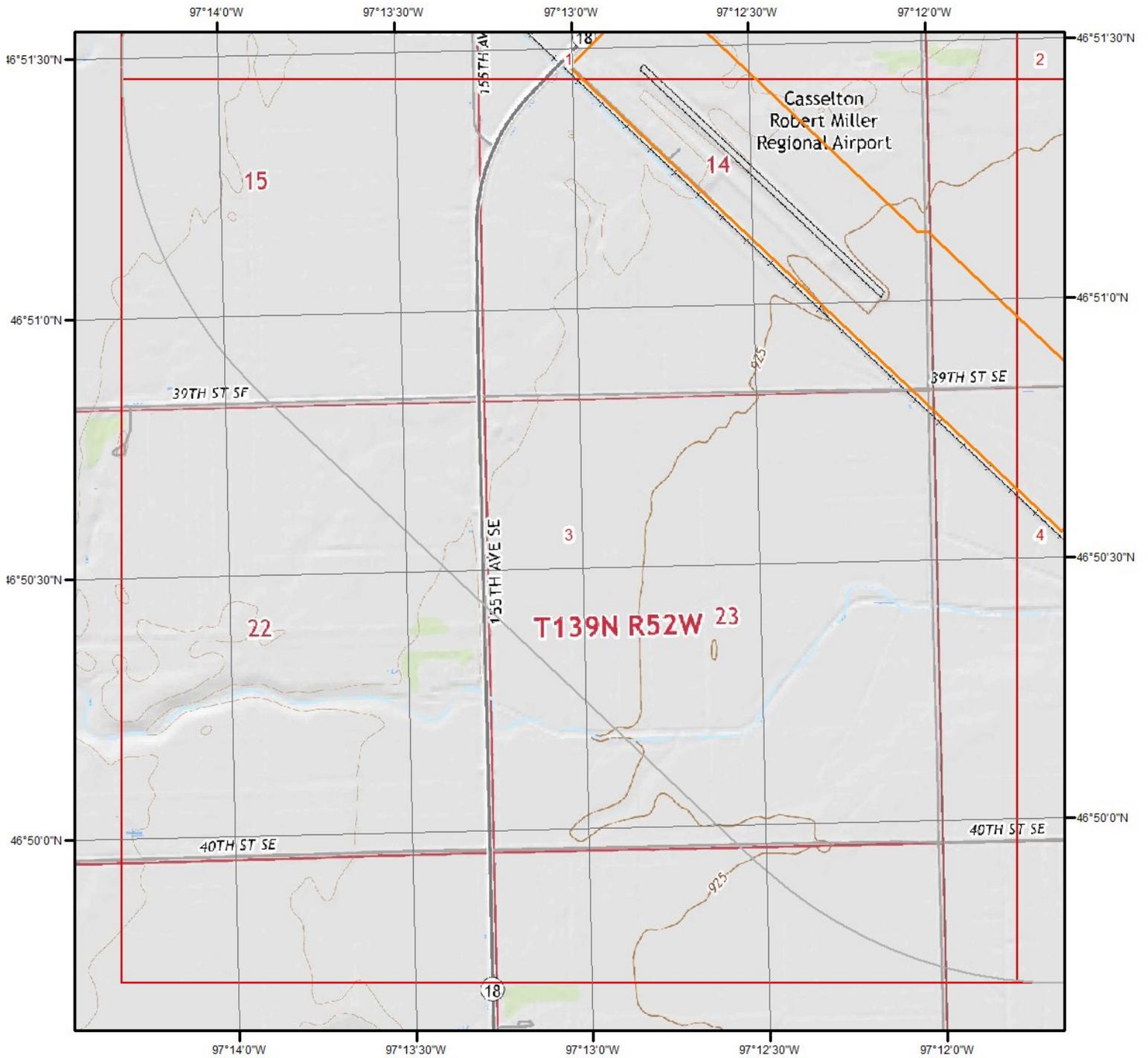


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Source: USGS 7.5 Minute Topographic Map



Topographic Information



Current USGS Topo - Page 3

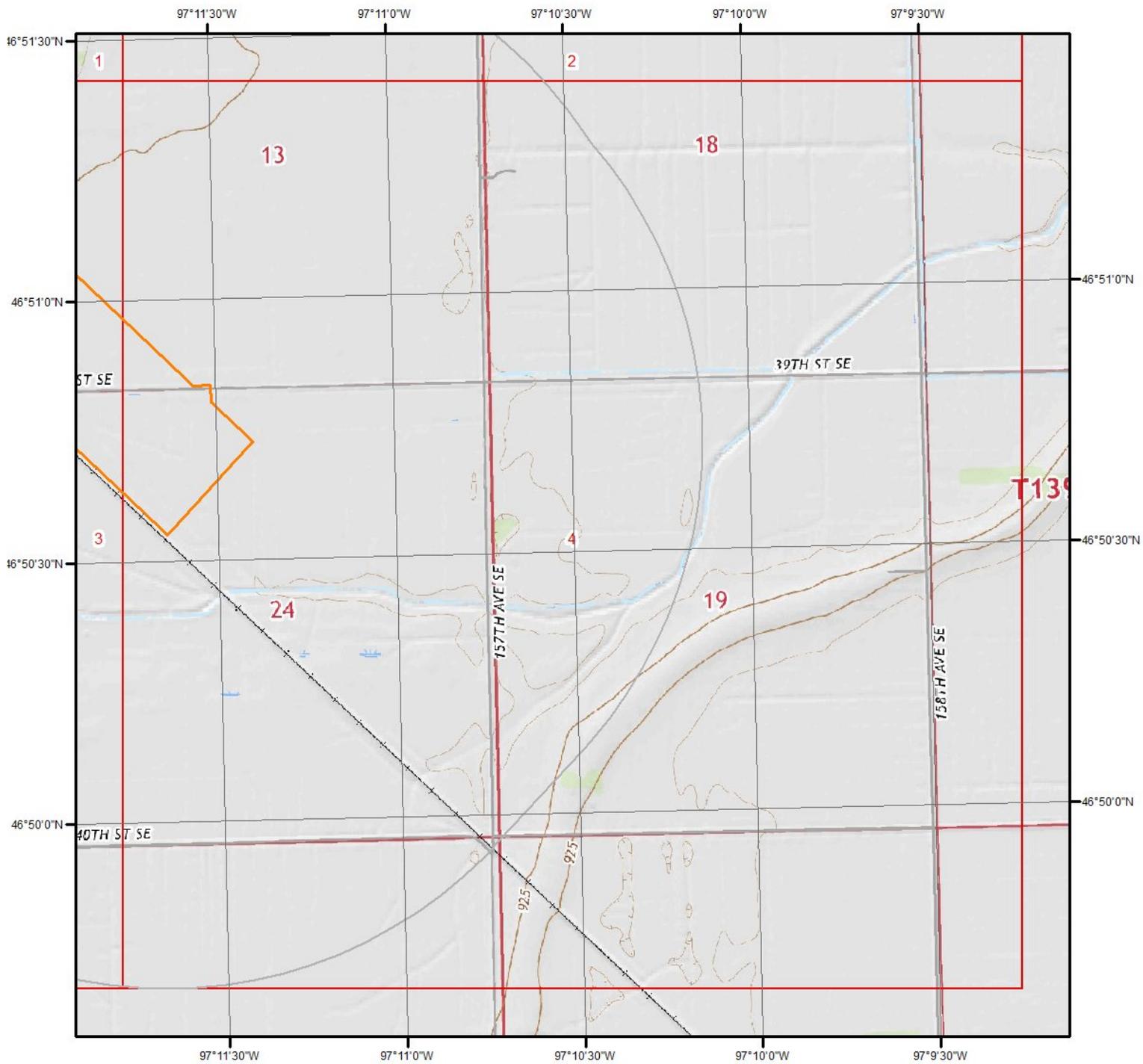


Quadrangle(s): Durbin,ND

Source: USGS 7.5 Minute Topographic Map



Topographic Information



Current USGS Topo - Page 4



Quadrangle(s): Durbin,ND

Source: USGS 7.5 Minute Topographic Map

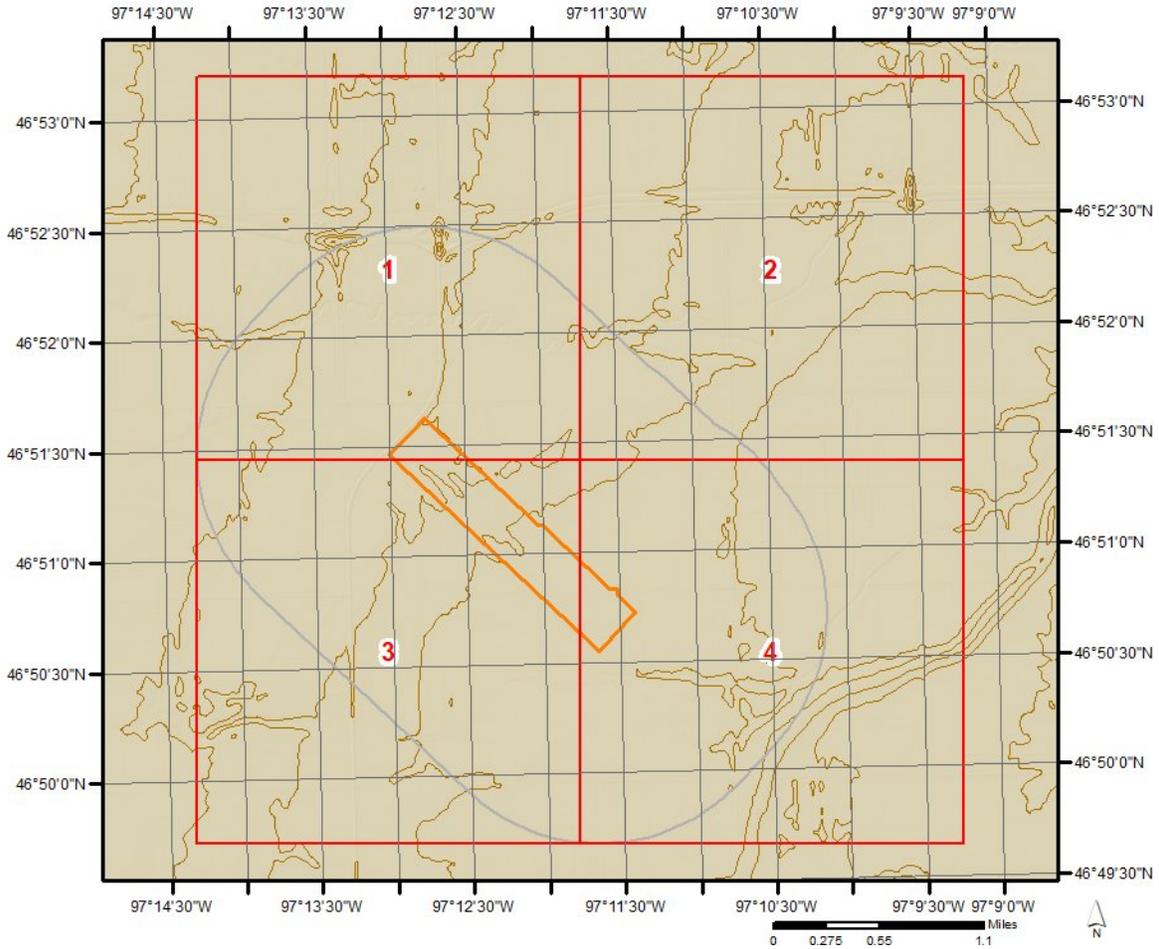


Topographic Information

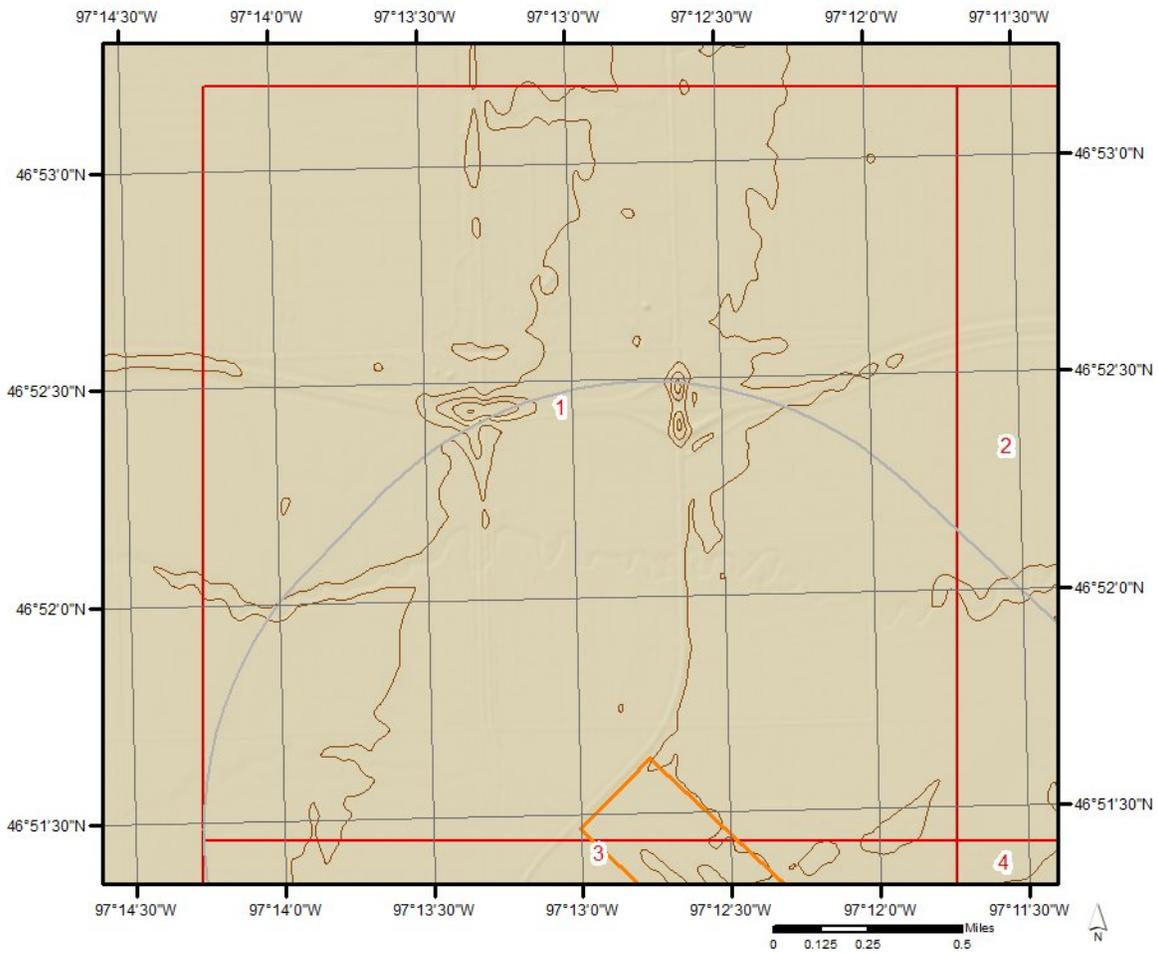
The previous topographic map(s) are created by seamlessly merging and cutting current USGS topographic data. Below are shaded relief map(s), derived from USGS elevation data to show surrounding topography in further detail.

Topographic information at project property:

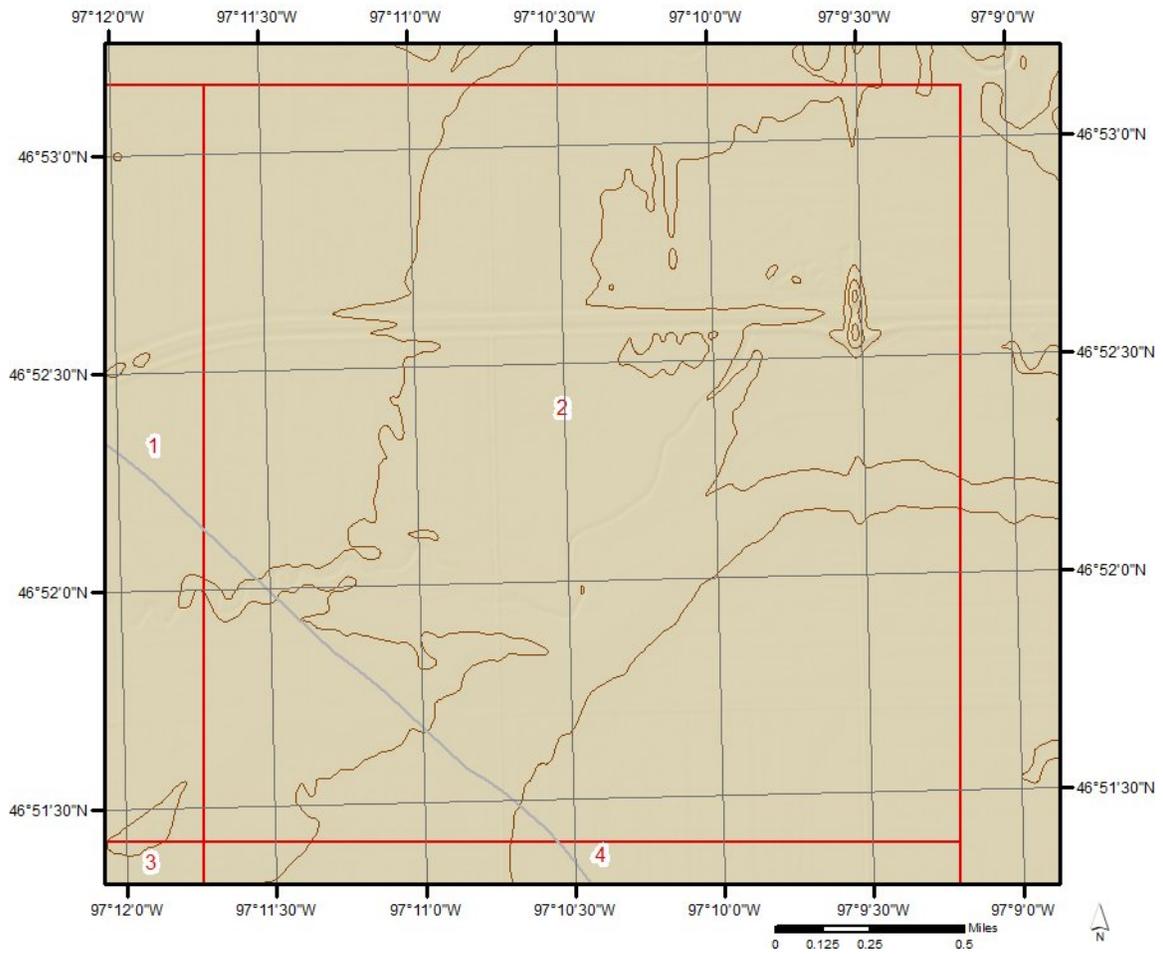
Elevation: 924.35 ft
Slope Direction: SSW



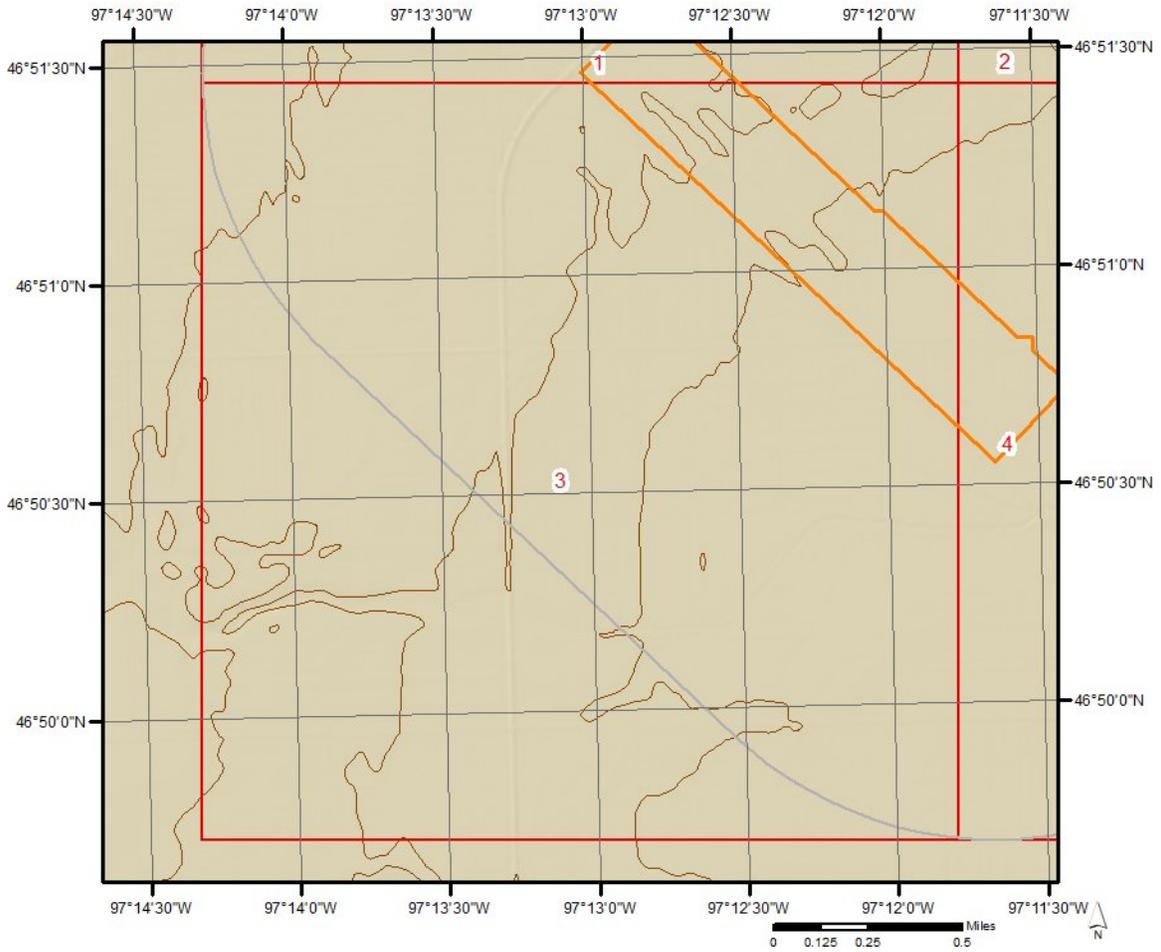
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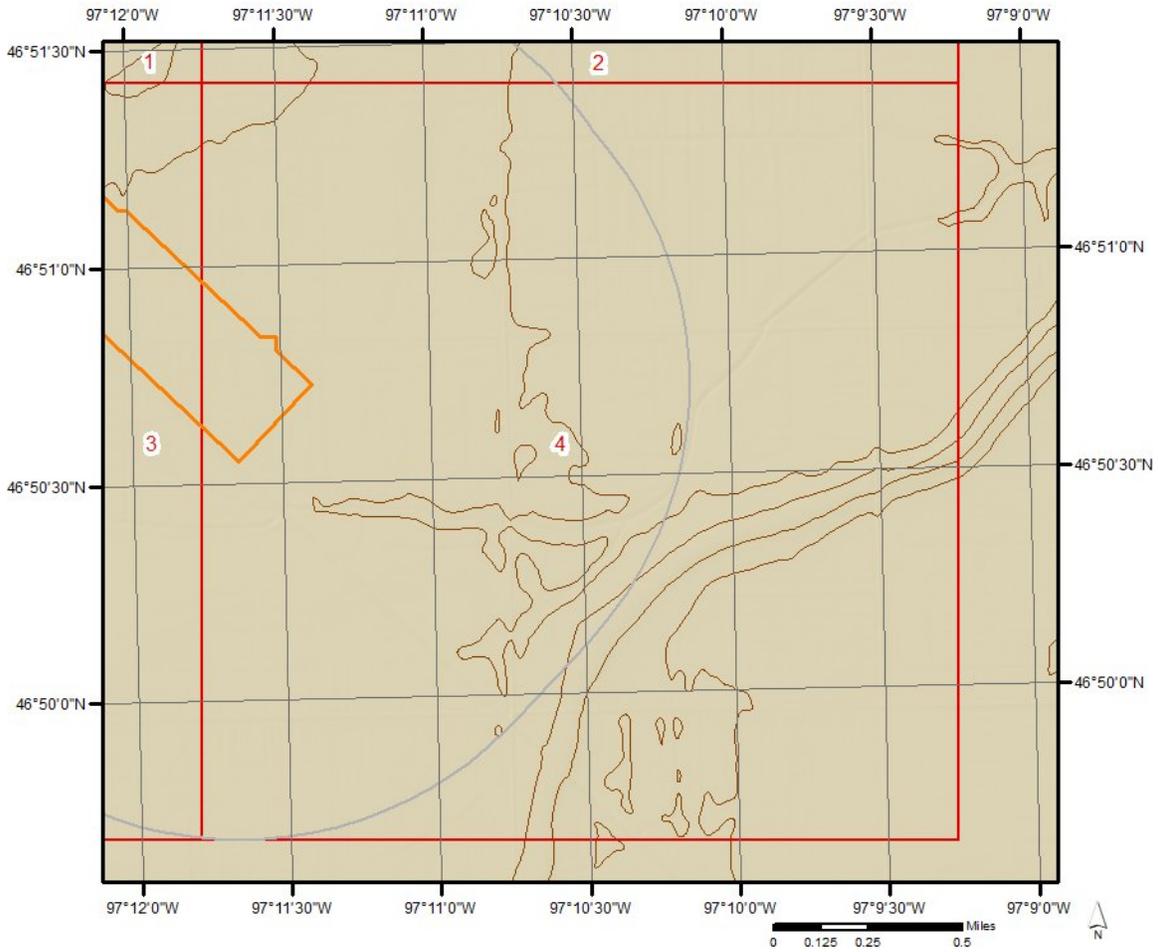
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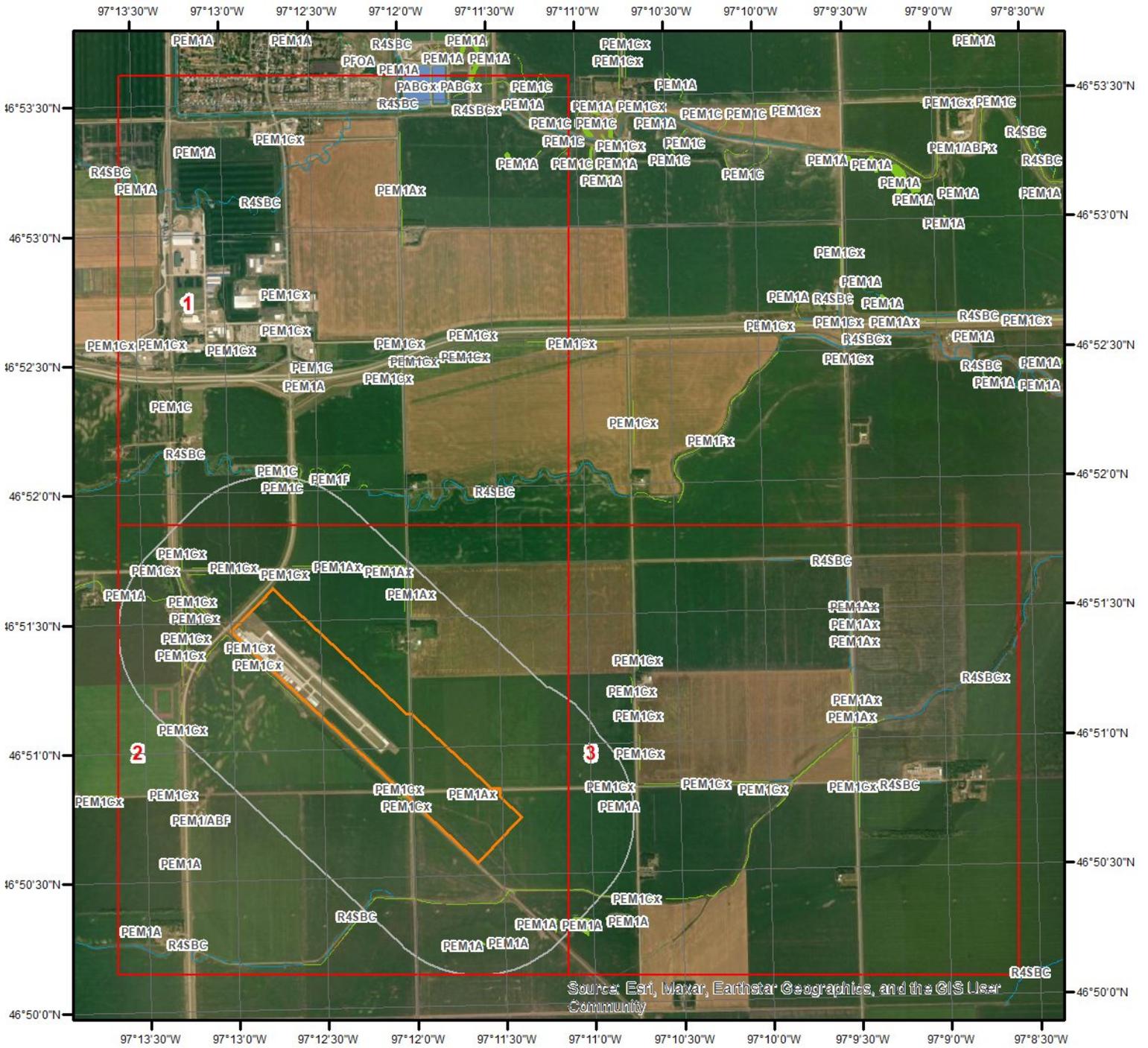
Topographic Information



Topographic Information



Hydrologic Information



Wetland



This map shows wetland existence using data from US Fish & Wildlife. Data coverage is shown to the right. Gray indicates no data available in the area.

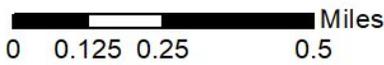
- | | |
|---|---|
| Estuarine and Marine Deepwater | Freshwater Pond |
| Estuarine and Marine Wetland | Lake |
| Freshwater Emergent Wetland | Other |
| Freshwater Forested/Shrub Wetland | Riverine |



Hydrologic Information

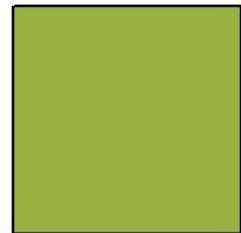


Wetland Type - Page 1

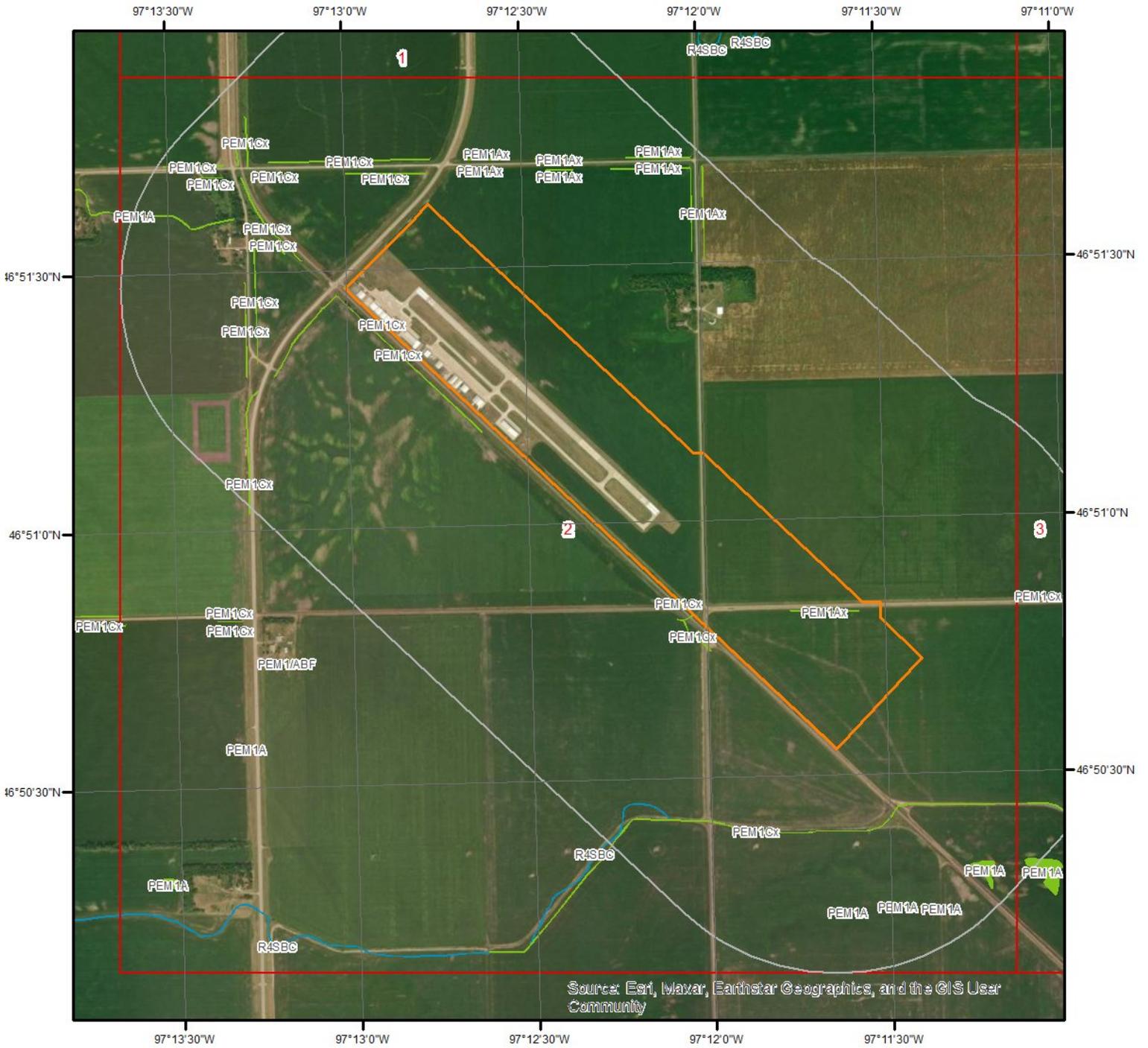


This map shows wetland existence using data from US Fish & Wildlife. Data coverage is shown to the right. Gray indicates no data available in the area.

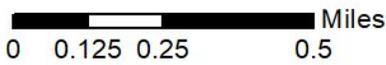
- | | |
|---|---|
|  Estuarine and Marine Deepwater |  Freshwater Pond |
|  Estuarine and Marine Wetland |  Lake |
|  Freshwater Emergent Wetland |  Other |
|  Freshwater Forested/Shrub Wetland |  Riverine |



Hydrologic Information

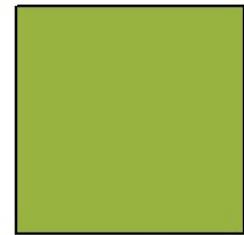


Wetland Type - Page 2



This map shows wetland existence using data from US Fish & Wildlife. Data coverage is shown to the right. Gray indicates no data available in the area.

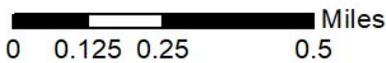
- | | |
|---|---|
|  Estuarine and Marine Deepwater |  Freshwater Pond |
|  Estuarine and Marine Wetland |  Lake |
|  Freshwater Emergent Wetland |  Other |
|  Freshwater Forested/Shrub Wetland |  Riverine |



Hydrologic Information



Wetland Type - Page 3



This map shows wetland existence using data from US Fish & Wildlife. Data coverage is shown to the right. Gray indicates no data available in the area.

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



Hydrologic Information



Flood Hazard Zones

This map shows FEMA flood hazard zones based on FEMA's National Flood Hazard Layer. FIRM Panels are overlaid. An absent FIRM panel represents no data available.

- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Future Conditions 1% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee
- Area with Risk Due to Levee
- Open Water

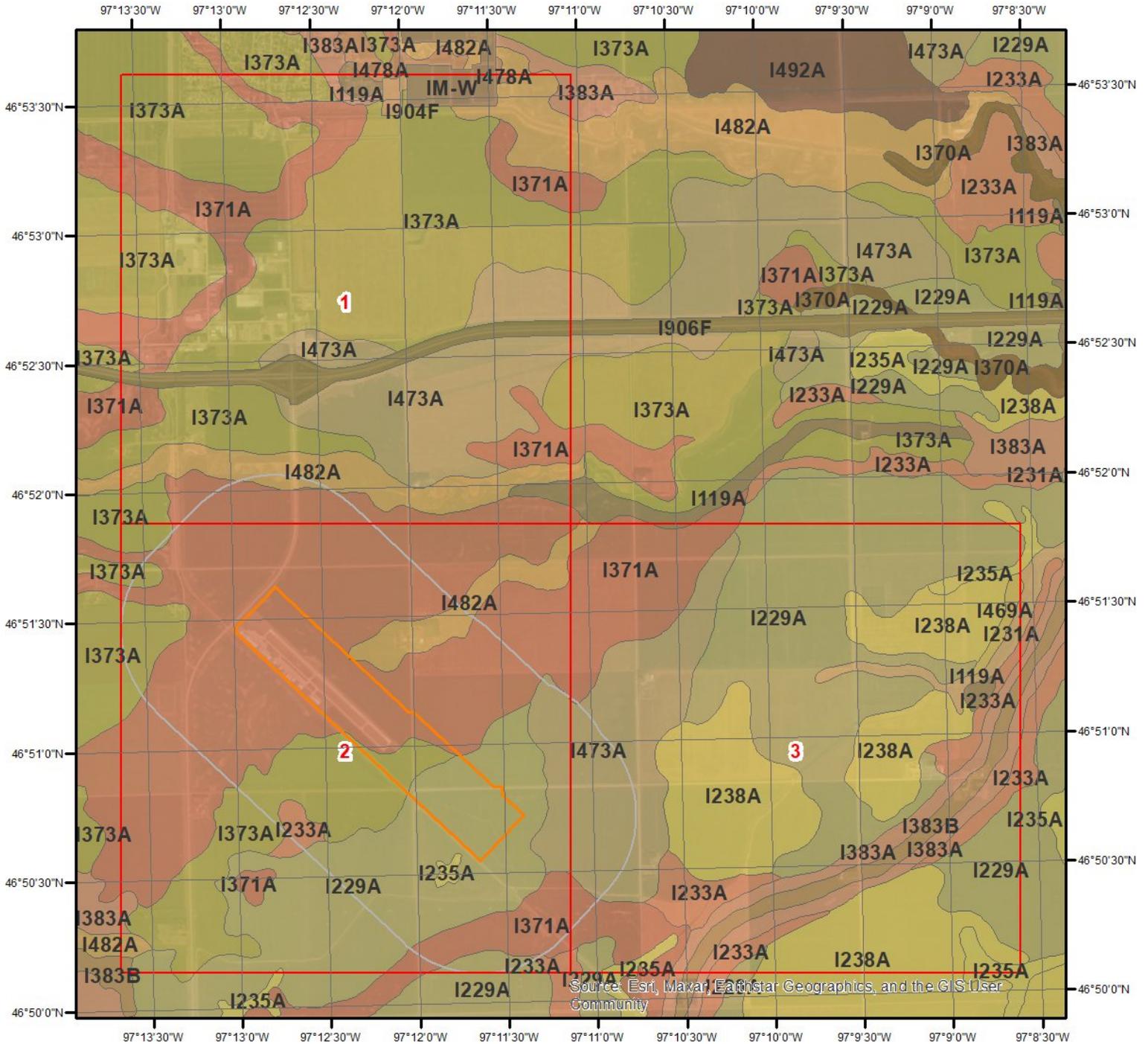


Quadrangle(s): Chaffee,ND; Casselton,ND;
Casselton SE,ND; Durbin,ND;

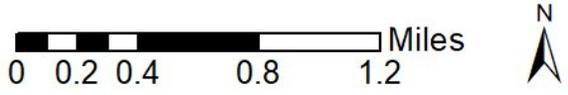


Appendix E. ERIS Soils Data

Soil Information



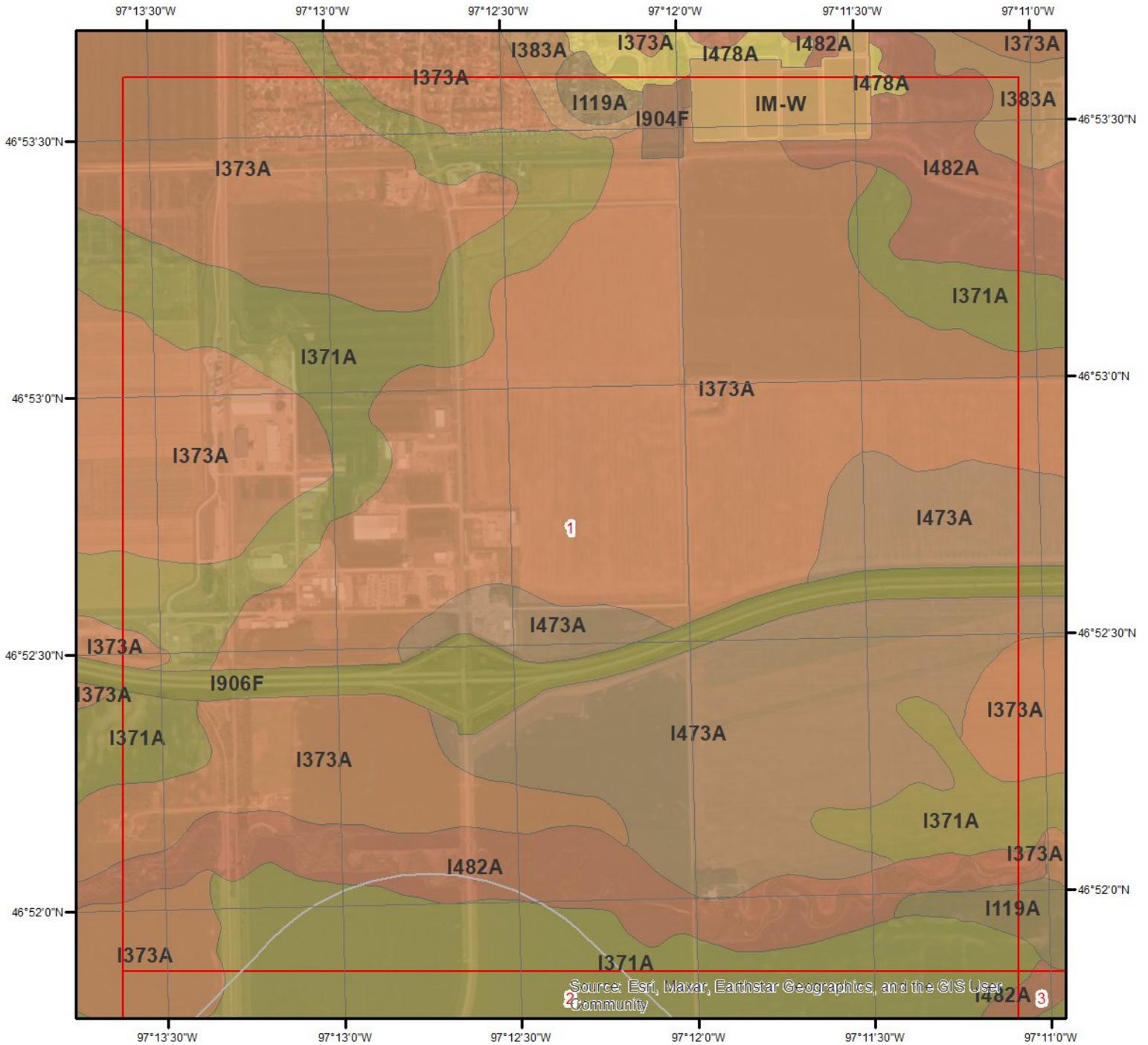
SSURGO Soils



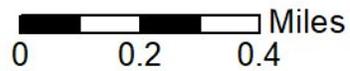
This maps shows SSURGO soil units around the target property. Please refer to the report for detailed soil descriptions.



Soil Information



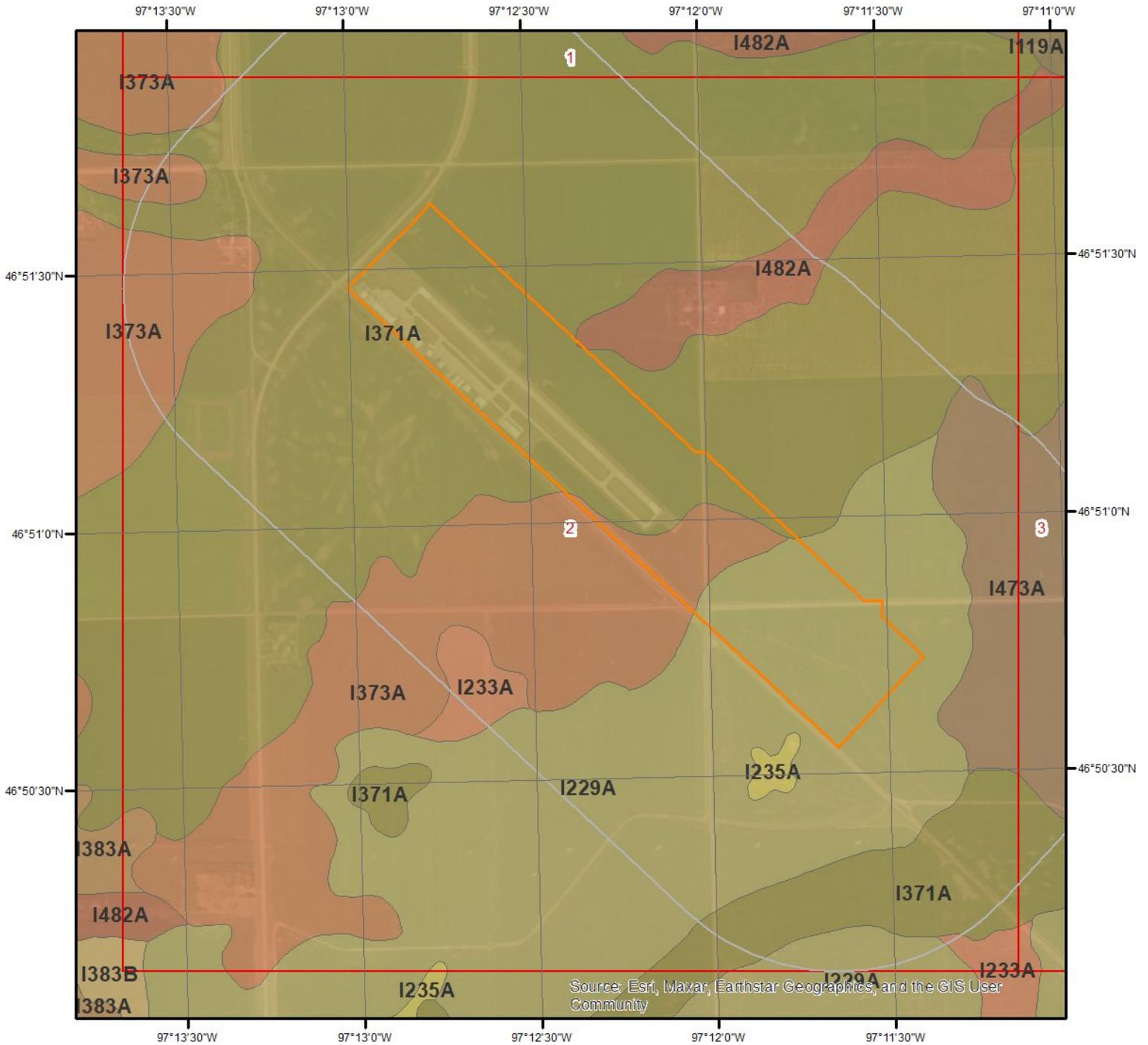
SSURGO Soils - Page 1



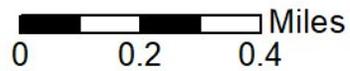
This maps shows SSURGO soil units around the target property. Please refer to the report for detailed soil descriptions.



Soil Information



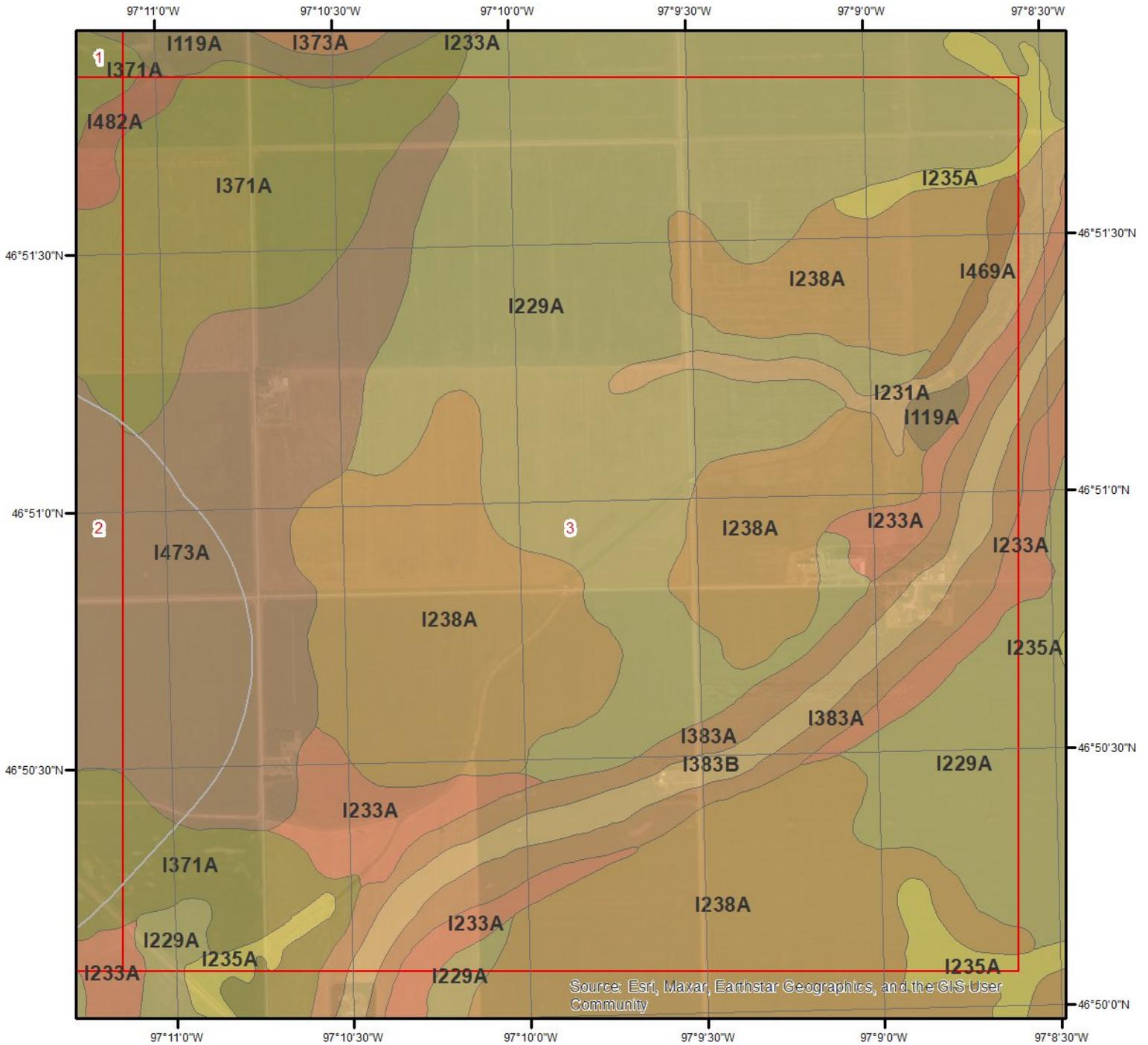
SSURGO Soils - Page 2



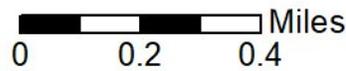
This maps shows SSURGO soil units around the target property. Please refer to the report for detailed soil descriptions.



Soil Information



SSURGO Soils - Page 3



This maps shows SSURGO soil units around the target property. Please refer to the report for detailed soil descriptions.



Soil Information

The previous page shows a soil map using SSURGO data from USDA Natural Resources Conservation Service. Detailed information about each unit is provided below.

Map Unit I229A (28.44%)

Map Unit Name:	Fargo silty clay, 0 to 1 percent slopes
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	23cm
Drainage Class - Dominant:	Poorly drained
Hydrologic Group - Dominant:	C/D - These soils have moderately high runoff potential when drained and high runoff potential when undrained.

Major components are printed below

Fargo(80%)

horizon Ap(0cm to 20cm)	Silty clay
horizon A(20cm to 33cm)	Silty clay
horizon Bss(33cm to 53cm)	Silty clay
horizon Bkg(53cm to 81cm)	Silty clay
horizon Cg(81cm to 200cm)	Silty clay

Component Description:

Minor map unit components are excluded from this report.

Map Unit: I229A - Fargo silty clay, 0 to 1 percent slopes

Component: Fargo (80%)

The Fargo component makes up 80 percent of the map unit. Slopes are 0 to 1 percent. This component is on flats on lake plains. The parent material consists of clayey glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is high. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 9 inches during March, April, May. Organic matter content in the surface horizon is about 5 percent. This component is in the R056XY084ND Clayey ecological site. Nonirrigated land capability classification is 2w. This soil meets hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 20 percent. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Hegne (10%)

Generated brief soil descriptions are created for major soil components. The Hegne soil is a minor component.

Component: Dovray (7%)

Generated brief soil descriptions are created for major soil components. The Dovray soil is a minor component.

Component: Ryan (3%)

Generated brief soil descriptions are created for major soil components. The Ryan soil is a minor component.

Map Unit I233A (1.33%)

Map Unit Name:	Fargo silty clay loam, 0 to 1 percent slopes
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	23cm
Drainage Class - Dominant:	Poorly drained
Hydrologic Group - Dominant:	C/D - These soils have moderately high runoff potential when drained and high runoff potential when undrained.

Major components are printed below

Fargo(85%)

horizon Ap(0cm to 20cm)	Silty clay loam
-------------------------	-----------------

Soil Information

horizon A(20cm to 33cm)	Silty clay
horizon Bss(33cm to 53cm)	Silty clay
horizon Bkg(53cm to 81cm)	Silty clay
horizon Cg(81cm to 200cm)	Silty clay

Component Description:

Minor map unit components are excluded from this report.

Map Unit: I233A - Fargo silty clay loam, 0 to 1 percent slopes

Component: Fargo (85%)

The Fargo component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on flats on lake plains. The parent material consists of clayey glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is high. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 9 inches during March, April, May. Organic matter content in the surface horizon is about 5 percent. This component is in the R056XY084ND Clayey ecological site. Nonirrigated land capability classification is 2w. This soil meets hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 20 percent. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Hegne (7%)

Generated brief soil descriptions are created for major soil components. The Hegne soil is a minor component.

Component: Enloe (6%)

Generated brief soil descriptions are created for major soil components. The Enloe soil is a minor component.

Component: Colvin (2%)

Generated brief soil descriptions are created for major soil components. The Colvin soil is a minor component.

Map Unit I235A (0.1%)

Map Unit Name:	Fargo silty clay, depressional, 0 to 1 percent slopes
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	15cm
Drainage Class - Dominant:	Poorly drained
Hydrologic Group - Dominant:	C/D - These soils have moderately high runoff potential when drained and high runoff potential when undrained.

Major components are printed below

Fargo(75%)

horizon Ap(0cm to 20cm)	Silty clay
horizon A(20cm to 33cm)	Silty clay
horizon Bss(33cm to 53cm)	Silty clay
horizon Bkg(53cm to 81cm)	Silty clay
horizon Cg(81cm to 200cm)	Silty clay

Component Description:

Minor map unit components are excluded from this report.

Map Unit: I235A - Fargo silty clay, depressional, 0 to 1 percent slopes

Component: Fargo (75%)

The Fargo, depressional component makes up 75 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on lake plains. The parent material consists of clayey glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is very high. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 6 inches during April, May, June. Organic matter content in the surface horizon is about 6 percent. This component is in the R056XY084ND Clayey ecological site. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 20 percent. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of

Soil Information

the soil surface.

Component: Hegne (10%)

Generated brief soil descriptions are created for major soil components. The Hegne soil is a minor component.

Component: Fargo (10%)

Generated brief soil descriptions are created for major soil components. The Fargo soil is a minor component.

Component: Dovray (3%)

Generated brief soil descriptions are created for major soil components. The Dovray soil is a minor component.

Component: Ryan (2%)

Generated brief soil descriptions are created for major soil components. The Ryan soil is a minor component.

Map Unit I371A (31.95%)

Map Unit Name:	Bearden-Kindred silty clay loams, 0 to 2 percent slopes
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	76cm
Drainage Class - Dominant:	Somewhat poorly drained
Hydrologic Group - Dominant:	C - Soils in this group have moderately high runoff potential when thoroughly wet. Water transmission through the soil is somewhat restricted.

Major components are printed below

Bearden(40%)

horizon Ap(0cm to 21cm)	Silty clay loam
horizon ABk(21cm to 39cm)	Silty clay loam
horizon Bk(39cm to 99cm)	Silty clay loam
horizon C(99cm to 200cm)	Silty clay loam

Kindred(35%)

horizon Ap(0cm to 33cm)	Silty clay loam
horizon Bw(33cm to 56cm)	Silty clay loam
horizon Bk(56cm to 107cm)	Silty clay loam
horizon C(107cm to 200cm)	Silty clay loam

Component Description:

Minor map unit components are excluded from this report.

Map Unit: I371A - Bearden-Kindred silty clay loams, 0 to 2 percent slopes

Component: Bearden (40%)

The Bearden component makes up 40 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on lake plains. The parent material consists of fine-silty glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 30 inches during April, May, June. Organic matter content in the surface horizon is about 5 percent. This component is in the R056XY087ND Limy Subirrigated ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 25 percent. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Kindred (35%)

The Kindred component makes up 35 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on lake plains. The parent material consists of fine-silty glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 30 inches during April, May, June. Organic matter content in the surface horizon is about 5 percent. This component is in the R056XY095ND Subirrigated ecological site. Nonirrigated land capability classification is 2c. This soil does not meet hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 10 percent.

Soil Information

Component: Bearden (10%)

Generated brief soil descriptions are created for major soil components. The Bearden, slightly saline soil is a minor component.

Component: Perella (10%)

Generated brief soil descriptions are created for major soil components. The Perella soil is a minor component.

Component: Colvin (5%)

Generated brief soil descriptions are created for major soil components. The Colvin soil is a minor component.

Map Unit I373A (26.16%)

Map Unit Name:	Kindred-Bearden silty clay loams, 0 to 2 percent slopes
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	76cm
Drainage Class - Dominant:	Somewhat poorly drained
Hydrologic Group - Dominant:	C - Soils in this group have moderately high runoff potential when thoroughly wet. Water transmission through the soil is somewhat restricted.

Major components are printed below

Kindred(50%)

horizon Ap(0cm to 33cm)	Silty clay loam
horizon Bw(33cm to 56cm)	Silty clay loam
horizon Bk(56cm to 107cm)	Silty clay loam
horizon C(107cm to 200cm)	Silty clay loam

Bearden(30%)

horizon Ap(0cm to 21cm)	Silty clay loam
horizon ABk(21cm to 39cm)	Silty clay loam
horizon Bk(39cm to 99cm)	Silty clay loam
horizon C(99cm to 200cm)	Silty clay loam

Component Description:

Minor map unit components are excluded from this report.

Map Unit: I373A - Kindred-Bearden silty clay loams, 0 to 2 percent slopes

Component: Kindred (50%)

The Kindred component makes up 50 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on lake plains. The parent material consists of fine-silty glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 30 inches during April, May, June. Organic matter content in the surface horizon is about 5 percent. This component is in the R056XY095ND Subirrigated ecological site. Nonirrigated land capability classification is 2c. This soil does not meet hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 10 percent.

Component: Bearden (30%)

The Bearden component makes up 30 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on lake plains. The parent material consists of fine-silty glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 30 inches during April, May, June. Organic matter content in the surface horizon is about 5 percent. This component is in the R056XY087ND Limy Subirrigated ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 25 percent. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Perella (10%)

Generated brief soil descriptions are created for major soil components. The Perella soil is a minor component.

Component: Bearden (5%)

Generated brief soil descriptions are created for major soil components. The Bearden, moderately saline soil is a minor component.

Soil Information

Component: Overly (5%)

Generated brief soil descriptions are created for major soil components. The Overly soil is a minor component.

Map Unit I473A (6.32%)

Map Unit Name:	Hegne-Fargo silty clay loams, 0 to 1 percent slopes
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	23cm
Drainage Class - Dominant:	Poorly drained
Hydrologic Group - Dominant:	C/D - These soils have moderately high runoff potential when drained and high runoff potential when undrained.

Major components are printed below

Hegne(50%)

horizon Ap(0cm to 20cm)	Silty clay loam
horizon Bkssg(20cm to 75cm)	Silty clay
horizon Cg(75cm to 200cm)	Silty clay

Fargo(30%)

horizon Ap(0cm to 20cm)	Silty clay loam
horizon A(20cm to 33cm)	Silty clay
horizon Bss(33cm to 53cm)	Silty clay
horizon Bkg(53cm to 81cm)	Silty clay
horizon Cg(81cm to 200cm)	Silty clay

Component Description:

Minor map unit components are excluded from this report.

Map Unit: I473A - Hegne-Fargo silty clay loams, 0 to 1 percent slopes

Component: Hegne (50%)

The Hegne component makes up 50 percent of the map unit. Slopes are 0 to 1 percent. This component is on flats on lake plains. The parent material consists of clayey glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is high. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 9 inches during March, April, May. Organic matter content in the surface horizon is about 5 percent. This component is in the R056XY084ND Clayey ecological site. Nonirrigated land capability classification is 2w. This soil meets hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 25 percent. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Fargo (30%)

The Fargo component makes up 30 percent of the map unit. Slopes are 0 to 1 percent. This component is on flats on lake plains. The parent material consists of clayey glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is high. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 9 inches during March, April, May. Organic matter content in the surface horizon is about 5 percent. This component is in the R056XY084ND Clayey ecological site. Nonirrigated land capability classification is 2w. This soil meets hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 20 percent. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Enloe (10%)

Generated brief soil descriptions are created for major soil components. The Enloe soil is a minor component.

Component: Dovray (5%)

Generated brief soil descriptions are created for major soil components. The Dovray soil is a minor component.

Component: Hegne (5%)

Generated brief soil descriptions are created for major soil components. The Hegne, moderately saline soil is a minor component.

Soil Information

Map Unit I482A (5.71%)

Map Unit Name:	Overly-Bearden silt loams, 0 to 2 percent slopes
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	76cm
Drainage Class - Dominant:	Somewhat poorly drained
Hydrologic Group - Dominant:	C - Soils in this group have moderately high runoff potential when thoroughly wet. Water transmission through the soil is somewhat restricted.

Major components are printed below

Overly(45%)

horizon Ap(0cm to 25cm)	Silt loam
horizon Bw(25cm to 43cm)	Silty clay loam
horizon Bk(43cm to 97cm)	Silty clay loam
horizon C(97cm to 200cm)	Silty clay loam

Bearden(30%)

horizon Ap(0cm to 21cm)	Silt loam
horizon ABk(21cm to 39cm)	Silt loam
horizon Bk(39cm to 99cm)	Silt loam
horizon C(99cm to 200cm)	Silt loam

Component Description:

Minor map unit components are excluded from this report.

Map Unit: I482A - Overly-Bearden silt loams, 0 to 2 percent slopes

Component: Overly (45%)

The Overly component makes up 45 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on lake plains. The parent material consists of fine-silty glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 48 inches during April, May, June. Organic matter content in the surface horizon is about 5 percent. This component is in the R056XY088ND Loamy Overflow ecological site. Nonirrigated land capability classification is 2c. This soil does not meet hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 25 percent. There are no saline horizons within 30 inches of the soil surface.

Component: Bearden (30%)

The Bearden component makes up 30 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on lake plains. The parent material consists of fine-silty glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 30 inches during April, May, June. Organic matter content in the surface horizon is about 5 percent. This component is in the R056XY087ND Limy Subirrigated ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 25 percent. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Perella (10%)

Generated brief soil descriptions are created for major soil components. The Perella soil is a minor component.

Component: Kindred (10%)

Generated brief soil descriptions are created for major soil components. The Kindred soil is a minor component.

Component: Bearden (5%)

Generated brief soil descriptions are created for major soil components. The Bearden, moderately saline soil is a minor component.

Appendix F. Photographs of On-site Structures



























Appendix G. Historic Aerials



HISTORICAL AERIALS

Project Property: Casselton Robert Miller
Regional Airport
Casselton Robert Miller Regional Airport
Mapleton ND

Project No: 4545300-230576.01, Ph.3

Requested By: Mead & Hunt, Inc.

Order No: 23101200257

Date Completed: October 16,2023

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Environmental Risk Information Services

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Date	Source	Scale	Comments
2021	MAXAR TECHNOLOGIES	1" = 900'	
2020	United States Department of Agriculture	1" = 900'	
2019	United States Department of Agriculture	1" = 900'	
2018	United States Department of Agriculture	1" = 900'	
2017	United States Department of Agriculture	1" = 900'	
2016	United States Department of Agriculture	1" = 900'	
2015	United States Department of Agriculture	1" = 900'	
2014	United States Department of Agriculture	1" = 900'	
2012	United States Department of Agriculture	1" = 900'	
2010	United States Department of Agriculture	1" = 900'	
2009	United States Department of Agriculture	1" = 900'	
2006	United States Department of Agriculture	1" = 900'	
2005	United States Department of Agriculture	1" = 900'	
2004	United States Department of Agriculture	1" = 900'	
2003	United States Department of Agriculture	1" = 900'	
1997	United States Geological Survey	1" = 900'	
1990	United States Geological Survey	1" = 900'	
1985	United States Geological Survey	1" = 900'	
1975	Earth Resource Observation And Science	1" = 900'	
1962	Agricultural Stabilization & Conserv. Service	1" = 900'	
1952	Army Mapping Service	1" = 900'	
1941	Agricultural Stabilization & Conserv. Service	1" = 900'	

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900
Feet



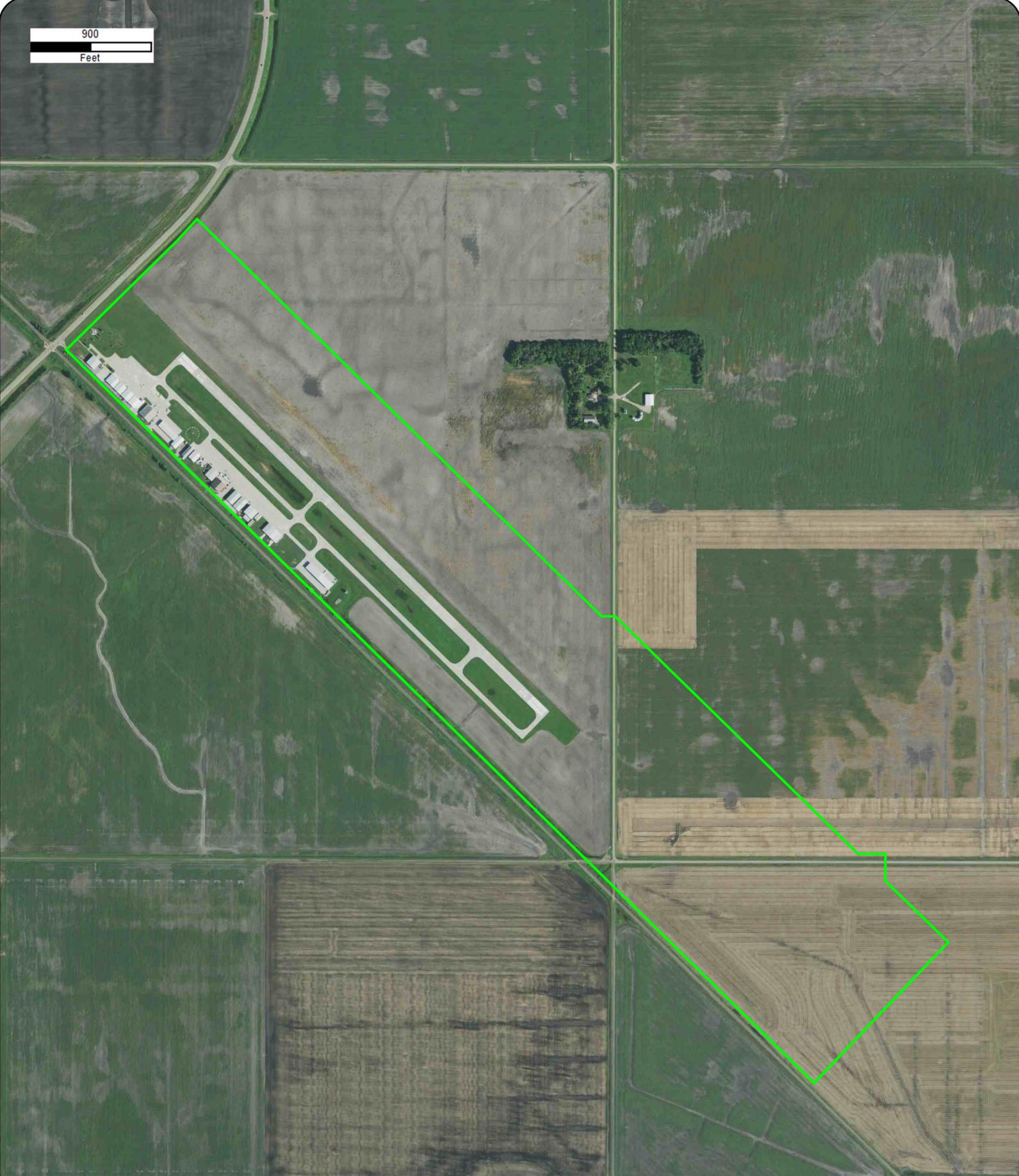
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Source: MAXAR
Scale: 1" = 900'
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Address: Casselton Robert Miller Regional Airport,
Mapleton, ND
Approx Center: -97.20328953,46.85140164

Order No: 23101200257



900
Feet



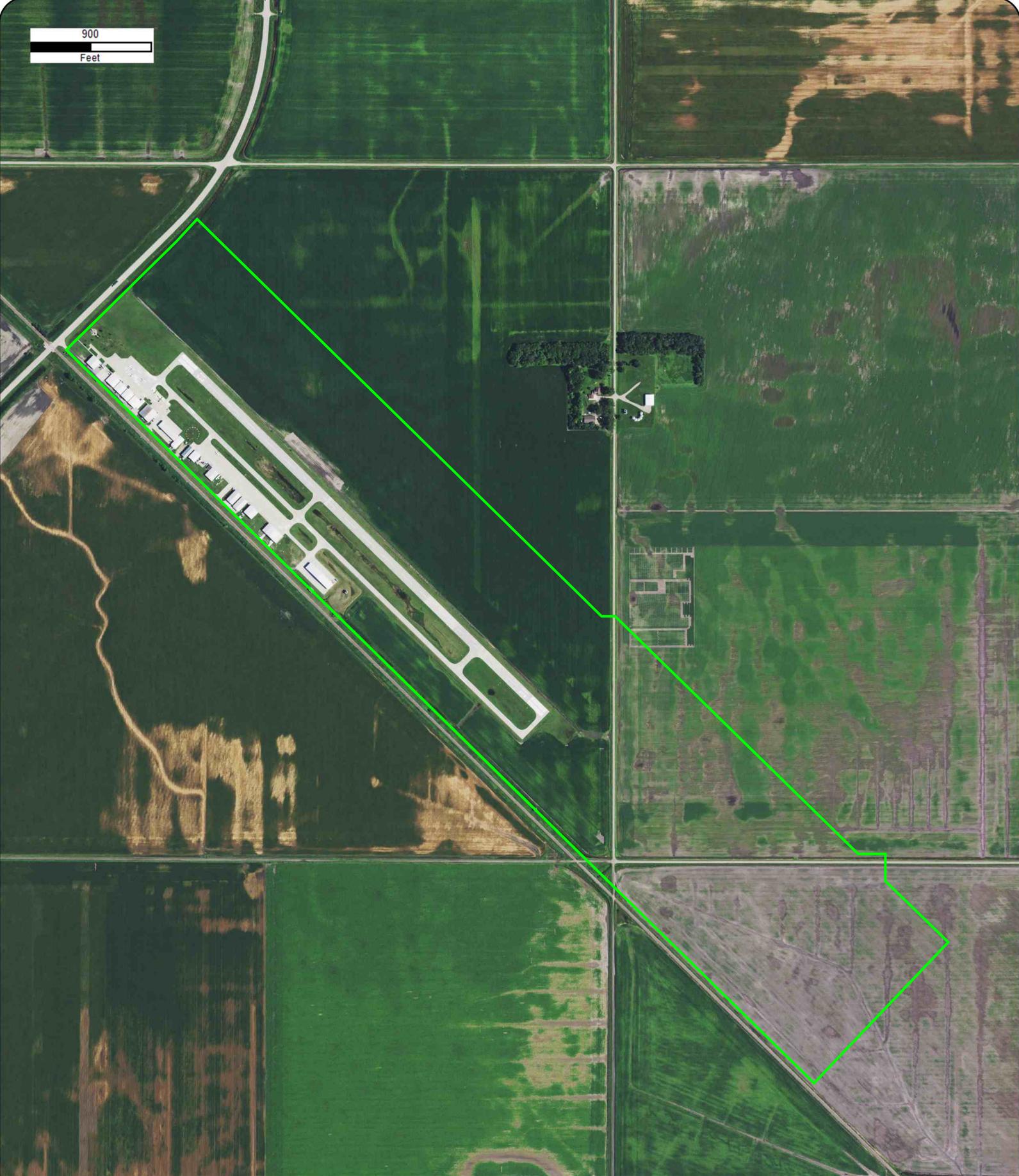
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Source: USDA
Scale: 1" = 900'
Comment:

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Mapleton, ND
Approx Center: -97.20328953,46.85140164

Order No: 23101200257



900
Feet



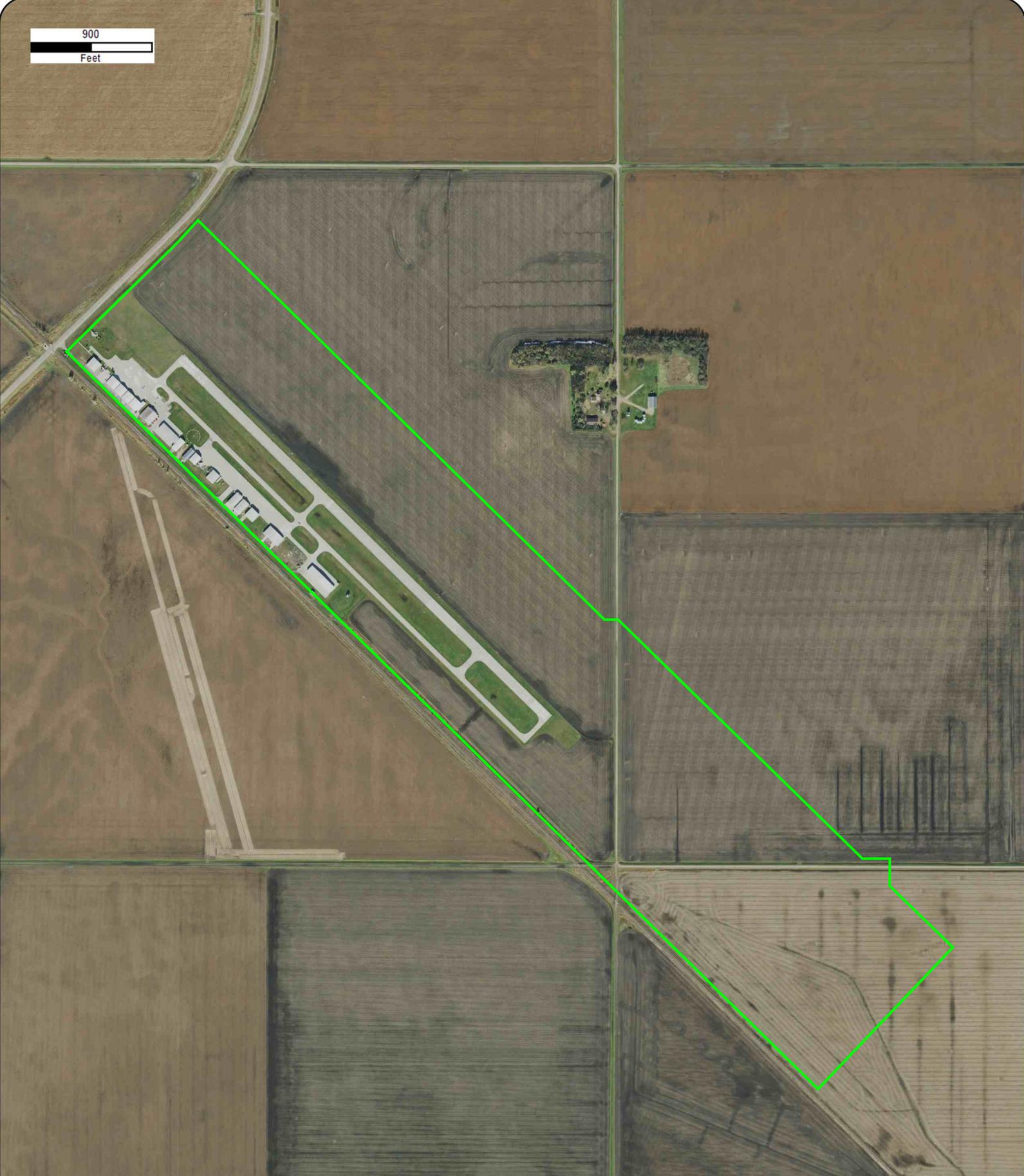
Year: 2019
Source: USDA
Scale: 1" = 900'
Comment:

Address: Casselton Robert Miller Regional Airport,
Mapleton, ND
Approx Center: -97.20328953,46.85140164

Order No: 23101200257



900
Feet



Year: 2018
Source: USDA
Scale: 1" = 900'
Comment:

Address: Casselton Robert Miller Regional Airport,
Mapleton, ND
Approx Center: -97.20328953,46.85140164

Order No: 23101200257



900
Feet



Year: 2017
Source: USDA
Scale: 1" = 900'
Comment:

Address: Casselton Robert Miller Regional Airport,
Mapleton, ND
Approx Center: -97.20328953,46.85140164

Order No: 23101200257



900
Feet



Year: 2016
Source: USDA
Scale: 1" = 900'
Comment:

Address: Casselton Robert Miller Regional Airport,
Mapleton, ND
Approx Center: -97.20328953,46.85140164

Order No: 23101200257



900
Feet



Year: 2015
Source: USDA
Scale: 1" = 900'
Comment:

Address: Casselton Robert Miller Regional Airport,
Mapleton, ND
Approx Center: -97.20328953,46.85140164

Order No: 23101200257



900
Feet



Year: 2014
Source: USDA
Scale: 1" = 900'
Comment:

Address: Casselton Robert Miller Regional Airport,
Mapleton, ND
Approx Center: -97.20328953,46.85140164

Order No: 23101200257



900
Feet



Year: 2012
Source: USDA
Scale: 1" = 900'
Comment:

Address: Casselton Robert Miller Regional Airport,
Mapleton, ND
Approx Center: -97.20328953,46.85140164

Order No: 23101200257



900
Feet



Year: 2010
Source: USDA
Scale: 1" = 900'
Comment:

Address: Casselton Robert Miller Regional Airport,
Mapleton, ND
Approx Center: -97.20328953,46.85140164

Order No: 23101200257



900
Feet



Year: 2009
Source: USDA
Scale: 1" = 900'
Comment:

Address: Casselton Robert Miller Regional Airport,
Mapleton, ND
Approx Center: -97.20328953,46.85140164

Order No: 23101200257



900
Feet



Year: 2006
Source: USDA
Scale: 1" = 900'
Comment:

Address: Casselton Robert Miller Regional Airport,
Mapleton, ND
Approx Center: -97.20328953,46.85140164

Order No: 23101200257



900
Feet



Year: 2005
Source: USDA
Scale: 1" = 900'
Comment:

Address: Casselton Robert Miller Regional Airport,
Mapleton, ND
Approx Center: -97.20328953,46.85140164

Order No: 23101200257



900
Feet



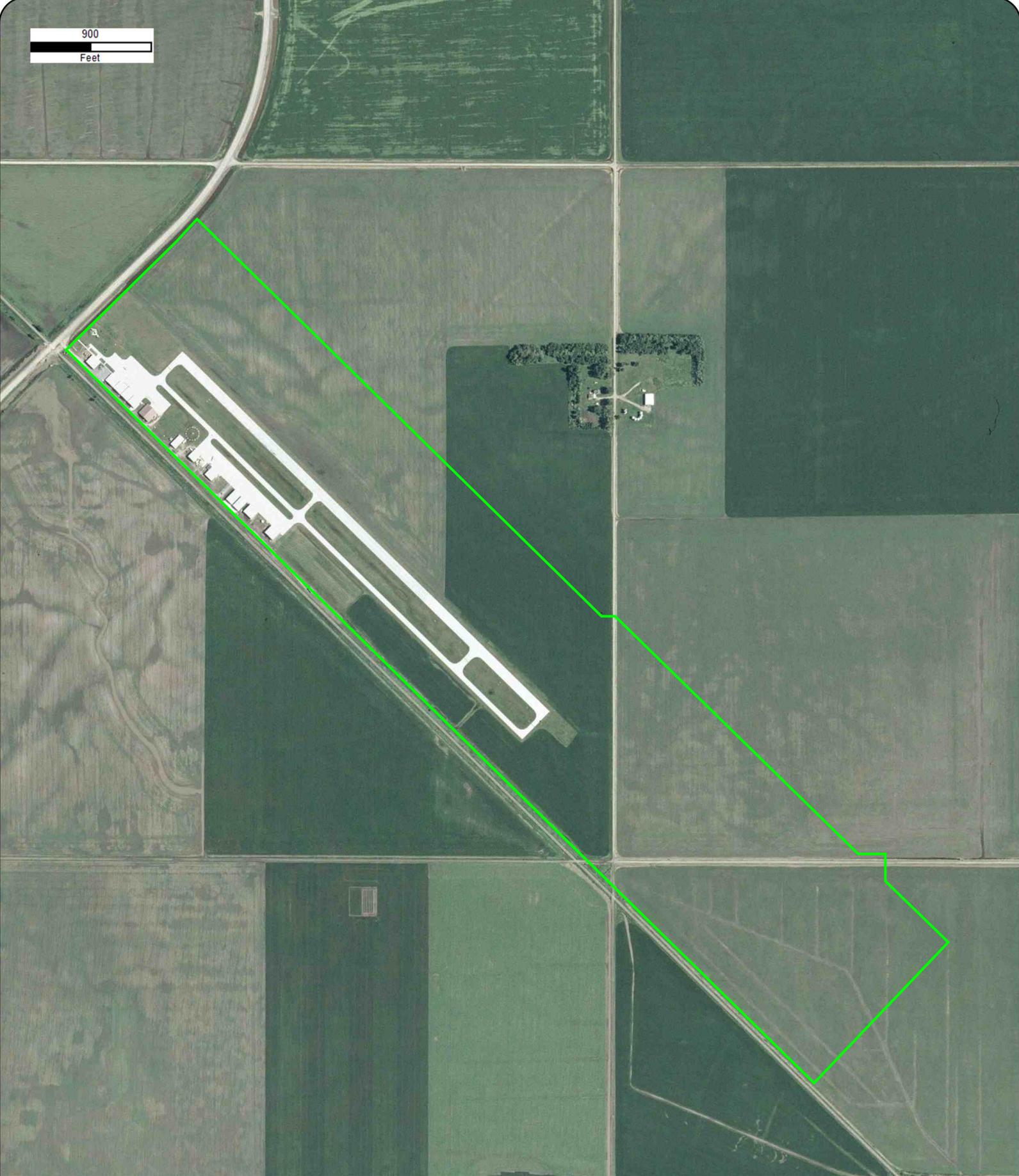
Year: 2004
Source: USDA
Scale: 1" = 900'
Comment:

Address: Casselton Robert Miller Regional Airport,
Mapleton, ND
Approx Center: -97.20328953,46.85140164

Order No: 23101200257



900
Feet



Year: 2003
Source: USDA
Scale: 1" = 900'
Comment:

Address: Casselton Robert Miller Regional Airport,
Mapleton, ND
Approx Center: -97.20328953,46.85140164

Order No: 23101200257



900
Feet



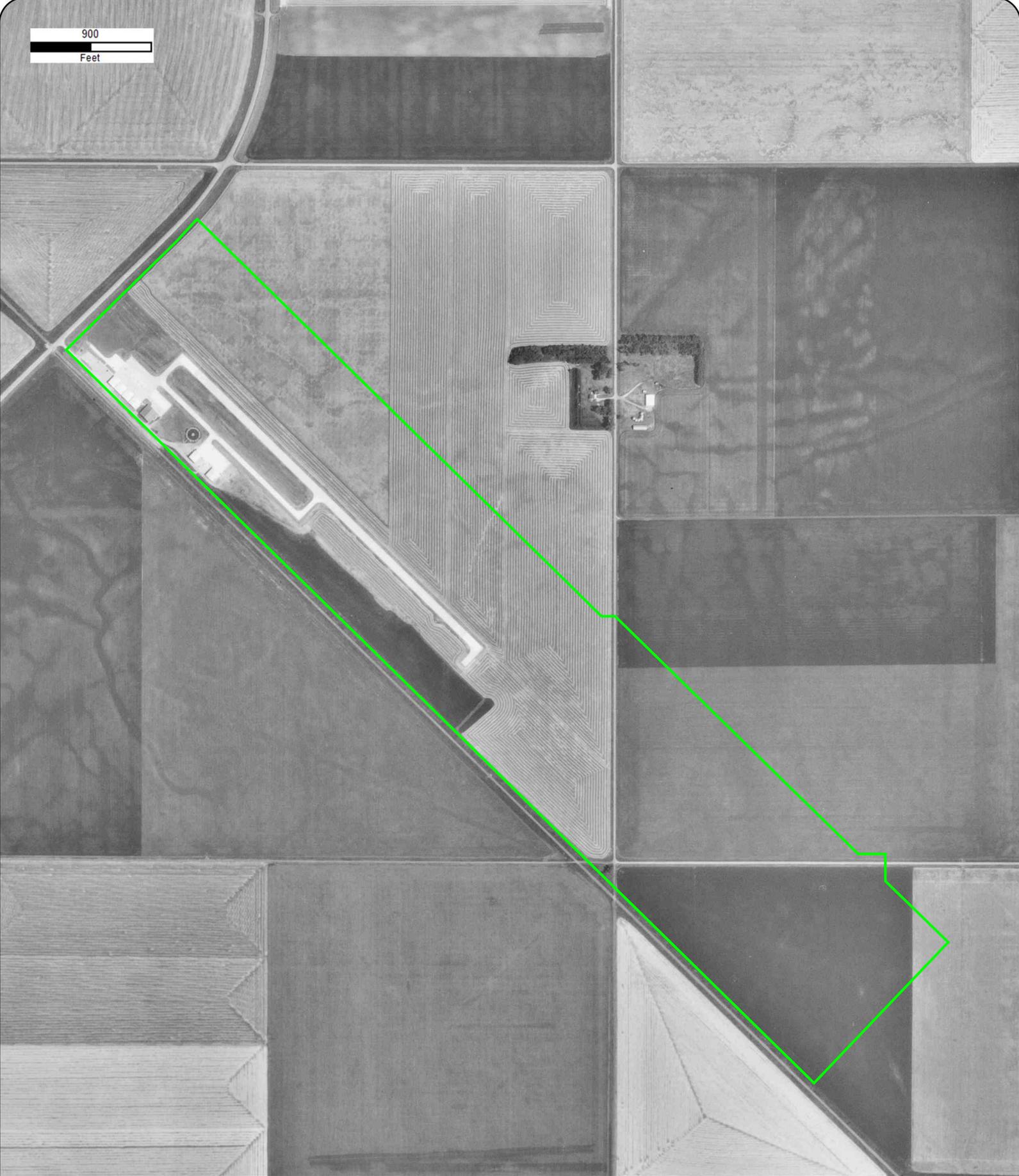
Year: 1997
Source: USGS
Scale: 1" = 900'
Comment:

Address: Casselton Robert Miller Regional Airport,
Mapleton, ND
Approx Center: -97.20328953,46.85140164

Order No: 23101200257



900
Feet



Year: 1990
Source: USGS
Scale: 1" = 900'
Comment:

Address: Casselton Robert Miller Regional Airport,
Mapleton, ND
Approx Center: -97.20328953,46.85140164

Order No: 23101200257



900
Feet



Year: 1985
Source: USGS
Scale: 1" = 900'
Comment:

Address: Casselton Robert Miller Regional Airport,
Mapleton, ND
Approx Center: -97.20328953,46.85140164

Order No: 23101200257



900
Feet



Year: 1975
Source: EROS
Scale: 1" = 900'
Comment:

Address: Casselton Robert Miller Regional Airport,
Mapleton, ND
Approx Center: -97.20328953,46.85140164

Order No: 23101200257



900
Feet



Year: 1962
Source: ASCS
Scale: 1" = 900'
Comment:

Address: Casselton Robert Miller Regional Airport,
Mapleton, ND
Approx Center: -97.20328953,46.85140164

Order No: 23101200257



900
Feet



Year: 1952
Source: AMS
Scale: 1" = 900'
Comment:

Address: Casselton Robert Miller Regional Airport,
Mapleton, ND
Approx Center: -97.20328953,46.85140164

Order No: 23101200257



F42V

900

Feet

F42V
1-1

F42V
1-1

42V
1-1

F42V
1-1

M42V
2-1

F42V
1-1

F42V
1-1

14

13

42V
1-1

F42V
1-1

F42V
1-1

H2V
1-1

F42V
1-1

H2V
1-1

H2V
1-1

H2V
1-1

Year: 1941
Source: ASCS
Scale: 1" = 900'
Comment:

Address: Casselton Robert Miller Regional Airport,
Mapleton, ND
Approx Center: -97.20328953,46.85140164

Order No: 23101200257



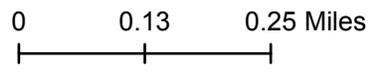
Appendix H. Potentially Hazardous Materials Map



Casselton Robert Miller Regional Airport

Finding Sites

-  Sites
-  Airport Property
-  Project Area



Appendix I. Database Search Results

Leaking Underground Storage Tanks - North Dakota Department of Environmental Quality

<input type="button" value="First"/> <input type="button" value="Prev"/> <input type="button" value="Next"/> <input type="button" value="Last"/> Page <input type="text" value="1"/> of <input type="text" value="1"/> <input type="button" value="Go"/> <input type="text" value="casselton"/> <input type="button" value="Search"/> Records: 7													
Facility ID▲	Owner Name	Owner Address	Owner City State Zip	Facility Name	Facility Address	Facility Address 2	Facility City State Zip	Facility County	Facility Latitude	Facility Longitude	Alternate ID	LUST Status	LUST Status Date
118	Gordys Inc	15556 37th St SE	Casselton ND 58012-9753	Gordys Inc Ampride	3695 163rd Avenue SE		Mapleton ND 58059	Cass	46.878853	-97.052624	118	Site Cleanup Completed	7/7/1990
1019	Parkhouse Oil Company	Box 573	Casselton ND 58012	Mariens Auto Repair	51 Langer Avenue		Casselton ND 58012	Cass	46.901556	-97.210689	1019	Site Cleanup Completed	9/16/1998
1223	Petro Serve USA	1772 W. Main Ave.	West Fargo ND 58078-	Petro Serve USA 110	703 Front St	Box 398	Casselton ND 58012-	Cass	46.900642	-97.211583	1223	Site Cleanup Completed	6/14/2005
2871	Petro Serve USA	1772 W. Main Ave.	West Fargo ND 58078-	Petro Serve USA 065	102 Langer Ave	PO Box 398	Casselton ND 58012-	Cass	46.899919	-97.212947	2871	Site Cleanup Completed	11/3/1998
3628	Gordys Inc	15556 37th St SE	Casselton ND 58012-9753	Gordys Inc (Tesoro)	I-94 and Hwy 18	15556 37th St SE	Casselton ND 58012-	Cass	46.875964	-97.210006	3628-1	Site Investigation Continuing	3/3/2023
10664	Loeering Manufacturing	South of Casselton	Casselton ND 58012	Loeering Manufacturing	15514 37th Street SE		Casselton ND 58012	Cass	46.876392	-97.219672	10664	Site Cleanup Completed	10/23/1992
10960	Phil Rieniets	PO Box 397	Casselton ND 58012	Schlagel Bulk Oil Company	Front Street and 10th Avenue		Casselton ND 58012	Cass	46.900046	-97.206134	10960-1	Closure Letter	7/31/2002
10970	Charlene Ham	325 2nd St S	Casselton ND 58012	Charlene Ham Residence	325 2nd St S		Casselton ND 58012	Cass	46.899173	-97.217114	10970	Site Cleanup Completed	1/17/2005

Underground Storage Tanks - North Dakota Department of Environmental Quality

First	Prev	Next	Last	Page 1	of 1	Go	casselton	Search	Records: 15			
Facility ID	Owner Name	Owner Address	Owner City State Zip	Facility Name	Facility Address	Facility Address 2	Facility City State Zip	Facility County	Facility Latitude	Facility Longitude	Facility Phone	Facility Status
10332	Petro Serve USA	1772 W. Main Ave.	West Fargo ND 58078-	Cenex Bulk plant	1230 Front Street		Casselton ND 58012	Cass	46.90025	-97.203585		Inactive
10664	Loeering Manufacturing	South of Casselton	Casselton ND 58012	Loeering Manufacturing	15514 37th Street SE		Casselton ND 58012	Cass	46.876392	-97.219672		Inactive
10674	Georges Imaginarium Inc	101 Langering Avenue South	Casselton ND 58012	Georges Imaginarium Inc	101 Langer Avenue South		Casselton ND 58012	Cass	46.899511	-97.211383		Inactive
10970	Charlene Ham	325 2nd St S	Casselton ND 58012	Charlene Ham Residence	325 2nd St S		Casselton ND 58012	Cass	46.899173	-97.217114		Inactive
10960	Phil Rieniets	PO Box 397	Casselton ND 58012	Schlagel Bulk Oil Company	Front Street and 10th Avenue		Casselton ND 58012	Cass	46.900046	-97.206134		Inactive
2871	Petro Serve USA	1772 W. Main Ave.	West Fargo ND 58078-	Petro Serve USA 065	102 Langer Ave	PO Box 398	Casselton ND 58012-	Cass	46.899919	-97.212947	7013474416	Active
2857	Parkhouse Oil Company	Box 573	Casselton ND 58012	Shamrock Bar	Hwy 18 & I-94		Casselton ND 58012	Cass	46.87627	-97.209972		Inactive
2629	RD Offutt Inc	545 1st Street	Casselton ND 58012	RD Offutt Inc	545 1st Street		Casselton ND 58012	Cass	46.901555	-97.213657		Inactive
3628	Gordys Inc	15556 37th St SE	Casselton ND 58012-9753	Gordys Inc (Tesoro)	I-94 and Hwy 18	15556 37th St SE	Casselton ND 58012-	Cass	46.875964	-97.210006	7013475217	Active
118	Gordys Inc	15556 37th St SE	Casselton ND 58012-9753	Gordys Inc Ampride	3695 163rd Avenue SE		Mapleton ND 58059	Cass	46.878853	-97.052624		Inactive
251	A T and T Corp.	308 S. Akard St., Rm. 1700	Dallas TX 75202-	A T and T Communications	;))		Casselton ND 58012	Cass	46.877915	-97.257338		Inactive
749	ND Department of Transportation	608 E Boulevard Avenue	Bismarck ND 58505-0700	North Dakota State Dept of Transportation	15482 37th ST SE		Casselton ND 58012	Cass	46.876053	-97.222505		Inactive
1019	Parkhouse Oil Company	Box 573	Casselton ND 58012	Mariens Auto Repair	51 Langer Avenue		Casselton ND 58012	Cass	46.901556	-97.210689	7013474651	Inactive
1207	Burlington Northern and Santa Fe Railroad Company	511 2nd Avenue SE	Dilworth MN 56529	Burlington Northern Railroad Company	;))		Casselton ND 58012	Cass	46.900072	-97.211425		Inactive
1223	Petro Serve USA	1772 W. Main Ave.	West Fargo ND 58078-	Petro Serve USA 110	703 Front St	Box 398	Casselton ND 58012-	Cass	46.900642	-97.211583	7013474783	Active

Export to Excel

US EPA Envirofacts Database Results

FACILITY INFORMATION	ADDRESS	SUMMARY REPORT	FACILITY REPORT
CASSELTON CITY OF	702 1ST STREET NORTH, CASSELTON, ND 58012-3308	https://enviro.epa.gov/envirofacts/envirofacts/multisystem/summary-report?registryId=110011610480	https://frs-public.epa.gov/ords/frs_public2/fii_query_dtl.disp_program_f?p_registry_id=110011610480
CASSELTON CITY OF	702 1ST ST N, CASSELTON, ND 58012	https://enviro.epa.gov/envirofacts/envirofacts/multisystem/summary-report?registryId=110040042628	https://frs-public.epa.gov/ords/frs_public2/fii_query_dtl.disp_program_f?p_registry_id=110040042628
CASSELTON RAILYARD	P.O. BOX 278, CASSELTON, ND 58012	https://enviro.epa.gov/envirofacts/envirofacts/multisystem/summary-report?registryId=110070131141	https://frs-public.epa.gov/ords/frs_public2/fii_query_dtl.disp_program_f?p_registry_id=110070131141
CASSELTON REGIONAL AIRPORT	ND HWY 18, CASSELTON, ND 58012	https://enviro.epa.gov/envirofacts/envirofacts/multisystem/summary-report?registryId=110056167008	https://frs-public.epa.gov/ords/frs_public2/fii_query_dtl.disp_program_f?p_registry_id=110056167008
CASSELTON REGIONAL AIRPORT-SN 8	ND HWY 18, CASSELTON, ND 58012	https://enviro.epa.gov/envirofacts/envirofacts/multisystem/summary-report?registryId=110070003882	https://frs-public.epa.gov/ords/frs_public2/fii_query_dtl.disp_program_f?p_registry_id=110070003882
CENEX PETRO SERVE	FRONT STREET, CASSELTON, ND 58012	https://enviro.epa.gov/envirofacts/envirofacts/multisystem/summary-report?registryId=110016764740	https://frs-public.epa.gov/ords/frs_public2/fii_query_dtl.disp_program_f?p_registry_id=110016764740
CENTRAL CASS SCHOOL DISTRICT 17	802 5TH STREET NORTH, CASSELTON, ND 58012-3346	https://enviro.epa.gov/envirofacts/envirofacts/multisystem/summary-report?registryId=110011492875	https://frs-public.epa.gov/ords/frs_public2/fii_query_dtl.disp_program_f?p_registry_id=110011492875
CHS INC.-CASSELTON	158TH R. AVE & FRONT ST., CASSELTON, ND 580120398	https://enviro.epa.gov/envirofacts/envirofacts/multisystem/summary-report?registryId=110000723156	https://frs-public.epa.gov/ords/frs_public2/fii_query_dtl.disp_program_f?p_registry_id=110000723156
CUSTOM AIRCRAFT REFINISHING INC.	18 CASSELTON AIRPORT ROAD, CASSELTON, ND 58012	https://enviro.epa.gov/envirofacts/envirofacts/multisystem/summary-report?registryId=110014452957	https://frs-public.epa.gov/ords/frs_public2/fii_query_dtl.disp_program_f?p_registry_id=110014452957
HOLCIM-MWR, INC.-CASSELTON READY MIX PLANT	1704 FRONT ST, CASSELTON, ND 58012	https://enviro.epa.gov/envirofacts/envirofacts/multisystem/summary-report?registryId=110070053408	https://frs-public.epa.gov/ords/frs_public2/fii_query_dtl.disp_program_f?p_registry_id=110070053408
LOEGERING MFG	15514 37TH STREET SE, CASSELTON, ND 58012	https://enviro.epa.gov/envirofacts/envirofacts/multisystem/summary-report?registryId=110056195969	https://frs-public.epa.gov/ords/frs_public2/fii_query_dtl.disp_program_f?p_registry_id=110056195969
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION, CASSELTON SECTION	15482 37TH STREET, SE, CASSELTON, ND 58012	https://enviro.epa.gov/envirofacts/envirofacts/multisystem/summary-report?registryId=110016673839	https://frs-public.epa.gov/ords/frs_public2/fii_query_dtl.disp_program_f?p_registry_id=110016673839
NORTHERN PLAINS FINISHING	15514 37TH ST. SE, CASSELTON, ND 58012	https://enviro.epa.gov/envirofacts/envirofacts/multisystem/summary-report?registryId=110070234658	https://frs-public.epa.gov/ords/frs_public2/fii_query_dtl.disp_program_f?p_registry_id=110070234658
PETRO SERVE	703 FRONT STREET, CASSELTON, ND 58012	https://enviro.epa.gov/envirofacts/envirofacts/multisystem/summary-report?registryId=110056231705	https://frs-public.epa.gov/ords/frs_public2/fii_query_dtl.disp_program_f?p_registry_id=110056231705
PROJECT SAFE SEND	15482 39TH ST SE, CASSELTON, ND 58012	https://enviro.epa.gov/envirofacts/envirofacts/multisystem/summary-report?registryId=110007674551	https://frs-public.epa.gov/ords/frs_public2/fii_query_dtl.disp_program_f?p_registry_id=110007674551
THARALDSON ETHANOL	3549 153RD AVE. SE, CASSELTON, ND 58012	https://enviro.epa.gov/envirofacts/envirofacts/multisystem/summary-report?registryId=110038887915	https://frs-public.epa.gov/ords/frs_public2/fii_query_dtl.disp_program_f?p_registry_id=110038887915
THOMAS E BRESNHAN	15687 35TH ROAD ST SE, CASSELTON, ND 58012	https://enviro.epa.gov/envirofacts/envirofacts/multisystem/summary-report?registryId=110055638742	https://frs-public.epa.gov/ords/frs_public2/fii_query_dtl.disp_program_f?p_registry_id=110055638742
TITAN MACHINERY - CASSELTON	1701 GOVERNOR'S DRIVE,	https://enviro.epa.gov/envirofacts/envirofacts/multisystem/summary-report?registryId=110070540686	https://frs-public.epa.gov/ords/frs_public2/fii_query_dtl.disp_program_f?p_registry_id=110070540686

Appendix J. ERIS Database Reports



DATABASE REPORT

Project Property: *Casselton Robert Miller Regional Airport
Casselton Robert Miller Regional Airport
Mapleton ND*

Project No: *4545300-230576.01, Ph.3*

Report Type: *Database Report*

Order No: *23101200257*

Requested by: *Mead & Hunt, Inc.*

Date Completed: *October 16, 2023*

Environmental Risk Information Services

A division of Glacier Media Inc.

1.866.517.5204 | info@erisinfo.com | erisinfo.com

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Executive Summary

Property Information:

Project Property: *Casselton Robert Miller Regional Airport
Casselton Robert Miller Regional Airport Mapleton ND*

Project No: *4545300-230576.01, Ph.3*

Coordinates:

Latitude: *46.85140164*
Longitude: *-97.20328953*
UTM Northing: *5,190,218.25*
UTM Easting: *636,972.78*
UTM Zone: *UTM Zone 14T*

Elevation: *924 FT*

Order Information:

Order No: *23101200257*
Date Requested: *October 12, 2023*
Requested by: *Mead & Hunt, Inc.*
Report Type: *Database Report*

Historicals/Products:

Aerial Photographs *Historical Aerials (with Project Boundaries)*
City Directory Search *CD - 2 Street Search*
ERIS Xplorer [*ERIS Xplorer*](#)
Excel Add-On *Excel Add-On*
Fire Insurance Maps *US Fire Insurance Maps*
Physical Setting Report (PSR) *Physical Setting Report (PSR)*
Topographic Map *Topographic Maps*

Executive Summary: Report Summary

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
<u>Standard Environmental Records</u>								
Federal								
NPL	Y	1	0	0	0	0	0	0
PROPOSED NPL	Y	1	0	0	0	0	0	0
DELETED NPL	Y	0.5	0	0	0	0	-	0
SEMS	Y	0.5	0	0	0	0	-	0
SEMS ARCHIVE	Y	0.5	0	0	0	0	-	0
ODI	Y	0.5	0	0	0	0	-	0
CERCLIS	Y	0.5	0	0	0	0	-	0
IODI	Y	0.5	0	0	0	0	-	0
CERCLIS NFRAP	Y	0.5	0	0	0	0	-	0
CERCLIS LIENS	Y	PO	0	-	-	-	-	0
RCRA CORRACTS	Y	1	0	0	0	0	0	0
RCRA TSD	Y	0.5	0	0	0	0	-	0
RCRA LQG	Y	0.25	0	0	0	-	-	0
RCRA SQG	Y	0.25	0	0	0	-	-	0
RCRA VSQG	Y	0.25	0	0	0	-	-	0
RCRA NON GEN	Y	0.25	0	0	0	-	-	0
RCRA CONTROLS	Y	0.5	0	0	0	0	-	0
FED ENG	Y	0.5	0	0	0	0	-	0
FED INST	Y	0.5	0	0	0	0	-	0
LUCIS	Y	0.5	0	0	0	0	-	0
NPL IC	Y	0.5	0	0	0	0	-	0
ERNS 1982 TO 1986	Y	PO	0	-	-	-	-	0
ERNS 1987 TO 1989	Y	PO	0	-	-	-	-	0
ERNS	Y	PO	0	-	-	-	-	0
FED BROWNFIELDS	Y	0.5	0	0	0	0	-	0
FEMA UST	Y	0.25	0	0	0	-	-	0
FRP	Y	0.25	0	0	0	-	-	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
DELISTED FRP	Y	0.25	0	0	0	-	-	0
HIST GAS STATIONS	Y	0.25	0	0	0	-	-	0
REFN	Y	0.25	0	0	0	-	-	0
BULK TERMINAL	Y	0.25	0	0	0	-	-	0
SEMS LIEN	Y	PO	0	-	-	-	-	0
SUPERFUND ROD	Y	1	0	0	0	0	0	0
DOE FUSRAP	Y	1	0	0	0	0	0	0

State

SHWS	Y	1	0	0	0	0	0	0
SWF/LF	Y	0.5	0	0	0	0	-	0
LUST	Y	0.5	0	0	0	0	-	0
DELISTED LST	Y	0.5	0	0	0	0	-	0
UST	Y	0.25	0	0	0	-	-	0
AST	Y	0.25	0	0	0	-	-	0
DTNK	Y	0.25	0	0	0	-	-	0
INST	Y	0.5	0	0	0	0	-	0
BROWNFIELDS	Y	0.5	0	0	0	0	-	0

Tribal

INDIAN LUST	Y	0.5	0	0	0	0	-	0
INDIAN UST	Y	0.25	0	0	0	-	-	0
DELISTED INDIAN LST	Y	0.5	0	0	0	0	-	0
DELISTED INDIAN UST	Y	0.25	0	0	0	-	-	0

County

No County standard environmental record sources available for this State.

Additional Environmental Records

Federal

FINDS/FRS	Y	PO	4	-	-	-	-	4
TRIS	Y	PO	0	-	-	-	-	0
PFAS NPL	Y	0.5	0	0	0	0	-	0
PFAS FED SITES	Y	0.5	0	0	0	0	-	0
PFAS SSEHRI	Y	0.5	0	0	0	0	-	0
ERNS PFAS	Y	0.5	0	0	0	0	-	0
PFAS NPDES	Y	0.5	0	0	0	0	-	0
PFAS TRI	Y	0.5	0	0	0	0	-	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
PFAS WATER	Y	0.5	0	0	0	0	-	0
PFAS TSCA	Y	0.5	0	0	0	0	-	0
PFAS E-MANIFEST	Y	0.5	0	0	0	0	-	0
PFAS IND	Y	0.5	0	0	0	0	-	0
HMIRS	Y	0.125	0	0	-	-	-	0
NCDL	Y	0.125	0	0	-	-	-	0
TSCA	Y	0.125	0	0	-	-	-	0
HIST TSCA	Y	0.125	0	0	-	-	-	0
FTTS ADMIN	Y	PO	0	-	-	-	-	0
FTTS INSP	Y	PO	0	-	-	-	-	0
PRP	Y	PO	0	-	-	-	-	0
SCRD DRYCLEANER	Y	0.5	0	0	0	0	-	0
ICIS	Y	PO	0	-	-	-	-	0
FED DRYCLEANERS	Y	0.25	0	0	0	-	-	0
DELISTED FED DRY	Y	0.25	0	0	0	-	-	0
FUDS	Y	1	0	0	0	0	0	0
FUDS MRS	Y	1	0	0	0	0	0	0
FORMER NIKE	Y	1	0	0	0	0	0	0
PIPELINE INCIDENT	Y	PO	0	-	-	-	-	0
MLTS	Y	PO	0	-	-	-	-	0
HIST MLTS	Y	PO	0	-	-	-	-	0
MINES	Y	0.25	0	0	0	-	-	0
SMCRA	Y	1	0	0	0	0	0	0
MRDS	Y	1	0	0	0	0	0	0
LM SITES	Y	1	0	0	0	0	0	0
ALT FUELS	Y	0.25	0	0	0	-	-	0
CONSENT DECREES	Y	0.25	0	0	0	-	-	0
AFS	Y	PO	0	-	-	-	-	0
SSTS	Y	0.25	0	0	0	-	-	0
PCBT	Y	0.5	0	0	0	0	-	0
PCB	Y	0.5	0	0	0	0	-	0
State								
PFAS	Y	0.5	0	0	0	0	-	0
SPILLS	Y	0.125	0	0	-	-	-	0
HIST SPILLS	Y	0.125	0	0	-	-	-	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
HIST OGW SPILLS	Y	0.125	0	0	-	-	-	0
CDL	Y	0.25	0	0	0	-	-	0
UIC	Y	PO	0	-	-	-	-	0
DRYCLEANERS	Y	0.25	0	0	0	-	-	0
DELISTED DRYCLEANERS	Y	0.25	0	0	0	-	-	0
AIR PERMITS	Y	0.25	0	0	0	-	-	0
FEEDLOTS	Y	0.5	0	0	0	0	-	0

Tribal **No Tribal additional environmental record sources available for this State.**

County **No County additional environmental record sources available for this State.**

Total: 4 0 0 0 0 4

* PO – Property Only

* 'Property and adjoining properties' database search radii are set at 0.25 miles.

Executive Summary: Site Report Summary - Project Property

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
1	FINDS/FRS	CASSELTON REGIONAL AIRPORT-SN 8	CASSELTON ND 58012 <i>Registry ID: 110063044931</i>	WNW	0.00 / 0.00	3	16
1	FINDS/FRS	CASSELTON REGIONAL AIRPORT-SN 8	ND HWY 18 CASSELTON ND 58012 <i>Registry ID: 110070003882</i>	WNW	0.00 / 0.00	3	16
2	FINDS/FRS	CASSELTON REGIONAL	UNK CASSELTON ND 58012 <i>Registry ID: 110038097341</i>	WNW	0.00 / 0.00	4	17
3	FINDS/FRS	CASSELTON REGIONAL AIRPORT	ND HWY 18 CASSELTON ND 58012 <i>Registry ID: 110056167008</i>	WNW	0.00 / 0.00	8	18

Executive Summary: Site Report Summary - Surrounding Properties

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Direction</i>	<i>Distance (mi/ft)</i>	<i>Elev Diff (ft)</i>	<i>Page Number</i>
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No records found in the selected databases for the surrounding properties.

Executive Summary: Summary by Data Source

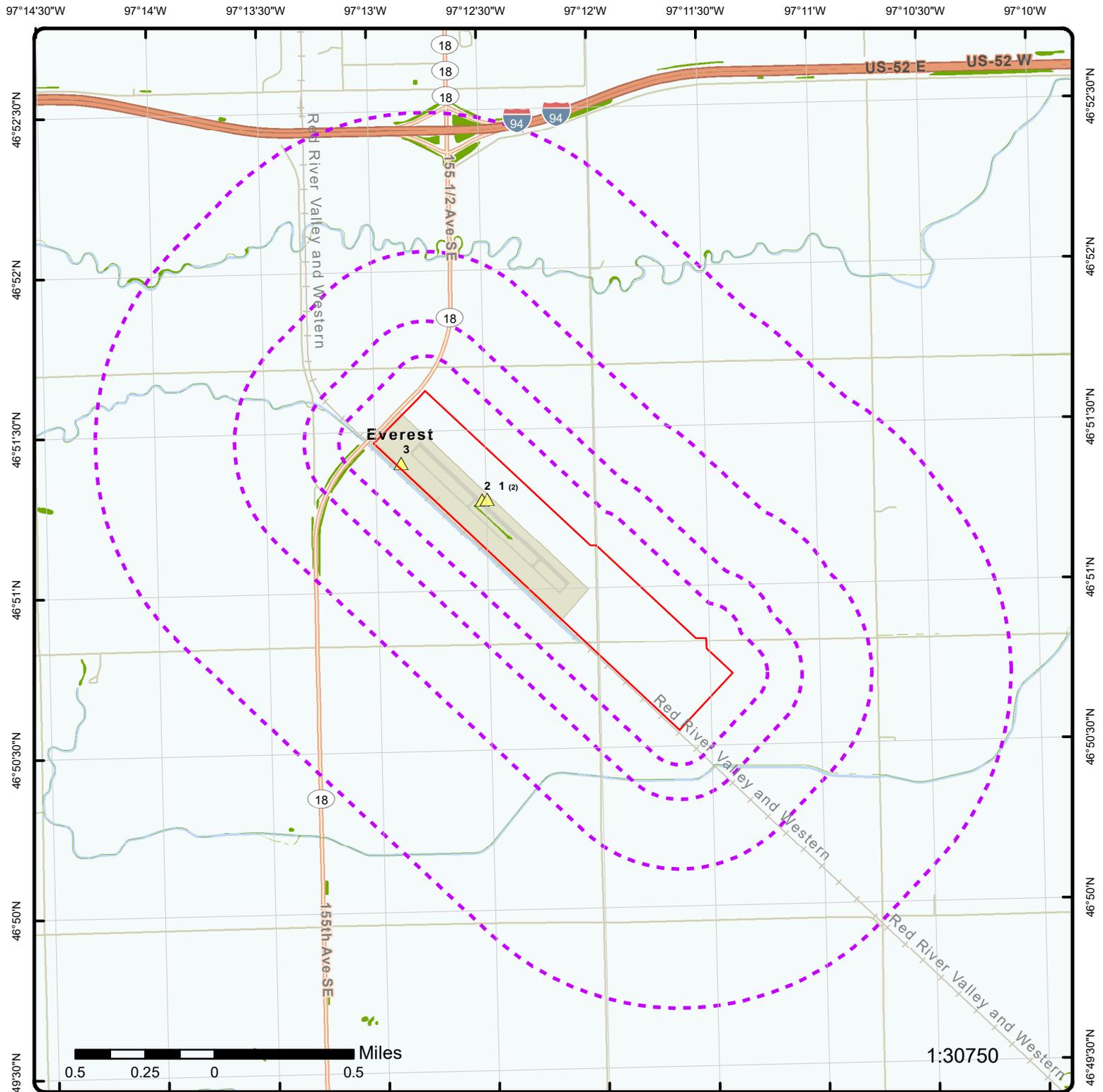
Non Standard

Federal

FINDS/FRS - Facility Registry Service/Facility Index

A search of the FINDS/FRS database, dated Mar 2, 2023 has found that there are 4 FINDS/FRS site(s) within approximately 0.02 miles of the project property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
CASSELTON REGIONAL AIRPORT-SN 8	ND HWY 18 CASSELTON ND 58012 <i>Registry ID: 110070003882</i>	WNW	0.00 / 0.00	<u>1</u>
CASSELTON REGIONAL AIRPORT-SN 8	CASSELTON ND 58012 <i>Registry ID: 110063044931</i>	WNW	0.00 / 0.00	<u>1</u>
CASSELTON REGIONAL	UNK CASSELTON ND 58012 <i>Registry ID: 110038097341</i>	WNW	0.00 / 0.00	<u>2</u>
CASSELTON REGIONAL AIRPORT	ND HWY 18 CASSELTON ND 58012 <i>Registry ID: 110056167008</i>	WNW	0.00 / 0.00	<u>3</u>



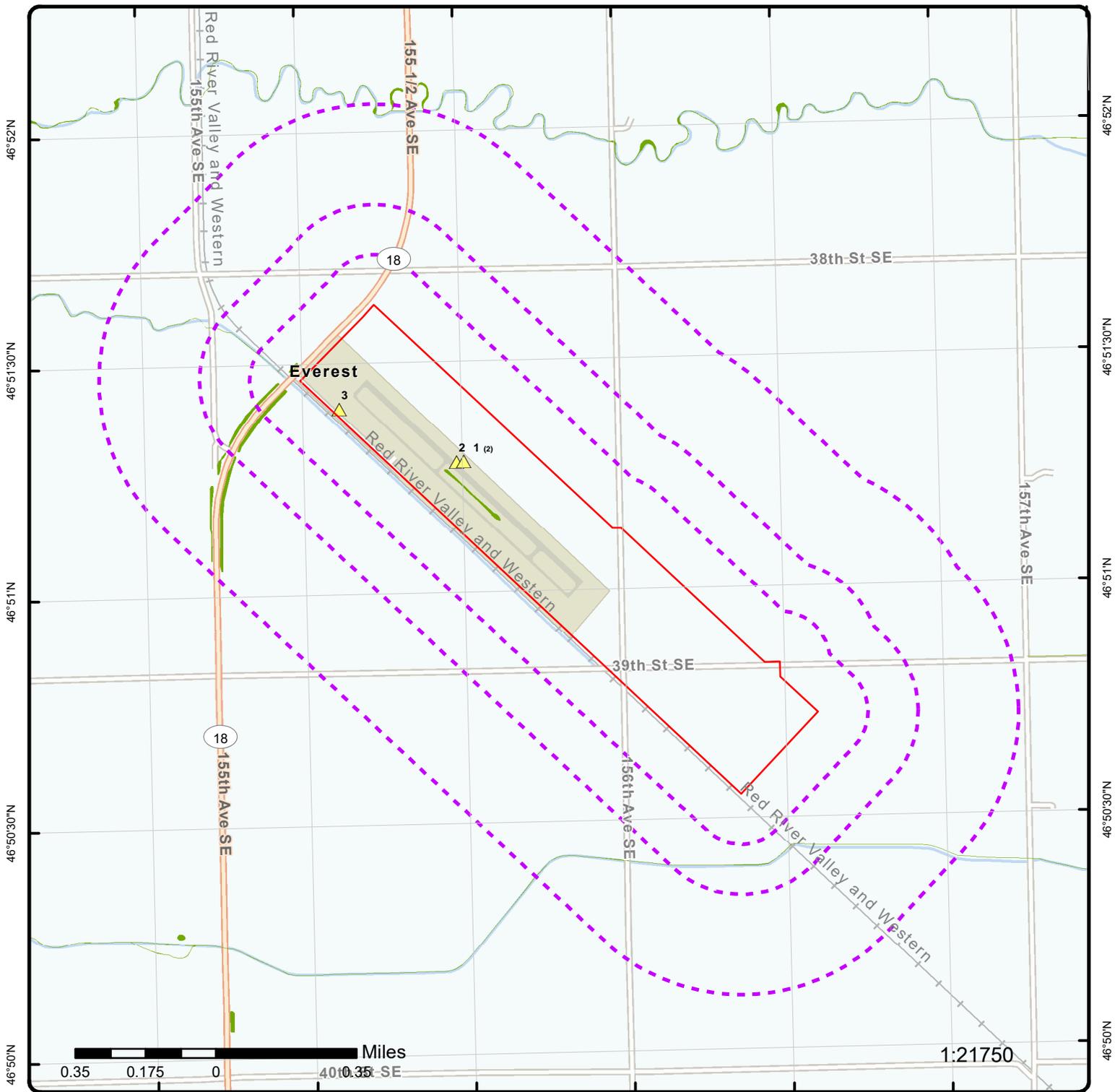
Map: 1.0 Mile Radius

Order Number: 23101200257

Address: Casselton Robert Miller Regional Airport, Mapleton, ND



- | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------|----------------|-----------------------------|---------------------------|----------------------------|------------------------------|-----------------------------|---------------------------|----------------------------|------------------------------|--------------------|----------------------|------------------------|----------------------|------------|------|-------|---------|------------------|---------------------|-------|---------------------|---------------------|-------------------------------|--|
| Project Property | Buffer Outline | Sites with Higher Elevation | Sites with Same Elevation | Sites with Lower Elevation | Sites with Unknown Elevation | Areas with Higher Elevation | Areas with Same Elevation | Areas with Lower Elevation | Areas with Unknown Elevation | Freeways; Highways | Traffic Circle; Ramp | Major & Minor Arterial | Traffic Circle; Ramp | Local Road | Rail | State | Country | National Wetland | Indian Reserve Land | Plume | 100 Year Flood Zone | 500 Year Flood Zone | FWS Special Designation Areas | National Priorities List (Active, Delisted, Proposed, Institutional Control) |
|------------------|----------------|-----------------------------|---------------------------|----------------------------|------------------------------|-----------------------------|---------------------------|----------------------------|------------------------------|--------------------|----------------------|------------------------|----------------------|------------|------|-------|---------|------------------|---------------------|-------|---------------------|---------------------|-------------------------------|--|

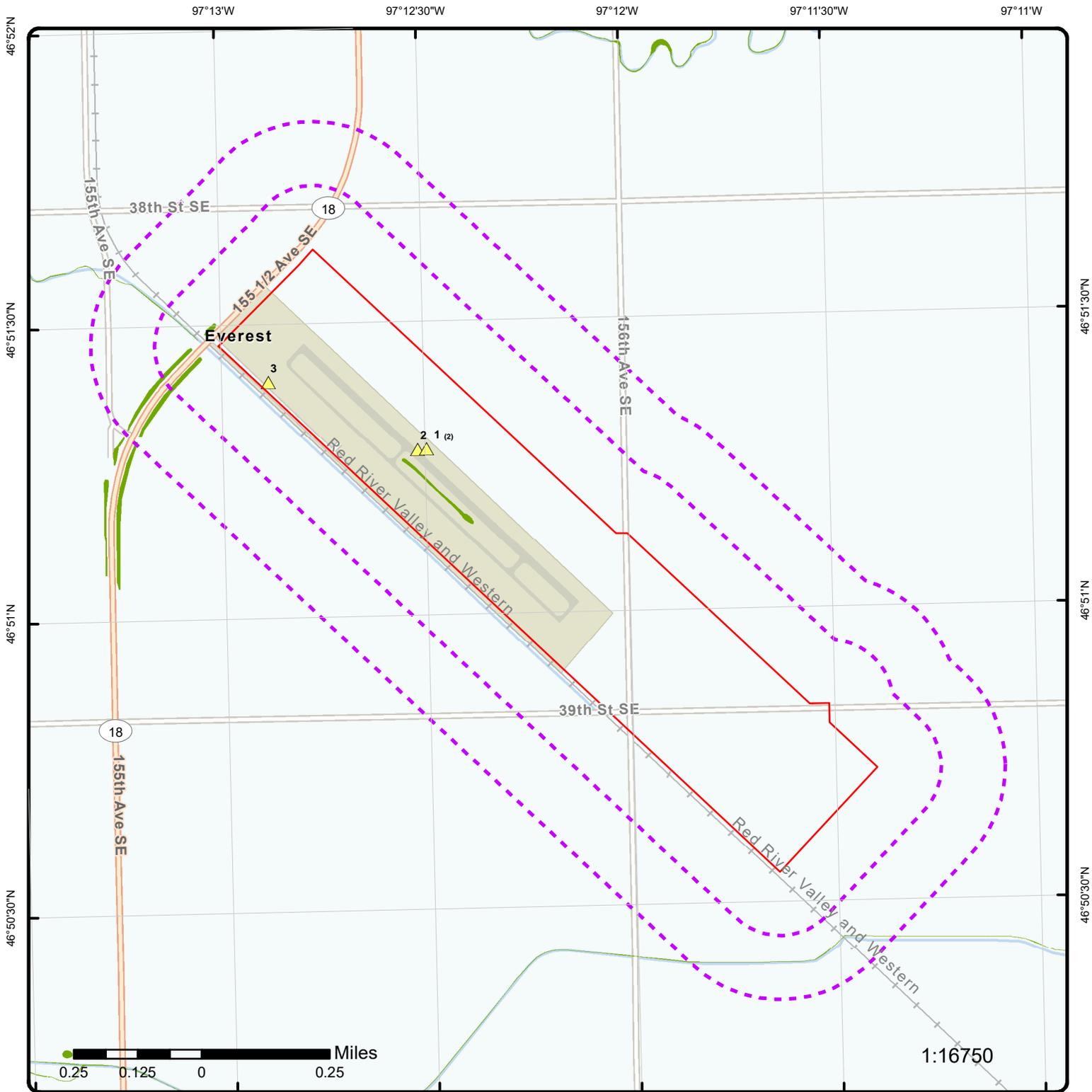


Map: 0.5 Mile Radius

Order Number: 23101200257
 Address: Casselton Robert Miller Regional Airport, Mapleton, ND



- Project Property
- Buffer Outline
- ▲ Sites with Higher Elevation
- Sites with Same Elevation
- ▼ Sites with Lower Elevation
- Sites with Unknown Elevation
- Areas with Higher Elevation
- Areas with Same Elevation
- Areas with Lower Elevation
- Areas with Unknown Elevation
- Freeways; Highways
- Traffic Circle; Ramp
- Major & Minor Arterial
- Traffic Circle; Ramp
- Local Road
- Rail
- State
- Country
- National Wetland
- Indian Reserve Land
- Plume
- 100 Year Flood Zone
- 500 Year Flood Zone
- FWS Special Designation Areas
- National Priorities List (Active, Delisted, Proposed, Institutional Control)



Map: 0.25 Mile Radius

Order Number: 23101200257
 Address: Casselton Robert Miller Regional Airport, Mapleton, ND



- Project Property
- Buffer Outline
- ▲ Sites with Higher Elevation
- ▲ Sites with Same Elevation
- ▼ Sites with Lower Elevation
- Sites with Unknown Elevation
- Areas with Higher Elevation
- Areas with Same Elevation
- Areas with Lower Elevation
- Areas with Unknown Elevation
- Freeways; Highways
- Traffic Circle; Ramp
- Major & Minor Arterial
- Traffic Circle; Ramp
- Local Road
- Rail
- State
- Country
- National Wetland
- Indian Reserve Land
- Plume
- 100 Year Flood Zone
- 500 Year Flood Zone
- FWS Special Designation Areas
- National Priorities List (Active, Delisted, Proposed, Institutional Control)

97°13'W

97°12'30"W

97°12'W

97°11'30"W

97°11'W

46°52'N

46°52'N

46°51'30"N

46°51'30"N

46°51'N

46°51'N

46°50'30"N

46°50'30"N



0.2 0.1 0 0.2 Miles

1:16619

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Aerial Year: 2021

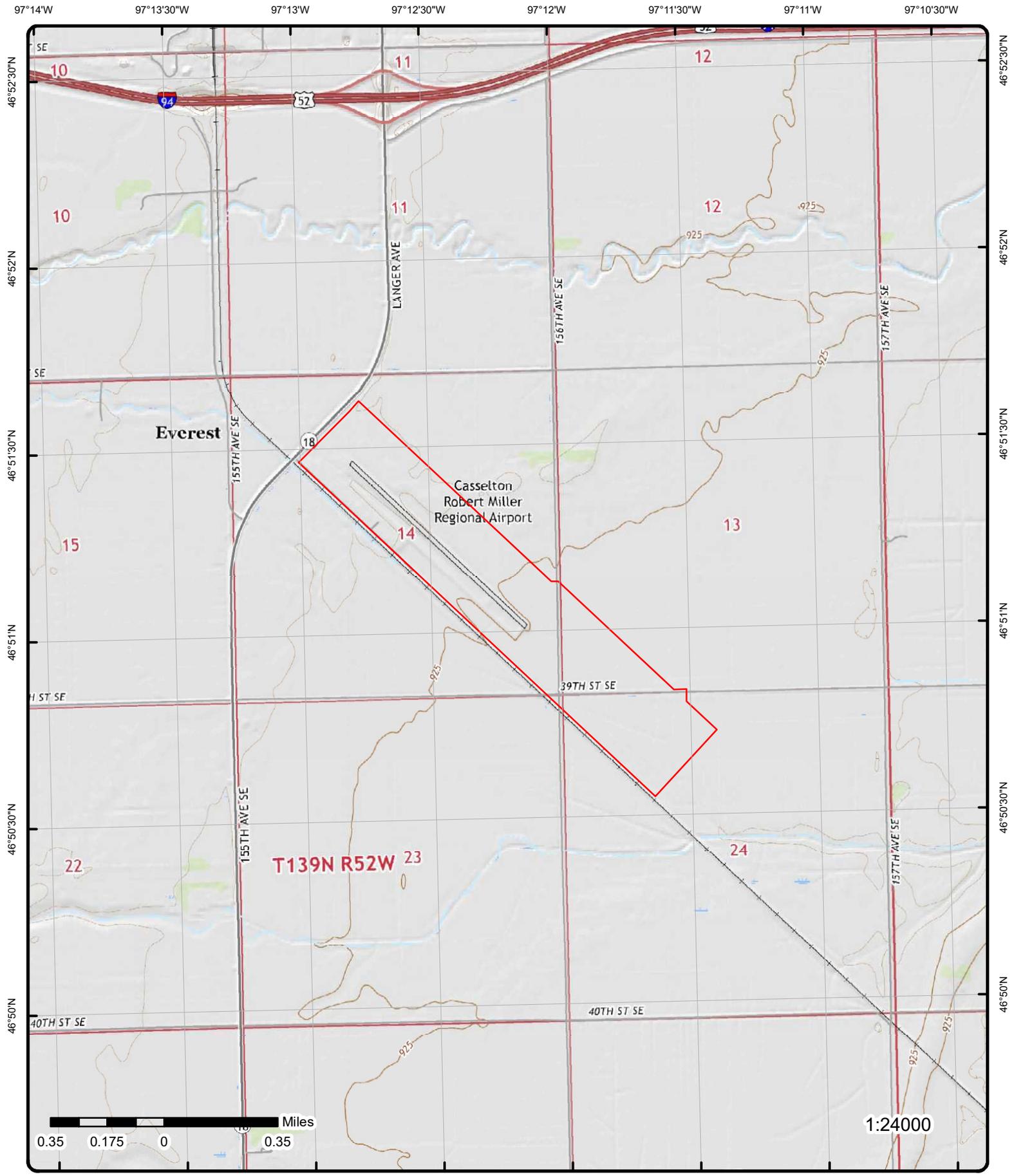
Order Number: 23101200257

Address: Casselton Robert Miller Regional Airport, Mapleton, ND



© ERIS Information Inc.

Source: ESRI World Imagery



Topographic Map Year: 2020

Order Number: 23101200257

Address: Casselton Robert Miller Regional Airport, ND



Quadrangle(s): Casselton ND, Durbin ND, Chaffee ND, Wheatland ND

© ERIS Information Inc.

Source: USGS Topographic Map

Detail Report

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
<u>1</u>	1 of 2	WNW	0.00 / 0.00	927.43 / 3	CASSELTON REGIONAL AIRPORT-SN 8 CASSELTON ND 58012	FINDS/FRS

Registry ID: 110063044931
FIPS Code:
HUC Code: 09020205
Site Type Name: STATIONARY
Location Description:
Supplemental Location:
Create Date: 16-DEC-14
Update Date:
Interest Types: STATE MASTER
SIC Codes: 4581
SIC Code Descriptions: AIRPORTS, FLYING FIELDS, AND AIRPORT TERMINAL SERVICES
NAICS Codes:
NAICS Code Descriptions:
Conveyor: ND-FP
Federal Facility Code:
Federal Agency Name:
Tribal Land Code:
Tribal Land Name:
Congressional Dist No: 00
Census Block Code: 380170403003496
EPA Region Code: 08
County Name: CASS
US/Mexico Border Ind:
Latitude: 46.85472
Longitude: -97.20833
Reference Point:
Coord Collection Method:
Accuracy Value: 99999
Datum: NAD83
Source:
Facility Detail Rprt URL: https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110063044931
Data Source: Facility Registry Service - Single File
Program Acronyms:

ND-FP:140597

<u>1</u>	2 of 2	WNW	0.00 / 0.00	927.43 / 3	CASSELTON REGIONAL AIRPORT-SN 8 ND HWY 18 CASSELTON ND 58012	FINDS/FRS
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Registry ID: 110070003882
FIPS Code: 38017
HUC Code: 09020205
Site Type Name: STATIONARY
Location Description: AIRPORT
Supplemental Location:
Create Date: 12-JAN-17
Update Date:
Interest Types: ICIS-NPDES NON-MAJOR
SIC Codes:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
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SIC Code Descriptions:
NAICS Codes:
NAICS Code Descriptions:
Conveyor: ICIS
Federal Facility Code:
Federal Agency Name:
Tribal Land Code:
Tribal Land Name:
Congressional Dist No: 00
Census Block Code: 380170403003496
EPA Region Code: 08
County Name: CASS COUNTY
US/Mexico Border Ind:
Latitude: 46.85472
Longitude: -97.20833
Reference Point: ENTRANCE POINT OF A FACILITY OR STATION
Coord Collection Method:
Accuracy Value:
Datum: NAD83
Source:
Facility Detail Rprt URL: https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110070003882
Data Source: Facility Registry Service - Single File
Program Acronyms:
 NPDES:NDR050137

2	1 of 1	WNW	0.00 / 0.00	928.46 / 4	CASSELTON REGIONAL UNK CASSELTON ND 58012	FINDS/FRS
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Registry ID: 110038097341
FIPS Code: 38017
HUC Code: 09020205
Site Type Name: STATIONARY
Location Description:
Supplemental Location:
Create Date: 18-FEB-09
Update Date: 01-JUN-17
Interest Types: AIR EMISSIONS CLASSIFICATION UNKNOWN
SIC Codes:
SIC Code Descriptions:
NAICS Codes:
NAICS Code Descriptions:
Conveyor: EIS
Federal Facility Code:
Federal Agency Name:
Tribal Land Code:
Tribal Land Name:
Congressional Dist No: 00
Census Block Code: 380170403003496
EPA Region Code: 08
County Name: CASS
US/Mexico Border Ind:
Latitude: 46.8547
Longitude: -97.2087
Reference Point:
Coord Collection Method:
Accuracy Value:
Datum: NAD83
Source:
Facility Detail Rprt URL: https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110038097341
Data Source: Facility Registry Service - Single File
Program Acronyms:
 EIS:9270911

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
3	1 of 1	WNW	0.00 / 0.00	932.21 / 8	CASSELTON REGIONAL AIRPORT ND HWY 18 CASSELTON ND 58012	FINDS/FRS

Registry ID: 110056167008
FIPS Code: 38017
HUC Code: 09020205
Site Type Name: STATIONARY
Location Description:
Supplemental Location:
Create Date: 04-NOV-13
Update Date: 24-JUL-14
Interest Types: ICIS-NPDES NON-MAJOR, STATE MASTER, STORM WATER INDUSTRIAL
SIC Codes: 4581
SIC Code Descriptions: AIRPORTS, FLYING FIELDS, AND AIRPORT TERMINAL SERVICES
NAICS Codes:
NAICS Code Descriptions:
Conveyor: ICIS
Federal Facility Code:
Federal Agency Name:
Tribal Land Code:
Tribal Land Name:
Congressional Dist No: 00
Census Block Code: 380170403003496
EPA Region Code: 08
County Name: CASS
US/Mexico Border Ind:
Latitude: 46.8567
Longitude: -97.2148
Reference Point: ENTRANCE POINT OF A FACILITY OR STATION
Coord Collection Method: INTERPOLATION-PHOTO
Accuracy Value: 300
Datum: NAD83
Source:
Facility Detail Rprt URL: https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110056167008
Data Source: Facility Registry Service - Single File
Program Acronyms:

ND-FP:11177, NPDES:NDX000243

Unplottable Summary

Total: 0 Unplottable sites

DB	Company Name/Site Name	Address	City	Zip	ERIS ID
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No unplottable records were found that may be relevant for the search criteria.

Unplottable Report

No unplottable records were found that may be relevant for the search criteria.

Appendix: Database Descriptions

Environmental Risk Information Services (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. ERIS updates databases as set out in ASTM Standard E1527-13 and E1527-21, Section 8.1.8 Sources of Standard Source Information:

"Government information from nongovernmental sources may be considered current if the source updates the information at least every 90 days, or, for information that is updated less frequently than quarterly by the government agency, within 90 days of the date the government agency makes the information available to the public."

Standard Environmental Record Sources

Federal

National Priority List:

[NPL](#)

Sites on the United States Environmental Protection Agency (EPA)'s National Priorities List of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Superfund program. The NPL, which EPA is required to update at least once a year, is based primarily on the score a site receives from EPA's Hazard Ranking System. A site must be on the NPL to receive money from the Superfund Trust Fund for remedial action. Sites are represented by boundaries where available in the EPA Superfund Site Boundaries maintained by the Shared Enterprise Geodata and Services (SEGS). Site boundaries represent the footprint of a whole site, the sum of all of the Operable Units and the current understanding of the full extent of contamination; for Federal Facility sites, the total site polygon may be the Facility boundary. Where there is no polygon boundary data available for a given site, the site is represented as a point.

Government Publication Date: May 25, 2023

National Priority List - Proposed:

[PROPOSED NPL](#)

Sites proposed by the United States Environmental Protection Agency (EPA), the state agency, or concerned citizens for addition to the National Priorities List (NPL) due to contamination by hazardous waste and identified by the EPA as a candidate for cleanup because it poses a risk to human health and/or the environment. Sites are represented by boundaries where available in the EPA Superfund Site Boundaries maintained by the Shared Enterprise Geodata and Services (SEGS). Site boundaries represent the footprint of a whole site, the sum of all of the Operable Units and the current understanding of the full extent of contamination; for Federal Facility sites, the total site polygon may be the Facility boundary. Where there is no polygon boundary data available for a given site, the site is represented as a point.

Government Publication Date: May 25, 2023

Deleted NPL:

[DELETED NPL](#)

Sites deleted from the United States Environmental Protection Agency (EPA)'s National Priorities List. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate. Sites are represented by boundaries where available in the EPA Superfund Site Boundaries maintained by the Shared Enterprise Geodata and Services (SEGS). Site boundaries represent the footprint of a whole site, the sum of all of the Operable Units and the current understanding of the full extent of contamination; for Federal Facility sites, the total site polygon may be the Facility boundary. Where there is no polygon boundary data available for a given site, the site is represented as a point.

Government Publication Date: May 25, 2023

SEMS List 8R Active Site Inventory:

[SEMS](#)

The U.S. Environmental Protection Agency's (EPA) Superfund Program has deployed the Superfund Enterprise Management System (SEMS), which integrates multiple legacy systems into a comprehensive tracking and reporting tool. This inventory contains active sites evaluated by the Superfund program that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The Active Site Inventory Report displays site and location information at active SEMS sites. An active site is one at which site assessment, removal, remedial, enforcement, cost recovery, or oversight activities are being planned or conducted. This data includes SEMS sites from the List 8R Active file as well as applicable sites from the SEMS GIS/REST file layer obtained from EPA's Facility Registry Service.

Government Publication Date: Jul 26, 2023

SEMS List 8R Archive Sites:

[SEMS ARCHIVE](#)

The U.S. Environmental Protection Agency's (EPA) Superfund Enterprise Management System (SEMS) Archived Site Inventory displays site and location information at sites archived from SEMS. An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time. This data includes sites from the List 8R Archived site file.

Government Publication Date: Jul 26, 2023

Inventory of Open Dumps, June 1985:

[ODI](#)

The Resource Conservation and Recovery Act (RCRA) provides for publication of an inventory of open dumps. The Act defines "open dumps" as facilities which do not comply with EPA's "Criteria for Classification of Solid Waste Disposal Facilities and Practices" (40 CFR 257).

Government Publication Date: Jun 1985

Comprehensive Environmental Response, Compensation and Liability Information System -

[CERCLIS](#)

CERCLIS:

Superfund is a program administered by the United States Environmental Protection Agency (EPA) to locate, investigate, and clean up the worst hazardous waste sites throughout the United States. CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The EPA administers the Superfund program in cooperation with individual states and tribal governments; this database is made available by the EPA.

Government Publication Date: Oct 25, 2013

EPA Report on the Status of Open Dumps on Indian Lands:

[IODI](#)

Public Law 103-399, The Indian Lands Open Dump Cleanup Act of 1994, enacted October 22, 1994, identified congressional concerns that solid waste open dump sites located on American Indian or Alaska Native (AI/AN) lands threaten the health and safety of residents of those lands and contiguous areas. The purpose of the Act is to identify the location of open dumps on Indian lands, assess the relative health and environment hazards posed by those sites, and provide financial and technical assistance to Indian tribal governments to close such dumps in compliance with Federal standards and regulations or standards promulgated by Indian Tribal governments or Alaska Native entities.

Government Publication Date: Dec 31, 1998

CERCLIS - No Further Remedial Action Planned:

[CERCLIS NFRAP](#)

An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time. The Archive designation means that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL). This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Government Publication Date: Oct 25, 2013

CERCLIS Liens:

[CERCLIS LIENS](#)

A Federal Superfund lien exists at any property where EPA has incurred Superfund costs to address contamination ("Superfund site") and has provided notice of liability to the property owner. A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. This database is made available by the United States Environmental Protection Agency (EPA). This database was provided by the United States Environmental Protection Agency (EPA). Refer to SEMS LIEN as the current data source for Superfund Liens.

Government Publication Date: Jan 30, 2014

RCRA CORRACTS-Corrective Action:

[RCRA CORRACTS](#)

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. At these sites, the Corrective Action Program ensures that cleanups occur. EPA and state regulators work with facilities and communities to design remedies based on the contamination, geology, and anticipated use unique to each site.

Government Publication Date: Jul 10, 2023

RCRA non-CORRACTS TSD Facilities:

[RCRA TSD](#)

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. This database includes Non-Corrective Action sites listed as treatment, storage and/or disposal facilities of hazardous waste as defined by RCRA.

Government Publication Date: Jul 10, 2023

RCRA Generator List:

[RCRA LQG](#)

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Large Quantity Generators (LQGs) generate 1,000 kilograms per month or more of hazardous waste or more than one kilogram per month of acutely hazardous waste.

Government Publication Date: Jul 10, 2023

RCRA Small Quantity Generators List:

[RCRA SQG](#)

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Small Quantity Generators (SQGs) generate more than 100 kilograms, but less than 1,000 kilograms, of hazardous waste per month.

Government Publication Date: Jul 10, 2023

RCRA Very Small Quantity Generators List:

[RCRA VSQG](#)

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Very Small Quantity Generators (VSQG) generate 100 kilograms or less per month of hazardous waste, or one kilogram or less per month of acutely hazardous waste. Additionally, VSQG may not accumulate more than 1,000 kilograms of hazardous waste at any time.

Government Publication Date: Jul 10, 2023

RCRA Non-Generators:

[RCRA NON GEN](#)

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Non-Generators do not presently generate hazardous waste.

Government Publication Date: Jul 10, 2023

RCRA Sites with Controls:

[RCRA CONTROLS](#)

List of Resource Conservation and Recovery Act (RCRA) facilities with institutional controls in place. RCRA gives the U.S. Environmental Protection Agency (EPA) the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances.

Government Publication Date: Jul 10, 2023

Federal Engineering Controls-ECs:

[FED ENG](#)

This list of Engineering controls (ECs) is provided by the United States Environmental Protection Agency (EPA). ECs encompass a variety of engineered and constructed physical barriers (e.g., soil capping, sub-surface venting systems, mitigation barriers, fences) to contain and/or prevent exposure to contamination on a property. The EC listing includes remedy component data from Superfund decision documents issued in fiscal years 1982-2021 for applicable sites on the final or deleted on the National Priorities List (NPL); and sites with a Superfund Alternative Approach (SAA) Agreement in place. The only sites included that are not on the NPL; proposed for NPL; or removed from proposed NPL, are those with an SAA Agreement in place.

Government Publication Date: Aug 23, 2023

Federal Institutional Controls- ICs:

[FED INST](#)

This list of Institutional controls (ICs) is provided by the United States Environmental Protection Agency (EPA). ICs are non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy. Although it is EPA's expectation that treatment or engineering controls will be used to address principal threat wastes and that groundwater will be returned to its beneficial use whenever practicable, ICs play an important role in site remedies because they reduce exposure to contamination by limiting land or resource use and guide human behavior at a site. The IC listing includes remedy component data from Superfund decision documents issued in fiscal years 1982-2021 for applicable sites on the final or deleted on the National Priorities List (NPL); and sites with a Superfund Alternative Approach (SAA) Agreement in place. The only sites included that are not on the NPL; proposed for NPL; or removed from proposed NPL, are those with an SAA Agreement in place.

Government Publication Date: Aug 23, 2023

Land Use Control Information System:

LUCIS

The LUCIS database is maintained by the U.S. Department of the Navy and contains information for former Base Realignment and Closure (BRAC) properties across the United States.

Government Publication Date: Sep 1, 2006

Institutional Control Boundaries at NPL sites:

NPL IC

Boundaries of Institutional Control areas at sites on the United States Environmental Protection Agency (EPA)'s National Priorities List, or Proposed or Deleted, made available by the EPA's Shared Enterprise Geodata and Services (SEGS). United States Environmental Protection Agency (EPA)'s National Priorities List of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Superfund program. Institutional controls are non-engineered instruments such as administrative and legal controls that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy.

Government Publication Date: May 25, 2023

Emergency Response Notification System:

ERNS 1982 TO 1986

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

Government Publication Date: 1982-1986

Emergency Response Notification System:

ERNS 1987 TO 1989

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

Government Publication Date: 1987-1989

Emergency Response Notification System:

ERNS

Database of oil and hazardous substances spill reports made available by the United States Coast Guard National Response Center (NRC). The NRC fields initial reports for pollution and railroad incidents and forwards that information to appropriate federal/state agencies for response. These data contain initial incident data that has not been validated or investigated by a federal/state response agency.

Government Publication Date: Apr 3, 2023

The Assessment, Cleanup and Redevelopment Exchange System (ACRES) Brownfield Database:

FED BROWNFIELDS

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties protects the environment, reduces blight, and takes development pressures off greenspaces and working lands. This data is provided by the United States Environmental Protection Agency (EPA) and includes Brownfield sites from the Cleanups in My Community (CIMC) web application.

Government Publication Date: Sep 13, 2022

FEMA Underground Storage Tank Listing:

FEMA UST

The Federal Emergency Management Agency (FEMA) of the Department of Homeland Security maintains a list of FEMA owned underground storage tanks.

Government Publication Date: Dec 31, 2017

Facility Response Plan:

FRP

This listing contains facilities that have submitted Facility Response Plans (FRPs) to the U.S. Environmental Protection Agency (EPA). Facilities that could reasonably be expected to cause "substantial harm" to the environment by discharging oil into or on navigable waters are required to prepare and submit FRPs. Harm is determined based on total oil storage capacity, secondary containment and age of tanks, oil transfer activities, history of discharges, proximity to a public drinking water intake or sensitive environments. This listing includes FRP facilities from an applicable EPA FOIA file and Homeland Infrastructure Foundation-Level Data (HIFLD) data file.

Government Publication Date: May 2, 2023

Delisted Facility Response Plans:

DELISTED FRP

Facilities that once appeared in - and have since been removed from - the list of facilities that have submitted Facility Response Plans (FRP) to EPA. Facilities that could reasonably be expected to cause "substantial harm" to the environment by discharging oil into or on navigable waters are required to prepare and submit Facility Response Plans (FRPs). Harm is determined based on total oil storage capacity, secondary containment and age of tanks, oil transfer activities, history of discharges, proximity to a public drinking water intake or sensitive environments.

Government Publication Date: May 2, 2023

Historical Gas Stations:

[HIST GAS STATIONS](#)

This historic directory of service stations is provided by the Cities Service Company. The directory includes Cities Service filling stations that were located throughout the United States in 1930.

Government Publication Date: Jul 1, 1930

Petroleum Refineries:

[REFN](#)

List of petroleum refineries from the U.S. Energy Information Administration (EIA) Refinery Capacity Report. Includes operating and idle petroleum refineries (including new refineries under construction) and refineries shut down during the previous year located in the 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, Guam, and other U.S. possessions. Survey locations adjusted using public data.

Government Publication Date: Sep 20, 2023

Petroleum Product and Crude Oil Rail Terminals:

[BULK TERMINAL](#)

List of petroleum product and crude oil rail terminals made available by the U.S. Energy Information Administration (EIA). Includes operable bulk petroleum product terminals located in the 50 States and the District of Columbia with a total bulk shell storage capacity of 50,000 barrels or more, and/or the ability to receive volumes from tanker, barge, or pipeline; also rail terminals handling the loading and unloading of crude oil that were active between 2017 and 2018. Petroleum product terminals comes from the EIA-815 Bulk Terminal and Blender Report, which includes working, shell in operation, and shell idle for several major product groupings. Survey locations adjusted using public data.

Government Publication Date: Jun 29, 2022

LIEN on Property:

[SEMS LIEN](#)

The U.S. Environmental Protection Agency's (EPA) Superfund Enterprise Management System (SEMS) provides Lien details on applicable properties, such as the Superfund lien on property activity, the lien property information, and the parties associated with the lien.

Government Publication Date: Jul 26, 2023

Superfund Decision Documents:

[SUPERFUND ROD](#)

This database contains a list of decision documents for Superfund sites. Decision documents serve to provide the reasoning for the choice of (or) changes to a Superfund Site cleanup plan. The decision documents include completed Records of Decision (ROD), ROD Amendments, Explanations of Significant Differences (ESD) for active and archived sites stored in the Superfund Enterprise Management System (SEMS), along with other associated memos and files. This information is maintained and made available by the U.S. Environmental Protection Agency.

Government Publication Date: May 25, 2023

Formerly Utilized Sites Remedial Action Program:

[DOE FUSRAP](#)

The U.S. Department of Energy (DOE) established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from the Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations. The DOE Office of Legacy Management (LM) established long-term surveillance and maintenance (LTS&M) requirements for remediated FUSRAP sites. DOE evaluates the final site conditions of a remediated site on the basis of risk for different future uses. DOE then confirms that LTS&M requirements will maintain protectiveness.

Government Publication Date: Mar 4, 2017

State

State Hazardous Waste Sites:

[SHWS](#)

The state of North Dakota does not maintain a State Hazardous Waste Sites (SHWS) list.

Government Publication Date:

Solid Waste Landfills/Special Use Landfills:

[SWF/LF](#)

The North Dakota Department of Health's Division of Waste Management publishes lists of waste facilities, including: Transfer Stations, Industrial Waste Landfills, Inert Waste Landfills, Municipal Solid Waste Landfills, Special Waste Landfills, and Solid Waste Facilities for Treatment/Disposal of Refined Petroleum Contaminated Soils.

Government Publication Date: Jul 11, 2023

Leaking Underground Storage Tank List:

[LUST](#)

Leaking Underground Storage Tank (LUST) Registry made available by the North Dakota Department of Health's Underground Storage Tank (UST) Program. The LUST registry includes any site which has had a reported release.

Government Publication Date: Aug 25, 2023

Delisted Leaking Storage Tanks:

DELISTED LST

This database contains a list of leaking storage tank sites that were removed from the North Dakota Department of Health.

Government Publication Date: Aug 25, 2023

Underground Storage Tank List:

UST

UST registry maintained by the North Dakota Department of Health's UST Program. Owners and/or operators of tanks regulated under the UST program are required to notify the Division and register their tanks. The UST list does not distinguish between Aboveground (AST) or Underground Storage Tank systems.

Government Publication Date: Aug 25, 2023

Registered Aboveground Storage Tanks:

AST

List of Aboveground Storage Tank (AST) sites registered with the North Dakota Insurance Department. All owners or operators of aboveground or underground petroleum storage tanks in North Dakota are required to register their tanks with the Insurance Department's Petroleum Tank Release Compensation Fund.

Government Publication Date: Aug 15, 2023

Delisted Storage Tanks:

DTNK

This database contains a list of storage tank sites that were removed from the North Dakota Department of Health's UST Program.

Government Publication Date: Aug 25, 2023

Institutional Controls:

INST

List of sites with institutional controls made available by the State of North Dakota Department of Environmental Quality.

Government Publication Date: Aug 25, 2023

Brownfields Sites in North Dakota:

BROWNFIELDS

List of Brownfield program sites made available by the North Dakota Department of Health's Division of Waste Management Brownfields Program. The concept of the Brownfields Program is to take contaminated or potentially contaminated, underdeveloped, unproductive property and convert it into productive real estate. Brownfield sites are defined as abandoned, idled or underused industrial or commercial properties whose redevelopment is complicated by real or perceived environmental contamination.

Government Publication Date: Oct 31, 2022

Tribal

Leaking Underground Storage Tanks on Tribal/Indian Lands:

INDIAN LUST

This list of leaking underground storage tanks (LUSTs) on Tribal/Indian Lands in Region 8, which includes North Dakota, is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Apr 20, 2023

Underground Storage Tanks on Tribal/Indian Lands:

INDIAN UST

This list of underground storage tanks (USTs) on Tribal/Indian Lands in Region 8, which includes North Dakota, is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Apr 20, 2023

Delisted Tribal Leaking Storage Tanks:

DELISTED INDIAN LST

Leaking Underground Storage Tank (LUST) facilities which once appeared on - and have since been removed from - the Regional Tribal/Indian LUST lists made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Apr 26, 2023

Delisted Tribal Underground Storage Tanks:

DELISTED INDIAN UST

Underground Storage Tank (UST) facilities which once appeared on - and have since been removed from - the Regional Tribal/Indian UST lists made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Apr 26, 2023

County

No County standard environmental record sources available for this State.

Additional Environmental Record Sources

Federal

Facility Registry Service/Facility Index:

FINDS/FRS

The Facility Registry Service (FRS) is a centrally managed database that identifies facilities, sites, or places subject to environmental regulations or of environmental interest. FRS creates high-quality, accurate, and authoritative facility identification records through rigorous verification and management procedures that incorporate information from program national systems, state master facility records, and data collected from EPA's Central Data Exchange registrations and data management personnel. This list is made available by the U.S. Environmental Protection Agency (EPA).

Government Publication Date: Mar 2, 2023

Toxics Release Inventory (TRI) Program:

TRIS

The U.S. Environmental Protection Agency's Toxics Release Inventory (TRI) is a database containing data on disposal or other releases of toxic chemicals from U.S. facilities and information about how facilities manage those chemicals through recycling, energy recovery, and treatment. There are currently 770 individually listed chemicals and 33 chemical categories covered by the TRI Program. Facilities that manufacture, process or otherwise use these chemicals in amounts above established levels must submit annual reporting forms for each chemical. Note that the TRI chemical list does not include all toxic chemicals used in the U.S. One of TRI's primary purposes is to inform communities about toxic chemical releases to the environment.

Government Publication Date: Oct 19, 2022

PFOA/PFOS Contaminated Sites:

PFAS NPL

This list of Superfund Sites with Per- and Polyfluoroalkyl Substances (PFAS) detections is made available by the U.S. Environmental Protection Agency (EPA) in their PFAS Analytic Tools data, previously the list was obtained by EPA FOIA requests. EPA's Office of Land and Emergency Management and EPA Regional Offices maintain what is known about site investigations, contamination, and remedial actions under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) where PFAS is present in the environment. Limitations: Detections of PFAS at National Priorities List (NPL) sites do not mean that people are at risk from PFAS, are exposed to PFAS, or that the site is the source of the PFAS. The information in the Superfund NPL and Superfund Alternative Agreement (SAA) PFAS detection site list is years old and may not be accurate today. Site information such as site name, site ID, and location has been confirmed for accuracy; however, PFAS-related information such as media sampled, drinking water being above the health advisory, or mitigation efforts has not been verified. For Federal Facilities data, the other Federal agencies (OFA) are the lead agency for their data and provided them to EPA.

Government Publication Date: Sep 14, 2023

Federal Agency Locations with Known or Suspected PFAS Detections:

PFAS FED SITES

List of Federal agency locations with known or suspected detections of Per- and Polyfluoroalkyl Substances (PFAS), made available by the U.S. Environmental Protection Agency (EPA) in their PFAS Analytic Tools data. EPA outlines that these data are gathered from several federal entities, such as the Federal Superfund program, Department of Defense (DOD), National Aeronautics and Space Administration, Department of Transportation, and Department of Energy. The dates this data was extracted for the PFAS Analytic Tools range from March 2022 to April 2023. Sites on this list do not necessarily reflect the source/s of PFAS contamination and detections do not indicate level of risk or human exposure at the site. Agricultural notifications in this data are limited to DOD sites only. At this time, the EPA is aware that this list is not comprehensive of all Federal agencies.

Government Publication Date: Apr 24, 2023

SSEHRI PFAS Contamination Sites:

PFAS SSEHRI

This PFAS Contamination Site Tracker database is compiled by the Social Science Environmental Health Research Institute (SSEHRI) at Northeastern University. According to the SSEHRI, the database records qualitative and quantitative data from each known site of PFAS contamination, including timeline of discovery, sources, levels, health impacts, community response, and government response. The goal of this database is to compile information and support public understanding of the rapidly unfolding issue of PFAS contamination. All data presented was extracted from government websites, news articles, or publicly available documents, and this is cited in the tracker. Locations for the Known PFAS Contamination Sites are sourced from the PFAS Sites and Community Resources Map, credited to the Northeastern University's PFAS Project Lab, Silent Spring Institute, and the PFAS-REACH team. Disclaimer: The source conveys the data undergoes regular updates as new information becomes available, some sites may be missing and/or contain information that is incorrect or outdated, as well as their information represents all contamination sites SSEHRI is aware of, not all possible contamination sites. This data is not intended to be used for legal purposes. Access the following source link for the most current information: <https://pfasproject.com/pfas-sites-and-community-resources/>

Government Publication Date: Oct 9, 2022

National Response Center PFAS Spills:

ERNS PFAS

This Per- and Poly-Fluoroalkyl Substances (PFAS) Spills dataset is made available via the U.S. Environmental Protection Agency's (EPA) PFAS Analytic Tools. The National Response Center (NRC), operated by the U.S. Coast Guard, is the designated federal point of contact for reporting all oil, chemical, and other discharges into the environment, for the United States and its territories. This dataset contains NRC spill information from 1990 to the present that is restricted to records associated with PFAS and PFAS-containing materials. Incidents are filtered to include only records with a "Material Involved" or "Incident Description" related to Aqueous Film Forming Foam (AFFF). The keywords used to filter the data included "AFFF," "Fire Fighting Foam," "Aqueous Film Forming Foam," "Fire Suppressant Foam," "PFAS," "PERFL," "PFOA," "PFOS," and "Genx." Limitations: The data from the NRC website contains initial incident data that has not been validated or investigated by a federal/state response agency. Keyword searches may misidentify some incident reports that do not contain PFAS. This dataset should also not be considered to be exhaustive of all PFAS spills/release incidents.

Government Publication Date: Jun 17, 2023

PFAS NPDES Discharge Monitoring:

[PFAS NPDES](#)

This list of National Pollutant Discharge Elimination System (NPDES) permitted facilities with required monitoring for Per- and Polyfluoroalkyl (PFAS) Substances is made available via the U.S. Environmental Protection Agency (EPA)'s PFAS Analytic Tools. Any point-source wastewater discharger to waters of the United States must have a NPDES permit, which defines a set of parameters for pollutants and monitoring to ensure that the discharge does not degrade water quality or impair human health. This list includes NPDES permitted facilities associated with permits that monitor for Per- and Polyfluoroalkyl Substances (PFAS), limited to the years 2007 - present. EPA further advises the following regarding these data: currently, fewer than half of states have required PFAS monitoring for at least one of their permittees, and fewer states have established PFAS effluent limits for permittees. For states that may have required monitoring, some reporting and data transfer issues may exist on a state-by-state basis.

Government Publication Date: May 1, 2023

Perfluorinated Alkyl Substances (PFAS) from Toxic Release Inventory:

[PFAS TRI](#)

List of Toxics Release Inventory (TRI) facilities at which the reported chemical is a per- or polyfluoroalkyl (PFAS) substance included in the U.S. Environmental Protection Agency's (EPA) consolidated PFAS Master List of PFAS Substances. Encompasses Toxics Release Inventory records included in the EPA PFAS Analytic Tools. The EPA's TRI database currently tracks information on disposal or releases of 770 individually listed toxic chemicals and 33 chemical categories from thousands of U.S. facilities and details about how facilities manage those chemicals through recycling, energy recovery, and treatment.

Government Publication Date: Oct 19, 2022

Perfluorinated Alkyl Substances (PFAS) Water Quality:

[PFAS WATER](#)

The Water Quality Portal (WQP) is a cooperative service sponsored by the United States Geological Survey (USGS), the Environmental Protection Agency (EPA), and the National Water Quality Monitoring Council (NWQMC). This listing includes records from the Water Quality Portal where the characteristic (environmental measurement) is in the Environmental Protection Agency (EPA)'s consolidated Master List of PFAS Substances.

Government Publication Date: Jul 20, 2020

PFAS TSCA Manufacture and Import Facilities:

[PFAS TSCA](#)

The U.S. Environmental Protection Agency (EPA) issued the Chemical Data Reporting (CDR) Rule under the Toxic Substances Control Act (TSCA) and requires chemical manufacturers and facilities that manufacture or import chemical substances to report data to EPA. This list is specific only to TSCA Manufacture and Import Facilities with reported per- and poly-fluoroalkyl (PFAS) substances. Data file is sourced from EPA's PFAS Analytic Tools TSCA dataset which includes CDR/Inventory Update Reporting data from 1998 up to 2020. Disclaimer: This data file includes production and importation data for chemicals identified in EPA's CompTox Chemicals Dashboard list of PFAS without explicit structures and list of PFAS structures in DSSTox. Note that some regulations have specific chemical structure requirements that define PFAS differently than the lists in EPA's CompTox Chemicals Dashboard. Reporting information on manufactured or imported chemical substance amounts should not be compared between facilities, as some companies claim Chemical Data Reporting Rule data fields for PFAS information as Confidential Business Information.

Government Publication Date: Jan 5, 2023

PFAS Waste Transfers from RCRA e-Manifest :

[PFAS E-MANIFEST](#)

This Per- and Poly-Fluoroalkyl Substances (PFAS) Waste Transfers dataset is made available via the U.S. Environmental Protection Agency's (EPA) PFAS Analytic Tools. Every shipment of hazardous waste in the U.S. must be accompanied by a shipment manifest, which is a critical component of the cradle-to-grave tracking of wastes mandated by the Resource Conservation and Recovery Act (RCRA). According to the EPA, currently no Federal Waste Code exists for any PFAS compounds. To work around the lack of PFAS waste codes in the RCRA database, EPA developed the PFAS Transfers dataset by mining e-Manifest records containing at least one of these common PFAS keywords: • PFAS • PFOA • PFOS • PERFL • AFFF • GENX • GEN-X (plus the Vermont state-specific waste codes). Limitations: Amount or concentration of PFAS being transferred cannot be determined from the manifest information. Keyword searches may misidentify some manifest records that do not contain PFAS. This dataset should also not be considered to be exhaustive of all PFAS waste transfers.

Government Publication Date: Apr 9, 2023

PFAS Industry Sectors:

[PFAS IND](#)

This Per- and Poly-Fluoroalkyl Substances (PFAS) Industry Sectors dataset is made available via the U.S. Environmental Protection Agency's (EPA) PFAS Analytic Tools. The EPA developed the dataset from various sources that show which industries may be handling PFAS including: EPA's Enforcement and Compliance History Online (ECHO) records restricted to potential PFAS-handling industry sectors; ECHO records for Fire Training Sites identified where fire-fighting foam may have been used in training exercises; and 14 CFR Part 139 Airports compiled from historic and current records from the FAA Airport Data and Information Portal. Since July 2006, all certificated Part 139 Airports are required to have fire-fighting foam onsite that meet certain military specifications, which to date have been fluorinated (Aqueous Film Forming Foam). Limitations: Inclusion in this dataset does not indicate that PFAS are being manufactured, processed, used, or released by the facility. Listed facilities potentially handle PFAS based on their industrial profile, but are unconfirmed by the EPA. Keyword searches in ECHO for Fire Training sites may misidentify some facilities and should not be considered to be an exhaustive list of fire training facilities in the U.S.

Government Publication Date: Apr 16, 2023

Hazardous Materials Information Reporting System:

HMIRS

US DOT - Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) Incidents Reports Database taken from Hazmat Intelligence Portal, U.S. Department of Transportation.

Government Publication Date: Sep 1, 2020

National Clandestine Drug Labs:

NCDL

The U.S. Department of Justice ("the Department"), Drug Enforcement Administration (DEA), provides this data as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy.

Government Publication Date: Jul 26, 2023

Toxic Substances Control Act:

TSCA

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.

The CDR enables EPA to collect and publish information on the manufacturing, processing, and use of commercial chemical substances and mixtures (referred to hereafter as chemical substances) on the TSCA Chemical Substance Inventory (TSCA Inventory). This includes current information on chemical substance production volumes, manufacturing sites, and how the chemical substances are used. This information helps the Agency determine whether people or the environment are potentially exposed to reported chemical substances. EPA publishes submitted CDR data that is not Confidential Business Information (CBI).

Government Publication Date: Apr 11, 2019

Hist TSCA:

HIST TSCA

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.

The 2006 IUR data summary report includes information about chemicals manufactured or imported in quantities of 25,000 pounds or more at a single site during calendar year 2005. In addition to the basic manufacturing information collected in previous reporting cycles, the 2006 cycle is the first time EPA collected information to characterize exposure during manufacturing, processing and use of organic chemicals. The 2006 cycle also is the first time manufacturers of inorganic chemicals were required to report basic manufacturing information.

Government Publication Date: Dec 31, 2006

FTTS Administrative Case Listing:

FTTS ADMIN

An administrative case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.

Government Publication Date: Jan 19, 2007

FTTS Inspection Case Listing:

FTTS INSP

An inspection case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.

Government Publication Date: Jan 19, 2007

Potentially Responsible Parties List:

PRP

Early in the site cleanup process, the U.S. Environmental Protection Agency (EPA) conducts a search to find the Potentially Responsible Parties (PRPs). The EPA looks for evidence to determine liability by matching wastes found at the site with parties that may have contributed wastes to the site. This listing contains PRPs, Noticed Parties, at sites in the EPA's Superfund Enterprise Management System (SEMS).

Government Publication Date: Aug 23, 2023

State Coalition for Remediation of Drycleaners Listing:

[SCRD DRYCLEANER](#)

The State Coalition for Remediation of Drycleaners (SCRD) was established in 1998, with support from the U.S. Environmental Protection Agency (EPA) Office of Superfund Remediation and Technology Innovation. Coalition members are states with mandated programs and funding for drycleaner site remediation. Current members are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin. Since 2017, the SCRCD no longer maintains this data, refer to applicable state source data where available.

Government Publication Date: Nov 08, 2017

Integrated Compliance Information System (ICIS):

[ICIS](#)

The Integrated Compliance Information System (ICIS) database contains integrated enforcement and compliance information across most of U.S. Environmental Protection Agency's (EPA) programs. The vision for ICIS is to replace EPA's independent databases that contain enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions and a subset of the Permit Compliance System (PCS), which supports the National Pollutant Discharge Elimination System (NPDES). This information is maintained by the EPA Headquarters and at the Regional offices. A future release of ICIS will completely replace PCS and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities that support compliance and enforcement programs, including incident tracking, compliance assistance, and compliance monitoring.

Government Publication Date: Jan 21, 2023

Drycleaner Facilities:

[FED DRYCLEANERS](#)

A list of drycleaner facilities from Enforcement and Compliance History Online (ECHO) data as made available by the U.S. Environmental Protection Agency (EPA), sourced from the ECHO Exporter file. The EPA tracks facilities that possess NAIC and SIC codes that classify businesses as drycleaner establishments.

Government Publication Date: Apr 15, 2023

Delisted Drycleaner Facilities:

[DELISTED FED DRY](#)

List of sites removed from the list of Drycleaner Facilities (sites in the EPA's Integrated Compliance Information System (ICIS) with NAIC or SIC codes identifying the business as a drycleaner establishment).

Government Publication Date: Apr 15, 2023

Formerly Used Defense Sites:

[FUDS](#)

Formerly Used Defense Sites (FUDS) are properties that were formerly owned by, leased to, or otherwise possessed by and under the jurisdiction of the Secretary of Defense prior to October 1986, where the Department of Defense (DOD) is responsible for an environmental restoration. The FUDS Annual Report to Congress (ARC) is published by the U.S. Army Corps of Engineers (USACE). This data is compiled from the USACE's Geospatial FUDS data layers and Homeland Infrastructure Foundation-Level Data (HIFLD) FUDS dataset.

Government Publication Date: Jul 12, 2022

FUDS Munitions Response Sites:

[FUDS MRS](#)

Boundaries of Munitions Response Sites (MRS), published with the Formerly Used Defense Sites (FUDS) Annual Report to Congress (ARC) by the U.S. Army Corps of Engineers (USACE). An MRS is a discrete location within a Munitions response area (MRA) that is known to require a munitions response. An MRA means any area on a defense site that is known or suspected to contain unexploded ordnance (UXO), discarded military munitions (DMM), or munitions constituents (MC). This data is compiled from the USACE's Geospatial MRS data layers and Homeland Infrastructure Foundation-Level Data (HIFLD) MRS dataset.

Government Publication Date: Jul 12, 2022

Former Military Nike Missile Sites:

[FORMER NIKE](#)

This information was taken from report DRXTH-AS-IA-83A016 (Historical Overview of the Nike Missile System, 12/1984) which was performed by Environmental Science and Engineering, Inc. for the U.S. Army Toxic and Hazardous Materials Agency Assessment Division. The Nike system was deployed between 1954 and the mid-1970's. Among the substances used or stored on Nike sites were liquid missile fuel (JP-4); starter fluids (UDKH, aniline, and furfuryl alcohol); oxidizer (IRFNA); hydrocarbons (motor oil, hydraulic fluid, diesel fuel, gasoline, heating oil); solvents (carbon tetrachloride, trichloroethylene, trichloroethane, stoddard solvent); and battery electrolyte. The quantities of material a disposed of and procedures for disposal are not documented in published reports. Virtually all information concerning the potential for contamination at Nike sites is confined to personnel who were assigned to Nike sites. During deactivation most hardware was shipped to depot-level supply points. There were reportedly instances where excess materials were disposed of on or near the site itself at closure. There was reportedly no routine site decontamination.

Government Publication Date: Dec 2, 1984

PHMSA Pipeline Safety Flagged Incidents:

[PIPELINE INCIDENT](#)

A list of flagged pipeline incidents made available by the U.S. Department of Transportation (US DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA). PHMSA regulations require incident and accident reports for five different pipeline system types.

Government Publication Date: Dec 30, 2022

Material Licensing Tracking System (MLTS):

[MLTS](#)

A list of sites that store radioactive material subject to the Nuclear Regulatory Commission (NRC) licensing requirements. This list is maintained by the NRC. As of September 2016, the NRC no longer releases location information for sites. Site locations were last received in July 2016.

Government Publication Date: May 11, 2021

Historic Material Licensing Tracking System (MLTS) sites:

[HIST MLTS](#)

A historic list of sites that have inactive licenses and/or removed from the Material Licensing Tracking System (MLTS). In some cases, a site is removed from the MLTS when the state becomes an "Agreement State". An Agreement State is a State that has signed an agreement with the Nuclear Regulatory Commission (NRC) authorizing the State to regulate certain uses of radioactive materials within the State.

Government Publication Date: Jan 31, 2010

Mines Master Index File:

[MINES](#)

The Master Index File (MIF) is provided by the United States Department of Labor, Mine Safety and Health Administration (MSHA). This file, which was originally created in the 1970's, contained many Mine-IDs that were invalid. MSHA removes invalid IDs from the MIF upon discovery. MSHA applicable data includes the following: all Coal and Metal/Non-Metal mines under MSHA's jurisdiction since 1/1/1970; mine addresses for all mines in the database except for Abandoned mines prior to 1998 from MSHA's legacy system (addresses may or may not correspond with the physical location of the mine itself); violations that have been assessed penalties as a result of MSHA inspections beginning on 1/1/2000; and violations issued as a result of MSHA inspections conducted beginning on 1/1/2000.

Government Publication Date: May 1, 2023

Surface Mining Control and Reclamation Act Sites:

[SMCRA](#)

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by the Office of Surface Mining Reclamation and Enforcement (OSMRE) to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). This inventory contains information on the type and extent of Abandoned Mine Land (AML) impacts, as well as information on the cost associated with the reclamation of those problems. The data is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed. Disclaimer: Per the OSMRE, States and tribes who enter their data into eAMLIS (AML Inventory System) may truncate their latitude and longitude so the precise location of usually dangerous AMLs is not revealed in an effort to protect the public from searching for these AMLs, most of which are on private property. If more precise location information is needed, please contact the applicable state/tribe of interest.

Government Publication Date: Jun 13, 2023

Mineral Resource Data System:

[MRDS](#)

The Mineral Resource Data System (MRDS) is a collection of reports describing metallic and nonmetallic mineral resources throughout the world. Included are deposit name, location, commodity, deposit description, geologic characteristics, production, reserves, resources, and references. This database contains the records previously provided in the Mineral Resource Data System (MRDS) of USGS and the Mineral Availability System/Mineral Industry Locator System (MAS/MILS) originated in the U.S. Bureau of Mines, which is now part of USGS. The USGS has ceased systematic updates of the MRDS database with their focus more recently on deposits of critical minerals while providing a well-documented baseline of historical mine locations from USGS topographic maps.

Government Publication Date: Mar 15, 2016

DOE Legacy Management Sites:

[LM SITES](#)

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) currently manages radioactive and chemical waste, environmental contamination, and hazardous material at over 100 sites across the U.S. The LM manages sites with diverse regulatory drivers (statutes or programs that direct cleanup and management requirements at DOE sites) or as part of internal DOE or congressionally-recognized programs, such as but not limited to: Formerly Utilized Sites Remedial Action Program (FUSRAP), Uranium Mill Tailings Radiation Control Act (UMTRCA Title I, Title II), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA), Decontamination and Decommissioning (D&D), Nuclear Waste Policy Act (NWPA). This site listing includes data exported from the DOE Office of LM's Geospatial Environmental Mapping System (GEMS). GEMS Data disclaimer: The DOE Office of LM makes no representation or warranty, expressed or implied, regarding the use, accuracy, availability, or completeness of the data presented herein.

Government Publication Date: May 25, 2023

Alternative Fueling Stations:

[ALT FUELS](#)

This list of alternative fueling stations is sourced from the Alternative Fuels Data Center (AFDC). The U.S. Department of Energy's Office of Energy Efficiency & Renewable Energy launched the AFDC in 1991 as a repository for alternative fuel vehicle performance data, which provides a wealth of information and data on alternative and renewable fuels, advanced vehicles, fuel-saving strategies, and emerging transportation technologies. The data includes Biodiesel (B20 and above), Compressed Natural Gas (CNG), Electric, Ethanol (E85), Hydrogen, Liquefied Natural Gas (LNG), Propane (LPG), and Renewable Diesel (R20 and above) fuel type locations.

Government Publication Date: Aug 30, 2023

Superfunds Consent Decrees:

CONSENT DECREES

This list of Superfund consent decrees is provided by the Department of Justice, Environment & Natural Resources Division (ENRD) through a Freedom of Information Act (FOIA) applicable file. This listing includes Consent Decrees for CERCLA or Superfund Sites filed and/or as proposed within the ENRD's Case Management System (CMS) since 2010. CMS may not reflect the latest developments in a case nor can the agency guarantee the accuracy of the data. ENRD Disclaimer: Congress excluded three discrete categories of law enforcement and national security records from the requirements of the FOIA; response is limited to those records that are subject to the requirements of the FOIA; however, this should not be taken as an indication that excluded records do, or do not, exist.

Government Publication Date: Apr 19, 2023

Air Facility System:

AFS

This EPA retired Air Facility System (AFS) dataset contains emissions, compliance, and enforcement data on stationary sources of air pollution. Regulated sources cover a wide spectrum; from large industrial facilities to relatively small operations such as dry cleaners. AFS does not contain data on facilities that are solely asbestos demolition and/or renovation contractors, or landfills. ECHO Clean Air Act data from AFS are frozen and reflect data as of October 17, 2014; the EPA retired this system for Clean Air Act stationary sources and transitioned to ICIS-Air.

Government Publication Date: Oct 17, 2014

Registered Pesticide Establishments:

SSTS

This national list of active EPA-registered foreign and domestic pesticide and/or device-producing establishments is based on data from the Section Seven Tracking System (SSTS). The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Section 7 requires that each producing establishment must place its EPA establishment number on the label or immediate container of each pesticide, active ingredient or device produced. An EPA establishment number on a pesticide product label identifies the EPA registered location where the product was produced. The list of establishments is made available by the U.S. Environmental Protection Agency (EPA).

Government Publication Date: Mar 1, 2023

Polychlorinated Biphenyl (PCB) Transformers:

PCBT

Locations of Transformers Containing Polychlorinated Biphenyls (PCBs) registered with the United States Environmental Protection Agency. PCB transformer owners must register their transformer(s) with EPA. Although not required, PCB transformer owners who have removed and properly disposed of a registered PCB transformer may notify EPA to have their PCB transformer de-registered. Data made available by EPA.

Government Publication Date: Oct 15, 2019

Polychlorinated Biphenyl (PCB) Notifiers:

PCB

Facilities included in the national list of facilities that have notified the United States Environmental Protection Agency (EPA) of Polychlorinated Biphenyl (PCB) activities. Any company or person storing, transporting or disposing of PCBs or conducting PCB research and development must notify the EPA and receive an identification number.

Government Publication Date: Mar 20, 2023

State

Per- and Polyfluoroalkyl Substances (PFAS):

PFAS

List of general environmental incidents reported to the North Dakota Department of Environmental Quality (NDEQ) where one or more of the materials involved in the incident are in the PFAS Master List of PFAS Substances made available by the Environmental Protection Agency (US EPA).

Government Publication Date: Jun 5, 2023

Spills Database:

SPILLS

List of Environmental Incidents and Oil/Gas Spills from the North Dakota Unified Spill Reporting System.

Government Publication Date: Jun 5, 2023

Historical Spills Database:

HIST SPILLS

List of historical release/spill events made available by the North Dakota Department of Health's Environmental Health Section.

Government Publication Date: Jul 1, 2014

Oilfield Environmental Incidents - Historical:

HIST OGW SPILLS

A list of oilfield environmental incidents reported to the North Dakota Department of Environmental Quality (DEQ) by the Department of Mineral Resources' Oil and Gas Division whenever an oilfield environmental incident report was filed from 1975 to 2020.

Government Publication Date: Dec 31, 2020

Listing of Meth Labs in North Dakota:

CDL

Meth labs reported to the North Dakota State and Local Intelligence Center (NDSLIC) dating back to 2004.

Government Publication Date: Jan 12, 2022

Underground Injection Control Wells:

UIC

The Underground Injection Control (UIC) Program of the North Dakota Department of Environmental Quality Groundwater Division defines an injection well as any bored, drilled or a driven shaft or a dug hole, where the depth is greater than the largest surface dimension that is used to discharge fluids underground. A drainfield is considered to be a horizontally placed injection system, and some drainfields are covered under the UIC Program.

Government Publication Date: Aug 25, 2023

Dry Cleaning Facilities:

DRYCLEANERS

This list of dry cleaner facilities is provided by the North Dakota Department of Environmental Quality's (ND DEQ) Division of Air Quality and includes sites from the Combined Environmental Reporting Information System – ND (CERIS-ND).

Government Publication Date: Sep 7, 2023

Delisted Drycleaners:

DELISTED DRYCLEANERS

List of sites removed from the permitted drycleaner facilities made available by the North Dakota Department of Health.

Government Publication Date: Sep 7, 2023

Air Permits:

AIR PERMITS

List of air permits from Combined Environmental Regulatory Information System - North Dakota (CERCIS-ND) made available by the North Dakota Environmental Quality Air Quality Program. Includes violation and enforcement actions.

Government Publication Date: Jun 20, 2023

Feedlots:

FEEDLOTS

The North Dakota Department of Agriculture provides this listing of cattle feeders.

Government Publication Date: Apr 9, 2013

Tribal

No Tribal additional environmental record sources available for this State.

County

No County additional environmental record sources available for this State.

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries. All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and are included as reference.

Appendix D: Cultural Resources Coordination



October 21, 2025

Melissa Jenny
Environmental Protection Specialist
FAA Dakota-Minnesota Airports District Office

ND SHPO Ref.: 23-5373 Casselton Robert Miller Regional Airport, Cass County. Casselton, North Dakota, Runway Relocation in portions of [T139N R52W Sections 13, 14, 23 & 24]

Dear Melissa,

We reviewed ND SHPO Ref.: 23-5373 Casselton Robert Miller Regional Airport, Cass County. Casselton, North Dakota, Runway Relocation in portions of [T139N R52W Sections 13, 14, 23 & 24] as submitted to our office on October 17, 2025. We continue to concur with a determination of "No Historic Properties Affected" for this project provided it takes place in the location and in the manner described in the documentation and provided all borrow comes from an approved source.

Thank you for the opportunity to review this project. Please include the ND SHPO Reference number listed above in further correspondence for this specific project. If you have any questions please contact Lisa Steckler, Historic Preservation Specialist at (701) 328-3577 or lsteckler@nd.gov

Sincerely,

for William D. Peterson, PhD
State Historic Preservation Officer
(North Dakota)

23-5373



U.S. Department
of Transportation
**Federal Aviation
Administration**

Dakota-Minnesota
Airports District Office

6020 28th Avenue South, Suite 102
Minneapolis, MN 55450

2301 University Drive, Building 23B
Bismarck, ND 58504

October 17, 2025

William D. Peterson, PhD
State Historic Preservation Officer
North Dakota State Historic Preservation Office
State Historical Society of North Dakota
North Dakota Heritage Center
612 East Boulevard Avenue
Bismarck ND 58505-0830

Re: ND SHPO Ref.: 23-5373
Casselton Regional Airport
Cass County, Casselton, North Dakota
Runway Relocation

The Federal Aviation Administration (FAA) is completing an environmental review for a proposed runway shift and extension project at the Casselton Regional Airport. The ND SHPO concurred with FAA's Section 106 No Historic Properties Affected determination for the project on 3/16/2023, and again on 10/4/2024 after reviewing some project revisions. The project has been modified again, at the request of the local Township, to realign some roadways around the proposed extended runway end. These changes have expanded the project footprint outside of surveyed areas.

A Class III Cultural Resource Inventory was conducted at the Airport by Juniper Environmental Consulting, along with Tribal Cultural Specialists (TCS) representing the Sisseton Wahpeton Oyate and Spirit Lake Sioux Tribes. There were no new cultural resources recorded in the inventoried block and no tribal resources were encountered.

The FAA is pursuing additional consultation as the lead Federal Agency on the above-mentioned project and has determined that a Section 106 finding of *No Historic Properties Affected* is applicable for the project, to include the additional extent outside of the initial inventory block which is terrain that has been disturbed by cultivation and development projects. The FAA respectfully requests the North Dakota State Historic Preservation Office to provide written concurrence with the Section 106 determination of *No Historic Properties Affected* specifically for the above referenced undertaking at Casselton Regional Airport.

The FAA has determined that a Section 106 finding of *No Historic Properties Affected* remains applicable for this project including for the additional area outside of the initial inventory block, which is terrain that has been disturbed by cultivation and development projects. The FAA respectfully requests the ND SHPO provide written concurrence with this updated Section 106 determination of *No Historic Properties Affected* specifically for the above referenced undertaking at Casselton Regional Airport.

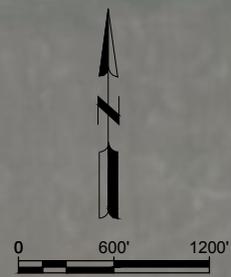
The FAA respectfully requests the North Dakota State Historic Preservation Office provide written concurrence with this Section 106 finding. If you have any questions, please contact me at melissa.m.jenny@faa.gov.

Sincerely,

Melissa Jenny
Environmental Protection Specialist

Enclosures: Updated project figure, and figure SHPO approved on 10/4/24 for comparison

1. Acquire approximately 250 acres in fee-simple land, and 3 acres in avigation easement.
2. Release existing avigation easements Northwest of ND Hwy 18 outside of new Runway 13 RPZ.
3. Design and build new 5,500 feet long by 75 feet wide Runway 13/31.
4. Decommission existing Runway 13/31 and convert approximately 3,380 feet to 35-foot-wide parallel taxiway.
5. Design and build remaining full parallel 35-foot-wide taxiway and associated connector taxiways.
6. Install new Medium-intensity Runway Lights (MIRLs).
7. Install new Precision Approach path Indicator (PAPI) for both Runway ends.
8. Close 156th Ave and realign 39th Street SE.
9. Install new Medium-intensity Taxiway Lights (MITLs).
10. Establish new GPS-based procedures of the new Runway 13/31.
11. Near-term apron development area.
12. Long-term hangar development area.

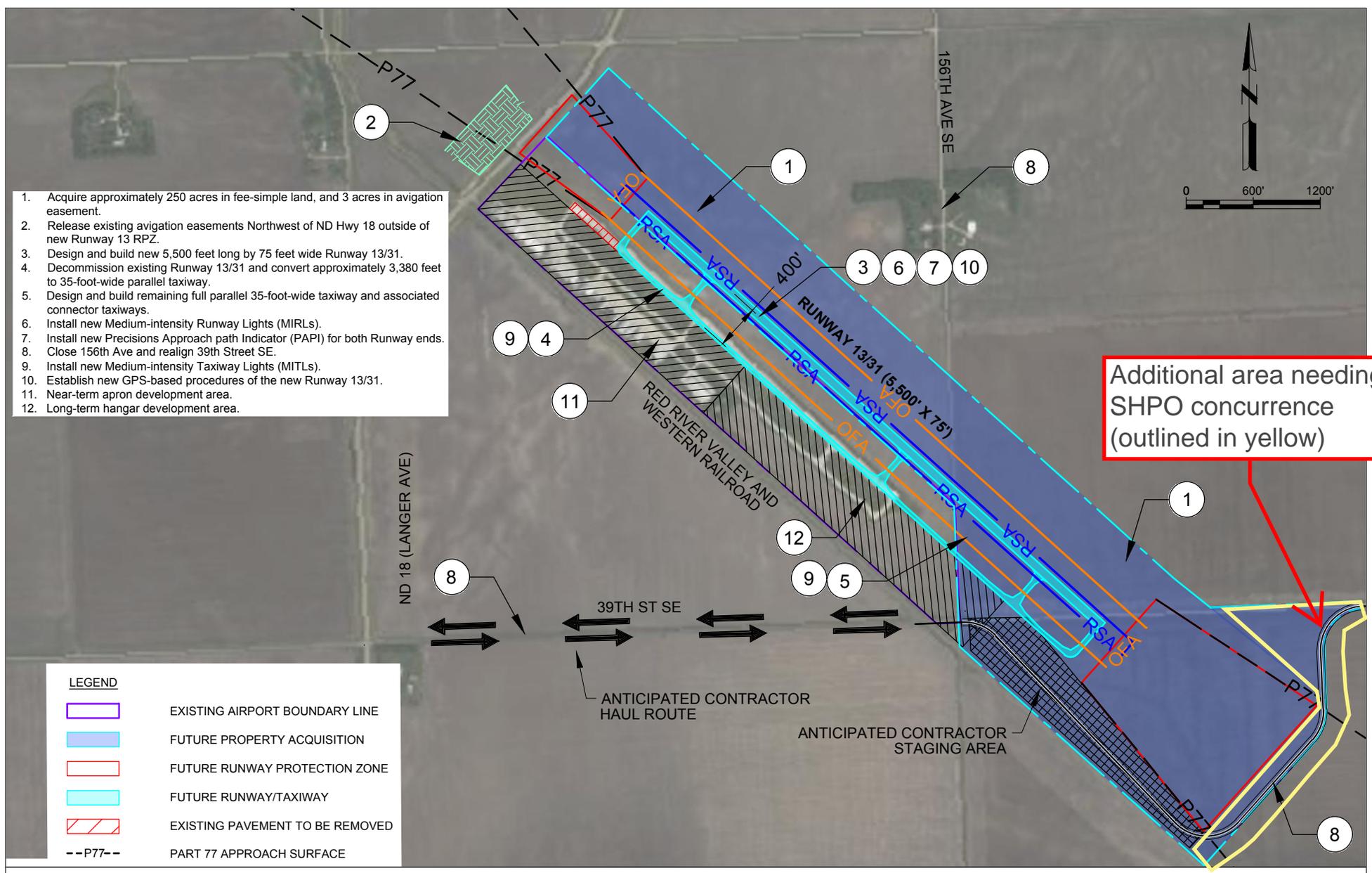


Additional area needing SHPO concurrence (outlined in yellow)

LEGEND	
	EXISTING AIRPORT BOUNDARY LINE
	FUTURE PROPERTY ACQUISITION
	FUTURE RUNWAY PROTECTION ZONE
	FUTURE RUNWAY/TAXIWAY
	EXISTING PAVEMENT TO BE REMOVED
	PART 77 APPROACH SURFACE

ANTICIPATED CONTRACTOR HAUL ROUTE

ANTICIPATED CONTRACTOR STAGING AREA



CASSELTON ROBERT MILLER
REGIONAL AIRPORT
Casselton, North Dakota

RELOCATE RUNWAY 13/31
PREFERRED ALTERNATIVE
ULTIMATE PHASE: 5,500 FOOT RUNWAY



FIGURE 2-9

10/8/2025 12:56:01 PM X:\4268800\220791.02\TECH\CAD\20250619-PROPOSEDPROJECT.DWG

4266800-220791.02
JUNE 2025



- Relocated Roadway
- Original Study Area
- Proposed Land Acquisition

0 0.13 0.25 0.5 Miles



Casselton Robert Miller Regional Airport



February 27, 2023

Casey Buechler
Federal Aviation Administration
Dakota-Minnesota Airports District Office
2301 University Drive, Building 23B
Bismarck, ND 58504

ND SHPO Ref.: 23-5373 “Casselton Regional Airport: Class III Cultural Resource Inventory in Cass County, North Dakota” in portions of [T139N R52W Sections 13, 14, 23 & 24] Juniper 787

Dear Casey,

We reviewed ND SHPO Ref.: 23-5373 “Casselton Regional Airport: Class III Cultural Resource Inventory in Cass County, North Dakota” in portions of [T139N R52W Sections 13, 14, 23 & 24] Juniper 787 and find the report by Rebecca Pace acceptable. We concur with a determination of “No Historic Properties Affected” for this project provided it takes place in the location and in the manner described in the documentation and provided all borrow comes from an approved source.

Thank you for the opportunity to review this project. Please include the ND SHPO Reference number listed above in further correspondence for this specific project. If you have any questions please contact Lisa Steckler, Historic Preservation Specialist at (701) 328-3577 or lsteckler@nd.gov

Sincerely,

for William D. Peterson, PhD
State Historic Preservation Officer
(North Dakota)

23-5373

Appendix E: Railroad Coordination

Sarah Emmel

From: Kristin Nicholson <kristin.nicholson@rrvw.net>
Sent: Tuesday, April 29, 2025 11:14 AM
To: Sarah Emmel
Cc: Cole Kiernan; Kelli Dunn; Victor Meyers; Mike Burlaga; Jeff Cooley; Kristin Nicholson
Subject: RE: Casselton Robert Miller Regional Airport – Runway Relocation Project - Environmental Assessment (EA) Agency Solicitation of Views

Sara,

I apologize for our delayed response. I answered your questions below in red. As far as RRVW's project to add an additional siding, this project is still in the early stages and subject to change.

RRVW has no issues with the airport expansion.

Please let us know if you need anything additional at this time.

Thank you!

Kristin Nicholson

VP Finance & Administration

Red River Valley & Western Railroad

Phone: 701-642-8257

Email: kristin.nicholson@rrvw.net

EEO COMPLIANCE: "This contractor and subcontractor shall abide by the requirements of 41 CFR §§ 60-1.4(a), 60-300.5(a) and 60-741.5(a). These regulations prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities, and prohibit discrimination against all individuals based on their race, color, religion, sex, or national origin. Moreover, these regulations require that covered prime contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, gender, sexual orientation, national origin, protected veteran status or disability."

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From: Sarah Emmel <Sarah.Emmel@meadhunt.com>

Sent: Monday, April 28, 2025 2:16 PM

To: Kristin Nicholson <kristin.nicholson@rrvw.net>; Kelli Dunn <kelli.dunn@rrvw.net>; Victor Meyers <victor.meyers@rrvw.net>; Austin Gruebele <austin.gruebele@rrvw.net>; Jeff Cooley <jcooley@civildes.com>

Cc: Cole Kiernan <Cole.Kiernan@meadhunt.com>

Subject: RE: Casselton Robert Miller Regional Airport – Runway Relocation Project - Environmental Assessment (EA) Agency Solicitation of Views

Some people who received this message don't often get email from sarah.emmel@meadhunt.com. [Learn why this is important](#)

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Kristin,

I'm reaching out to see if your team has had any thoughts on the matter below or if you would like to set up a time to talk in the future.

Thanks much,
Sarah

Sarah Emmel Tvedten, AICP

Direct: 952-641-8805 | Transfer Files
meadhunt.com | 125 Years of Exceptional

From: Kristin Nicholson <kristin.nicholson@rrvw.net>

Sent: Wednesday, March 26, 2025 4:21 PM

To: Sarah Emmel <Sarah.Emmel@meadhunt.com>; Kelli Dunn <kelli.dunn@rrvw.net>; Victor Meyers <victor.meyers@rrvw.net>; Austin Gruebele <austin.gruebele@rrvw.net>; Jeff Cooley <jcooley@civildes.com>

Cc: Cole Kiernan <Cole.Kiernan@meadhunt.com>

Subject: RE: Casselton Robert Miller Regional Airport – Runway Relocation Project - Environmental Assessment (EA) Agency Solicitation of Views

Sarah,

Thank you for your response. The expansion sounds very exciting for the Casselton airport.

We are discussing this internally and will reach out with responses or to schedule some time for a discussion in the near future.

Thank you.

Kristin Nicholson

VP Finance & Administration

Red River Valley & Western Railroad

Phone: 701-642-8257

Email: kristin.nicholson@rrvw.net

EEO COMPLIANCE: "This contractor and subcontractor shall abide by the requirements of 41 CFR §§ 60-1.4(a), 60-300.5(a) and 60-741.5(a). These regulations prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities, and prohibit discrimination against all individuals based on their race, color, religion, sex, or national origin. Moreover, these regulations require that covered prime contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, gender, sexual orientation, national origin, protected veteran status or disability."

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From: Sarah Emmel <Sarah.Emmel@meadhunt.com>

Sent: Tuesday, March 25, 2025 11:22 AM

To: Kelli Dunn <kelli.dunn@rrvw.net>; Kristin Nicholson <kristin.nicholson@rrvw.net>; Victor Meyers <victor.meyers@rrvw.net>; Austin Gruebele <austin.gruebele@rrvw.net>; Jeff Cooley <jcooley@civildes.com>

Cc: Cole Kiernan <Cole.Kiernan@meadhunt.com>

Subject: RE: Casselton Robert Miller Regional Airport – Runway Relocation Project - Environmental Assessment (EA)
Agency Solicitation of Views

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CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good morning RRV & Western Railroad team,

I am reaching out in response to your email from late last summer when we had initiated scoping comments for an EA involving a project at Casselton Municipal Airport.

You had several questions, and we paused our response at the time due to some uncertainty regarding the airport project. However, we are now advancing this EA document and at the same time see that it is likely crucial to connect with your team regarding some potential cumulative effects with the work you are doing in the vicinity. Below are our initial answers to your questions. Additionally, I have a few questions for you, further below. If it would make sense to set up a call, we would be happy to do so, as well.

- Will the proposed changes to the airport alter or change the drainage so that the railroad must handle more water?
 - A wetland delineation was conducted as part of this project, and wetlands were identified along the NE side of the railroad and on both sides of 39th St SE that also function as drainage ditches for the area. The ditches will be impacted by the runway and taxiway crossing and subsequent culvert, and may be impacted by roadway relocation, depending upon the final alternative. Community engagement has provided us with the understanding that this area handles a lot of water and is an existing point of concern regarding drainage. The project will need to be designed to accommodate any additional runoff caused by new pavement, and similarly would be designed to not exacerbate current issues nor increase the likelihood of new inundation.
- What land is the airport purchasing around the airport? Will any of that land be on the southwest side of our tracks?
 - The airport is currently planning to purchase approximately 235 acres of land from two landowners to the north and east of the airport. None of the land will be to the southwest of the railroad. I've attached a figure here with proposed acquisition parcels (titled PropertyOwnersv3).
- Will the airport be developing buildings and infrastructure on the southwest side of our railroad tracks?
 - No, all airport development will be to the northeast of the railroad. The project does **not** include any current building development; it comprises an extension/relocation of the runway and parallel taxiway. I've attached a preliminary project exhibit. The land acquired directly adjacent to the railroad will remain undeveloped. However, part of the intent of the project is to make more room for appropriately sized hangar development between the taxiway and the railroad, so in the foreseeable future, you may see additional structures on airport property running parallel to the taxiway on the northeast side of the railroad.
- Will the airport changes create any new business development challenges (or opportunities) that we do not have today?
 - The airport changes will likely not result in any long-term business development challenges. The purpose of the project is to maintain and enhance the runway and parallel taxiway, meet near-term user needs and FAA airport design standards, accommodate current and projected aviation activity, allow for operations during inclement weather (instrument meteorological conditions), and to provide land control for long-term needs. While not an explicit goal of the project, airport improvements have the potential to attract new business users due to improved conditions and

equipment. This could marginally increase economic growth in the area, creating new business opportunities and attracting investments.

- What will be the limitations for our facility (ie: height) and other restrictions that are built near the airport?
 - The proposed project will largely not result in new height or other restrictions to your facilities. I've attached an exhibit (titled Surfaces for RRV and W) showing the railroad situated within the transitional surface of the proposed runway, which is restricted to an elevation of approximately 1,050' above sea level. Because the proposed project moves the runway farther away from the railroad, this is a higher elevation than the current situation, which is closer to 1,000'.
 - One spot that would see changes is the area where the new runway end has shifted so the corresponding approach and departure surfaces impact a different section of the railroad than present. I've included an attachment from the 2020 Airport Layout Plan (titled Elevations to RRV and W) that shows clearance of the various surfaces above an estimated 946' elevation for the railroad (which should include a railroad vehicle), showing between 6 and 22 feet of additional clearance above either the 34:1 runway threshold siting surface or the 40:1 runway departure surface, depending upon ultimate runway length. *However*, the proposed project has revised visibility minimums from the 2020 ALP, so I'd like to take another look to verify that these exact clearances are correct. I will coordinate with my team and get back to you with any updates to this information.
- Will this project eliminate us from ever developing new rail serviced customers south of Casselton?
 - The project is not anticipated to prohibit the railroad from developing new rail serviced customers near the airport, or generally south of Casselton. The runway and taxiway are moving further northeast from the railroad and will not impact land south of the tracks. While FAA height restrictions would be in place for developments near the airport, as noted above, these are not expected to affect future railway or associated development.
- What does "establishing new right-of-way easements" mean? Will it impact the railroad?
 - Establishing new right-of-way easements involves closing the current roadway around the intersection of 156th Ave SE and 39th St SE, and potentially creating a new roadway connection in the area. This work should not impact the railroad in the long term but roadway work around the crossing the railroad may affect the railroad during construction. The project is still considering roadway options, not all of which impact the crossing; I expect to have more information following a township meeting this Friday, 3/28.

Please let me know if you have any questions on this information, or any follow up concerns.

In addition, we have a few questions for your team:

1. How far from the existing track will the planned side track on the southwest side be situated? **15 feet from center line to center line**
2. What is the expected construction timeline? **Planning for 2026, possibly 2027**
3. Do you anticipate any roadway/crossing impacts? **The railroad crossings will remain as is at this time in regards to our project.** disruptions to drainage or wetlands in the vicinity? **No, our project will not disrupt drainage. If there is any possible disruption to the wetlands will have proper notification to the USACE.**
4. Will your project be undergoing a NEPA review? **Yes**
5. Do you anticipate any impacts to or property acquisition from adjacent properties, including the parcel circled below? **The expectation at this time is that there will be no property acquisition or impact for our project.**



Thank you for your patience with our responses to your inquiry, and I appreciate your time and assistance on this matter. I've cc'ed my colleague, Cole Kiernan as well, who will be working on updating our EA to consider the new roadway alternatives, and may be in communication as we follow up.

Best,
Sarah



Sarah Emmel Tvedten, AICP
Airport Planner
Direct: 952-641-8805 | Transfer Files
Mead & Hunt
LinkedIn | Facebook | Instagram | My LinkedIn

From: Colleen Bosold <Colleen.Bosold@meadhunt.com>
Sent: Tuesday, August 6, 2024 4:48 PM
To: Sarah Emmel <Sarah.Emmel@meadhunt.com>
Subject: FW: Casselton Robert Miller Regional Airport – Runway Relocation Project - Environmental Assessment (EA) Agency Solicitation of Views

Did you get this? It looks like she had a period at the end of your email address so I'm not sure if it went through to you or not? Lots of questions/comments (but no objections, really).

Colleen Bosold
Direct: 952-641-8826 | Transfer Files
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From: Kelli Dunn <kelli.dunn@rrvw.net>

Sent: Tuesday, August 6, 2024 3:28 PM

To: Colleen Bosold <Colleen.Bosold@meadhunt.com>; Sarah.Emmel@meadhunt.com.

Cc: Kristin Nicholson <kristin.nicholson@rrvw.net>; Victor Meyers <victor.meyers@rrvw.net>; Austin Gruebele <austin.gruebele@rrvw.net>; Jeff Cooley <jcooley@civildes.com>

Subject: FW: Casselton Robert Miller Regional Airport – Runway Relocation Project - Environmental Assessment (EA) Agency Solicitation of Views

You don't often get email from kelli.dunn@rrvw.net. [Learn why this is important](#)

Good afternoon:

Thank you for providing the Red River Valley & Western Railroad the opportunity to comment on the proposed Casselton Airport Project. It is exciting to see the growth and expansion in this area.

The RRVW does have a project proposal to add a new siding track on the southwest side of the tracks that would extend from the highway 18 south for 8,000 ft.

In general, we do not have any concerns with the airport runway expansion, and we support your effort to close both road crossings.

The questions we have include the following:

1. Will the proposed changes to the airport alter or change the drainage so that the railroad must handle more water?
2. What land is the airport purchasing around the airport? Will any of that land be on the southwest side of our tracks?
3. Will the airport be developing buildings and infrastructure on the southwest side of our railroad tracks?
4. Will the airport changes create any new business development challenges (or opportunities) that we do not have today?
5. What will be the limitations for our facility (ie: height) and other restrictions that are built near the airport?
6. Will this project eliminate us from ever developing new rail serviced customers south of Casselton?
7. What does “establishing new right-of-way easements” mean? Will it impact the railroad?

Colleen, we appreciate the notification regarding this project, and we look forward to working with you.

The airport is a great neighbor to the RRVW, and we want to work with you to expand and grow the local infrastructure of Casselton.

Finally, I wanted to mention that we will need to be informed if any of the construction work requires men and equipment to be on our property or within 25 ft of the railroad track.

If that is the case, we will need to work with your team to provide them a permit to be on railroad property and possibly a flagman to keep them safe from train traffic.

We look forward to hearing back from you.

Regards,
Kelli Dunn



Kelli Dunn

Vice President Operations

Phone 218.643.4994 **Mobile** 308.660.1915

Web www.rrvw.net **Email** kelli.dunn@rrvw.net

422 Minnesota Avenue, Breckenridge, MN 56520



From: Austin Gruebele <austin.gruebele@rrvw.net>

Sent: Tuesday, July 23, 2024 8:59 AM

To: Victor Meyers <victor.meyers@rrvw.net>; Kelli Dunn <kelli.dunn@rrvw.net>; Kristin Nicholson <kristin.nicholson@rrvw.net>

Subject: Fwd: Casselton Robert Miller Regional Airport – Runway Relocation Project - Environmental Assessment (EA) Agency Solicitation of Views

I'm forwarding this email I received yesterday regarding proposed changes to the Casselton airport. Looks like they want to expand on the airport to the south along our mainline.

The two big changes I see for RRWV is the airport property extending further southeast along our ROW and closing two roads which would result in eliminating two grade crossings.

Austin Gruebele
Manager of Operations Support
701-640-4477 (Cell)
218-643-4994 (Work)
422 Minnesota Ave
Breckenridge, MN 56520

From: Colleen Bosold <Colleen.Bosold@meadhunt.com>

Sent: Monday, July 22, 2024 3:50 PM

To: bkreft@nd.gov <bkreft@nd.gov>; dglatt@nd.gov <dglatt@nd.gov>; dwrprojectreview@nd.gov <dwrprojectreview@nd.gov>; dwilke@nd.gov <dwilke@nd.gov>; jodi.delozier@nd.gov <jodi.delozier@nd.gov>; ndpsc@nd.gov <ndpsc@nd.gov>; aaron.birst@ndaco.org <aaron.birst@ndaco.org>; Bott, Wade - FPAC-NRCS, ND <wade.bott@usda.gov>; Dillin, Adam <adillin@nd.gov>; emurphy@nd.gov <emurphy@nd.gov>; benjamin.n.soiseth@usace.army.mil <benjamin.n.soiseth@usace.army.mil>; amber.linman@usace.army.mil <amber.linman@usace.army.mil>; kory_richardson@fws.gov <kory_richardson@fws.gov>; kress@wapa.gov <kress@wapa.gov>; mccoy.melissa@epa.gov <mccoy.melissa@epa.gov>; dan.hovland@usda.gov <dan.hovland@usda.gov>; lee.potter@dot.gov <lee.potter@dot.gov>; Austin Gruebele <austin.gruebele@rrvw.net>; jeremy.delgado@lumen.com <jeremy.delgado@lumen.com>; info@kwh.com <info@kwh.com>; planning@casscountynd.gov <planning@casscountynd.gov>; Hansen, Cole <HansenC@casscountynd.gov>; Soucy, Tom <soucyt@casscountynd.gov>; prochniakj@casscountynd.gov <prochniakj@casscountynd.gov>; econdev@casselton.org <econdev@casselton.org>; publicworks@casselton.org <publicworks@casselton.org>; cassaudit@casselton.org <cassaudit@casselton.org>; Caryn Weber

<ETNDCW@outlook.com>; aasandk@casscountynd.gov <aasandk@casscountynd.gov>;

Madriggab@casscountynd.gov <Madriggab@casscountynd.gov>

Cc: Sarah Emmel <Sarah.Emmel@meadhunt.com>; Evan Barrett <Evan.Barrett@meadhunt.com>; Josh Brelje <Josh.Brelje@meadhunt.com>; Tom Schauer <Tom.Schauer@meadhunt.com>; Probert, Thomas G (FAA) <Thomas.G.Probert@faa.gov>; Jenny, Melissa M (FAA) <Melissa.M.Jenny@faa.gov>; Colleen Bosold <Colleen.Bosold@meadhunt.com>

Subject: Casselton Robert Miller Regional Airport – Runway Relocation Project - Environmental Assessment (EA) Agency Solicitation of Views

You don't often get email from colleen.bosold@meadhunt.com. [Learn why this is important](#)

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good afternoon,

The Casselton Robert Miller Regional Airport (5N8) in Casselton, North Dakota, in cooperation with the Federal Aviation Administration (FAA), is preparing an Environmental Assessment (EA) to enhance its runway and parallel taxiway. The Airport has contracted with Mead & Hunt to assist with the preparation of the EA. In accordance with the National Environmental Policy Act (NEPA), the EA will evaluate potential physical, environmental, and social impacts of the proposed action.

While working on an Airport Master Plan in 2020, 5N8 found deficiencies in the Taxilane Object Free Areas resulting in congestion and circulation limitations for aircraft. These, along with the runway's deteriorating pavement conditions, led the Airport to determine that Runway 13/31 needs improvements to:

- Meet near- and long-term user needs and FAA airport design standards.
- Accommodate current and projected aviation activity.
- Allow for operations during inclement weather (under instrument meteorological conditions, when pilots rely on onboard instruments to operate aircraft).
- Maintain compatible land use.

The proposed action consists of:

- Constructing a new runway shifted 400 feet to the northeast to relieve circulation constraints and address deficiencies and 520 feet to the southeast to provide a clear runway protection zone for Runway 13.
- Extending the runway by 1,600 feet to the southeast for an ultimate length of 5,500 feet.
- Converting 3,380 feet of the existing runway to a parallel taxiway and extending the taxiway by 2,120 feet.
- Acquiring approximately 240 acres of land surrounding the Airport in fee-simple and releasing aviation easements where no longer needed.
- Relocating approximately 800 feet of 39th Street SE and approximately 1,850 feet of 156th Avenue SE, closing portions of both roads, and extinguishing existing and establishing new right-of-way easements.
- Installing new lighting and navigational aids.
- Updating approach procedures to ¾-mile visibility minimums for Runway 31, increasing the size of the corresponding runway protection zone.

The attached exhibit shows the proposed improvements.

The EA will consider all social, economic, and environmental effects in the development of this project. We invite you to provide initial comments regarding this proposed action and share information on any proposed projects your organization is considering near the Airport. Please send your comments for us to consider in the evaluation of this project by August 12, 2024, to:

Colleen Bosold

Colleen.Bosold@meadhunt.com

Or mail to:

Mead & Hunt, Inc.
Attn: Colleen Bosold
7900 International Drive, Suite 980
Bloomington, MN 55425

If you have questions regarding the project, please contact the project manager, Sarah Emmel, at 952-641-8805, or by email at Sarah.Emmel@meadhunt.com.

Sincerely,

Colleen Bosold
Community Engagement Coordinator
MEAD & HUNT, Inc.

Colleen Bosold (She, Her, Hers)

Planner & Community Engagement Coordinator | Aviation
Direct: 952-641-8826 | Transfer Files

Mead&Hunt

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Appendix F: Roadway Coordination

Appendix F – Summary of Township Roadway Communication & Coordination

This appendix summarizes coordination and correspondence related to the realignment of township roads for the Casselton Regional Airport Runway Improvements Project. The summary includes meetings, presentations, and email exchanges with Everest Township, Cass County, and community stakeholders.

1. Meeting Notes

March 31, 2025 – Everest Township Virtual Meeting

Attendees: Everest Township representatives including Caryn Weber (chair), Sarah Emmel (Mead & Hunt), Cole Kiernan (Mead & Hunt), Josh Brelje (Mead & Hunt)

Key Points:

- Road Mileage:
 - Concern raised that the state legislature is basing the majority of funding on certified road miles. When it comes to budgeting, losing road miles is undesirable.
 - Prioritizing maintaining a steady number of road miles.
- Discussion on drainage and water flow impacts; M&H committed to consider these in design.
- Coordination with the railroad is ongoing.
- Landowner agreements not yet in place; formal negotiations to follow the EA process.
- Township will defer design standards/specifics to Cass County.
- No formal decision on roadway alternatives at this time, Airport Authority meeting following day with Everest Township rep present.

Presentation:

- Project background and need to bring runway up to FAA standards.
- Roadway alternatives considered, with major factors including cost, farming impacts, drainage, ease of travel, and road mileage funding.

- Most alternatives result in a reduction of 0.25 to 1 mile of township road.
- Only full relocation would increase road mileage (+0.75 mi), but at a higher cost.
- Connectivity is maintained in some alternatives, but not all.

December 16, 2024 – Everest Township Open House

Attendees: Members of the public, Airport Executive Committee, Sarah Emmel (Mead & Hunt), Tom Schauer (Mead & Hunt), Josh Brelje (Mead & Hunt)

Key Points:

-Road alignment being re-examined after initial feedback from Township and affected landowners

October 3, 2024 – Everest Township Chair Meeting

Attendees: Caryn Weber (Everest Township Chair), Sarah Emmel (Mead & Hunt), Evan Barrett (Mead & Hunt)

Key Points:

- Full road closure is undesirable for the township.
- East/west access is important for both farm and residential use.
- Township in charge of maintenance and plowing. Funded by maintained road mile from the County and does not want to reduce road mileage.
- Community engagement is important; township suggested additional meetings to ensure opportunity for involvement. Best time is in winter due to farming activities at other times.
- Consider engaging Durbin township as well.
- Drainage is a concern: suggested making contact with Maple River Watershed District
- Looking to balance city economic development goals with township needs.
- Township would bring in Cass County for roadway building specs.

October 3, 2024 – Adjacent Landowner Meetings

Attendees: Bernie Sinner (SB&B), Pat Bresnahan (SB&B), Jeremy Bresnahan (SB&B), Sarah Emmel (Mead & Hunt), Evan Barrett (Mead & Hunt), Josh Brelje (Mead & Hunt)

Key Points:

- Emphasized the importance of maintaining east/west flow for farming and residential access.

- Most alternative east/west roads are not graded higher than the surrounding land and become impassable in wet conditions, making the existing route important, especially for crossing the railroad.

October 4, 2024 – Adjacent Landowner Meetings

Attendees: Jack Dalrymple (Dalrymple Farms), Sarah Emmel (Mead & Hunt), Evan Barrett (Mead & Hunt), Josh Brelje (Mead & Hunt)

Key Points:

- Dalrymple Farms uses both north/south and east/west routes for access.
- Drainage concerns regarding access to remaining property in the area.

2. Email Correspondence

July 15, 2024 – Caryn Weber (Everest Township) to Project Team

- Confirmed Everest Township's jurisdiction over the affected roads.
- Deferred road design specifications to Cass County Planning Department.

July 12, 2024 – Tom Soucy (Cass County Highway Dept.) to Project Team

- Noted that Everest Township would take the lead on the project, with Cass County involved in platting and design guidance as needed.
- Stated that the project area is outside Casselton city limits, requiring County Planning Department involvement for platting and property ownership.

3. Summary of Key Coordination Outcomes

- Ownership & Maintenance: Everest Township will control and maintain the road, with design standards aligned with those of Cass County.
- Stakeholder Input: Township and adjacent landowners provided input on alignment, emphasizing the importance of east/west flow and maintaining road mileage.
- Everest Township Priorities: Maintaining road mileage is a priority due to its impact on funding and access.

Appendix G: Surface Water



How's My Waterway?

Explore, Discover and Learn about your water.

Waterbody Report

Swan Creek Watershed
Assessment Unit ID: ND-09020205-003-S_00

Waterbody Condition: Impaired (Issues Identified)

Existing Plans for Restoration: No

303(d) Listed: Yes

Year Reported: 2022

Other Years Reported: 2018 <https://epa.gov/waterbody-report/21ndhdwq/nd-09020205-003-s_00/2018> (opens new browser tab)

Organization Name (ID): North Dakota (21NDHDWQ)

What type of water is this?
 River (53.098 Miles)

Where is this water located?
 Swan Creek from its confluence with the Maple River upstream to the Casselton Reservoir, including all tributaries. Located in Central Cass County.

County of Cass, ND, State of North Dakota, Esri, TomTom, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS, USFWS

Powered by Esri <<https://www.esri.com/>>

Assessment Information from 2022

State or Tribal Nation specific designated uses:

[Information on Water Quality Standards <https://www.epa.gov/wqs-tech/state-specific-water-quality-standards-effective-under-clean-water-act-cwa>](https://www.epa.gov/wqs-tech/state-specific-water-quality-standards-effective-under-clean-water-act-cwa) Expand All

Agricultural Good

Identified Issues for Use

No impairments evaluated for this use.

[Other Water Quality Parameters Evaluated](#)

No other parameters evaluated for this use.

Fish and Other Aquatic Biota

Impaired 

Identified Issues for Use

[Impaired Parameters](#)

Plan in Place

Combined Biota/habitat Bioassessments

No

[Other Water Quality Parameters Evaluated](#)

No other parameters evaluated for this use.

Industrial

Good 

Identified Issues for Use

No impairments evaluated for this use.

[Other Water Quality Parameters Evaluated](#)

No other parameters evaluated for this use.

Recreation

Impaired 

Identified Issues for Use

[Impaired Parameters](#)

Plan in Place

Escherichia Coli (E. coli)

No

[Other Water Quality Parameters Evaluated](#)

No other parameters evaluated for this use.

Probable sources contributing to impairment from 2022:

No probable sources of impairment identified for this waterbody.

Assessment Documents

No documents are available

Plans to Restore Water Quality

What plans are in place to protect or restore water quality?

No plans specified for this waterbody.

Discover.

Accessibility Statement

<<https://www.epa.gov/accessibility/epa-accessibility-statement>>

Connect.

Data <<https://www.epa.gov/data>>

Ask.

Contact EPA

<<https://www.epa.gov/aboutepa/forms/contact-epa>>

Appendix H: Aquatic Resource Survey

Casselton Level 1 Wetland Delineation Technical Memorandum

1. Introduction

Mead & Hunt, Inc. (Mead & Hunt) was contracted by the Casselton Regional Airport Authority to develop an Environmental Assessment for the proposed Runway Relocation and Extension Project. The purpose of the proposed project is to maintain and enhance the runway and parallel taxiway at Casselton Regional Airport (FAA identifier 5N8, or “the Airport”), to meet near-term user needs and FAA airport design standards, accommodate current and projected aviation activity, allow for operations during inclement weather (instrument meteorological conditions), and to provide land control for long-term needs. The key elements driving the need for the project are:

- Deteriorating pavement condition on the runway and associated parallel taxiway.
- Insufficient land to increase separation of runway and taxiway and accommodate existing and future critical aircraft design standards in the apron, hangar, and development area.
- Inadequate runway length to accommodate future operations of larger aircraft.
- Required instrument approach procedures, navigational aids, and lighting for any runway changes.
- Incompatible land use in Runway Protection Zones (RPZs) and insufficient land to provide clear RPZs.

In support of the Environmental Assessment, Mead & Hunt contracted Western Plains Consulting, Inc (WPC) in 2022 to complete an Aquatic Resource Delineation at the Casselton Robert Miller Regional Airport. The 2022 study area spans the parts of Section 14, the SW Quarter of Section 13, the Northwest Quarter of Section 24, and the Northeast Quarter of the Northeast Quarter of Section 23, Township 139 North, Range 80 West in Cass County, North Dakota. WPC identified four wetlands within the 2022 project study area encompassing approximately 131,106 square feet or 3.01 acres. The WPC Aquatic Resource Delineation Report is included in **Attachment A**.

In 2025, the project study area expanded to the south to accommodate the realignment of 39th St SE. The study area expansion included the farm field to the south of 38th St SE and east of 156th Ave SE. The updated project study area is shown in **Attachment B**. In light of this study area expansion, Mead & Hunt performed a Level 1 (offsite) Wetland Delineation within the added area.

2. Methods

The methods used for this review align with the U.S. Army Corps of Engineers (USACE) guidance for offsite wetland reviews. This includes interpretation of aerial imagery, Natural Resources Conservation Service (NRCS) Web Soil Survey (WSS) data, National Wetland Inventory (NWI) maps, and topographic information to evaluate potential wetland indicators.

Vegetation was determined to consist entirely of agricultural row crops based on information from the WPC Aquatic Delineation Report and aerial imagery. The area consisted of agricultural row crops since at least 1941. Soils were evaluated using data from the NRCS WSS. Hydrology was evaluated based on NWI data and historic aerial imagery acquired primarily from Google Earth and the National Agriculture

Imagery Program (NAIP). Antecedent precipitation was assessed using the Antecedent Precipitation Tool (APT) developed by the USACE in 2022. Topography data was derived from Original Product Resolution (OPR) Digital Elevation Model (DEM) as provided to the USGS.

3. Results and Discussion

3.1 Site Description

The AOI encompasses approximately 45 acres of cropped farm field. The Project Location Map is included in **Appendix B**. The project area is generally flat, and may have been graded for historical agricultural production. The elevation ranges from 924 feet (North American Vertical Datum 1988) to 920 feet. Ditches are present to the north and south of 39th St SE. These ditches appear to be continuations of the ditch wetlands to the west of the study area identified during the 2022 WPC Aquatic Resource Delineation. A topographic map is included in **Appendix C**.

3.2 Soils Mapping

NRCS WSS was reviewed to determine the presence of hydric soils within the site. According to WSS, the entire site is covered by Udorthents and Udipsamments, cut or fill soils rated as 100% hydric. An NRCS WSS Map is included in **Appendix D**.

3.3 Aquatic Resources

The U.S. Fish and Wildlife Service's (USFWS) National Wetland Inventory was reviewed to determine the presence of aquatic resources within the study area. According to the review, no aquatic resources are present within the study area. One resource, Swan Creek Tributary, is present approximately 250 feet of the study area. An NWI Map is included in **Appendix E**.

3.4 Historic Aerial Imagery

Historic aerial imagery from Google Earth and NAIP were reviewed to determine the presence of wetland signatures within the farmed portion of the study area. Twelve aerials from 2015 to 2023 were reviewed to assess the typical hydrology condition. The review determined that 20% of the historic aerials in normal precipitation years had wetland signatures. Based on the USACE Guidance for Offsite Hydrology/Wetland Determinations, areas with hydric soils, no NWI wetlands, and wetlands signatures in less than 30% of normal precipitation years can be determined as upland. The aerials show evidence of drain tiles within the field, which appear to be effectively draining the area. Historic aerial maps and the wetland determination decision matrix are included in **Appendix F**.

4. Findings and Conclusion

The level 1 wetland delineation concluded that wetlands are present along the ditches to the north and south of 39th St SE, which are a continuation of the ditches identified by WPC as wetlands in 2022. No wetlands were identified within the farmed portion of the study area. The study area is generally flat, with only 4 feet of elevation change within the approximately 45-acre study area. While hydric soils are present within the study area per NRCS WSS, no NWI features are present within the area. The historic aerial review of the farm field determined that wetland indicators are only present in 20% of normal precipitation years, meaning that wetlands are not present within the agriculture field. The study area has been planted with row crops since at least 1941. Aerial photos also indicate that drain tiles are present

within the study area, which appear to be effectively draining the area of excess water. A wetland summary map is included in **Appendix G**.

5. Certifications

The undersigned does hereby certify and state that they are an employee of Mead & Hunt, Inc., that they have been designated as being in responsible charge of the delineation of wetlands described herein; and that this delineation was performed in accordance with the USACE guidance for offsite wetland reviews.

MEAD & HUNT, Inc.



Nicholas Kiernan
Wetland Ecologist

Date: August 29, 2025

Memorandum

Attachment A – Previous Delineation Report

Aquatic Resource Delineation Report

Casselton Robert Miller Regional Airport

Parts of Section 14, the SW Quarter of
Section 13, the Northwest Quarter of Section 24,
and the Northeast Quarter of the Northeast Quarter
of Section 23, Township 139 N., Range 80 W.
Cass County, North Dakota

January 31, 2023

Prepared by:

Lance G. Loken, Professional Soil Classifier, and
Lawrence Mettler, Environmental Scientist,
Western Plains Consulting, Inc.
P.O. Box 1401
Bismarck, North Dakota 58502-1401



Prepared for:

Mr. Evan Barrett
Mead & Hunt, Inc.
2440 Deming Way
Middleton, WI 53562

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	Aquatic Resource Delineation Map
Appendix B	Climate Data
Appendix C	Site Photographs
	Aerial Photographs
Appendix D	Supporting Maps and Data:
	USGS 7.5-Minute Quadrangle Topographic Maps
	NWI Map
	NWI Map Overlay with WPC Wetland Delineation
	NWI Wetlands and Deepwater Map Code Diagram
	Soil Map – Cass County, North Dakota
	Hydric Soil List – All Components
Appendix E	Wetland Determination Data Forms
Appendix F	Plant List

Abbreviations and Acronyms

ARD	Aquatic Resource Delineation
CWA	Clean Water Act
Manual	United State Army Corps of Engineers 1987 Wetland Delineation Manual
NDDOT	North Dakota Department of Transportation
NDGF	North Dakota Game & Fish Department
NRCS	United States Department of Agriculture - Natural Resources Conservation Service
NWI	National Wetland Inventory
NWPL	National Wetland Plant List
NWS	National Weather Service
OHWM	ordinary high-water mark
OW	Other Waters of the United States
PEM1Cx	<i>NWI code for Palustrine, Emergent, Persistent Vegetation, Seasonally Flooded, Excavated</i>
PEM1C	<i>NWI code for Palustrine, Emergent, Persistent Vegetation, Seasonally Flooded</i>
PEMFx	<i>NWI code for Palustrine, Emergent, Semi-permanently Flooded, Excavated</i>
Regional Supplement	Regional Supplement to the United States Army Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0)
SP.	species
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WPC	Western Plains Consulting, Incorporated

Executive Summary

The on-Site determinations of the presence/absence of wetlands and Other Waters of the United States (OW) in the survey area were conducted by Lance G. Loken and Lawrence Mettler, WPC, in accordance with the USACE 1987 Wetland Delineation Manual, hereafter referred to as the Manual, and the Regional Supplement to the USACE Wetland Delineation Manual: Great Plains Region (Version 2.0), hereafter referred to as the Regional Supplement. OW were identified according to instructions provided by the NDDOT and the USACE.

The survey area was identified by Evan Barrett, Manager, Midwest Aviation Planning for Mead & Hunt, Inc., as a part of a planned expansion of the Casselton Robert Miller Regional Airport. Mr. Barrett stated that no development or disturbance is planned within the buildings to the west of the survey area identified on the **Aquatic Resource Delineation Map in Appendix A**. The survey area was comprised of relatively flat to slightly sloped land. There were tilled farmed fields encompassing the airport property that were included in the survey area. The gravel roads, 156th Ave SE and 39th St SE, intersected towards the southern portion of the survey area. There were three (3) wetland areas found within the mowed airport property between the taxiway and runway. The fourth and final wetland centered around the intersection of the two roads and the ditches and along the north end of the railroad tracks bordering the survey area. Most of the vegetation cover that was present was mowed because the survey area consisted of airport property and road ditches.

The survey area, shown as the area within the red boundary on the **Aquatic Resource Delineation Map (Appendix A)**, was approximately 250 acres in size. Four wetlands were delineated within the survey area, totaling 131,106 square feet or approximately 3.01 acres in size.

This report does not address cultural or historic properties.

1. Introduction

The lead contact person and person responsible for this project is:

Mr. Evan Barrett, Manager/ Midwest Aviation Planning
Mead & Hunt
2440 Deming Way
Middleton, WI 53562
evan.barrett@meadhunt.com

The purpose of this report is to identify and describe aquatic resources and to identify known possible sensitive plants, fish, and wildlife species in the survey area. This report facilitates efforts to:

1. Avoid or minimize impacts to aquatic resources during the design process.
2. Document aquatic resource boundary determinations for review by regulatory authorities.
3. Provide early indications of known sensitive species within the survey area.
4. Provide background information.

Evan Barrett, Manager, Mead & Hunt, Inc., requested WPC to complete an aquatic resource delineation at the Casselton Robert Miller Regional Airport and the area surrounding it. The survey area is planned to be additional development of the airport. The developer wants to avoid impacts to jurisdictional wetlands and OWs. See **Appendix A, Location Map**.

The ARD was conducted in the field on November 2nd and 3rd, 2022.

2. Location

The survey area spans the parts of Section 14, the SW Quarter of Section 13, the Northwest Quarter of Section 24, and the Northeast Quarter of the Northeast Quarter of Section 23, Township 139 North, Range 80 West in Cass County, North Dakota. It is located south of Interstate 94 and Casselton, North Dakota by approximately one mile. It is bordered on the north by agricultural land and County Highway 18 (Langer Avenue) bordered to the south by more agricultural land and Red River Valley & Western Railroad. 156th Ave SE and 39th St SE intersect within the southern portion of the survey area. See **Appendix A, Location Map** The survey area was accessed from County Highway 18 (Langer Avenue) or the intersection of 156th Ave SE and 39th St SE.

3. Methods

WPC reviewed available sources that may contain evidence or indicators of wetlands or Other Waters of the U.S. (OW) in the survey area. Off-site data sources reviewed included U.S. Fish & Wildlife Service (FWS) National Wetland Inventory (NWI) map, United States Geological Survey (USGS) Topographic Map, USDA-Natural Resources Conservation Service (NRCS) Web Soil Survey data, Google Earth aerial photographs, and climatic data posted on the U.S. Drought Monitor Website. WPC conducted a review of aerial photography to determine any

areas of interest for wetlands prior to conducting the field assessment. See the images and the comments associated with them in **Appendix C, Aerial Photographs**. WPC walked the entire survey area in the field to evaluate actual conditions, identify aquatic resource indicators, and inventory plant species.

The on-Site determinations of the presence/absence of wetlands and OWs in the survey area were conducted in accordance with the Manual and the Regional Supplement. The Routine Determinations - On-site Inspection Necessary - Areas Equal To or Less Than 5 Acres in Size procedure was followed. Field observations in the survey area were recorded on Wetland Determination Data Forms. Vegetation, soil, and hydrology data were recorded at paired survey points, one on each side of the wetland boundary. The locations of survey points, wetland boundary, and photo points were recorded with a Trimble Geo 7x GPS unit that had \pm 10-centimeter accuracy.

WPC followed instructions from a May 2014 workshop provided by USACE and North Dakota Department of Transportation (NDDOT) employees for determining the presence or absence of OW potentially subject to the Clean Water Act. OWs can include traditional navigable waters (named rivers, streams, and lakes); non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months); and deep-water habitat (greater than 2 meters) not dominated by persistent, emergent vegetation.

4.0 Existing Conditions

The entire survey area was visited after the normal wet period, i.e., in November. WPC determined the hydrologic conditions were much drier than normal at the time of the field survey, based on data obtained from the U.S. Drought Monitor Web site. Refer to **Appendix B, Climatic Data**. The agricultural land that was present within the survey area was tilled, so the soils and hydrology were the only factors that were assessed in the agricultural land. The airport property and road ditches were mowed, which presented a challenge identifying vegetation within the survey area. Western Plains Consulting was still capable of identifying hydric vegetation within these areas.

4.1 Landscape Setting

The survey area included relatively flat land with a few concave features. The concave features mainly occurred in between the airport runway and taxiway where multiple culverts were present. There were two gravel roads that intersected each other within the southern portion of the survey area. There were road ditches adjacent to these roads that were sloped in a way that allowed wetlands to occur. The natural slopes were mapped by NRCS as 0 to 1 or 0 to 2 percent slopes in the survey area. Most of the survey area had been used as agricultural land. The airport property and the road ditches had been historically mowed. The natural climax plant communities were assumed to have been tallgrass prairie because it was within the Red River Valley.

The survey area was approximately 250 acres in size. The gradient of the survey area appears to be from around 933 feet in the northwest of the survey area to approximately 923 feet in the furthest southeast reaches of the survey area. See **Appendix D, Supporting Maps and Data Topographic Map**.

The survey area included four NRCS soil map units. NRCS classified two of the soil map units as typically having 2 percent hydric inclusions and another as typically having 4 percent hydric inclusions. The Fargo silty clay, 0 to 1 percent slopes was classified as having 100 percent hydric inclusion. However, not all “hydric” soils are considered wetland soils. Fargo itself is not considered a wetland soil if drained, but it can be a wetland soil if mapped as Fargo ponded. This soil was not mapped as Fargo ponded, and the soils WPC evaluated often did not include wetland indicators. Most of this soil series within the survey area had been tilled during the on-Site visit and may be tile drained. Refer to **Appendix D, Supporting Maps and Data - Hydric Soil List – All Components**.

WPC considered the survey area to have slight habitat potential for the rusty patched bumble bee, a species listed as endangered under the Endangered Species Act.

For species listed by NDGF as Species of Conservation Priority, the survey area was considered to have significant habitat potential for the monarch butterfly, smooth green snake, and western meadowlark.

For species listed by NDGF as Species of Conservation Priority, the survey area was considered by WPC to have minor or unknown habitat potential for Swainson’s Hawk, Black-billed Cuckoo, Aquatic Resource Delineation Report
Casselton Robert Miller Regional Airport
WPC Project No. 531-01-LL

January 31, 2023

Regal Fritillary, American Kestrel, Loggerhead Shrike, plains pocket mouse, Eastern Spotted Skunk, and gray fox.

Note: WPC only provides comments about potential species use/presence in the survey area as conjecture based on a cursory review of data; the comments are insufficient for a Biological Assessment or Biological Evaluation. This report only addresses potential species presence and/or habitat in the part of the Site that is planned for development.

The entire survey area was field verified on foot.

4.2 Aquatic Resources

There were three wetlands that were part of the survey area that met all three wetland criteria in the Manual. These were wetlands 1, 2, and 4. Wetlands 1 and 2 were located on the northern half of the airport property within the runway and taxiway. Both Wetland 1 and 2 were split into 2 parts with an A and B wetland because there was a culvert that was between them. Wetland 3 did not meet the criteria for hydric soils, but it was WPC's professional opinion that with the hydric vegetation and hydrology present that the area of Wetland 3 was functioning as a wetland. Wetland 3 was located near the southern portion of the airport property. Wetland four was split into eight parts because of the use of culverts near the intersection of 156th Ave SE and 39th St SE. These culverts ultimately divided portions of the same wetland. There were also three non-wetland points that were surveyed within the survey. These survey points were documented to determine whether a wetland was present in that area and ultimately there was not any hydric soils present to indicate a wetland. The non-wetland points were all taken within the airport property and their locations can be observed in **Appendix A, Aquatic Resource Delineation Map**. The total vegetation, soil, and hydrology data collected in the field for the wetlands and non-wetland points are documented in **Appendix E, Wetland Determination Data Forms**.

For a better understanding of the Site and the aquatic resources, see **Appendix A, Aquatic Resource Delineation Map**. See **Appendix C, Site Photographs**, for visual documentation of each aquatic resource delineation. See **Appendix D - Supporting Maps and Data - NWI Map**, for USFWS' Cowardin classifications of the aquatic resources. Soils information for the survey area and wetland survey point locations are contained in **Appendix D - Supporting Maps and Data -Soil Map – Cass County, North Dakota** and **Hydric Soil List - All Components - Burleigh County, ND**. An inventory of all plant species observed in the survey area is in **Appendix F, Plant List**.

Wetland 1

The approximate location where the survey points (W-1, Upl-1) were taken can be observed in **Appendix A, Aquatic Resource Delineation Map**. There were two sections of Wetland 1 that were connected by a culvert. The location of Wetland 1A (0.01 acres) and Wetland 1B (0.08 acres) can be observed in **Appendix A, Aquatic Resource Delineation Map** as well.

Wetland Point (W-1)

The airport property where the wetland survey point (W-1) and upland survey point (Upl-1) for this wetland were maintained and mowed. Therefore, the species diversity was

limited, and identification was made difficult due to the lack of fruiting structure and the dormant season. However, WPC found the dominant species in the wetland survey area to be Rushes (*Juncus sp.*, FACW) covering 75 percent of the area. There was also Kentucky Blue Grass (*Poa pratensis*, FACU) covering about 20 percent of the area with about 5 percent of bare ground present. See **Appendix C, Photographs**, Photos #3 and 4 for a visual of W-1. Plant communities did meet the Rapid Test for hydrophytic vegetation criteria.

The soil described has a 0 to 7 inches, A horizon, which was a clay loam and was 95 percent black (2.5Y 2.5/1). There was no reaction to dilute hydrochloric acid (HCl). There were common (5%) fine distinct white (2.5Y 8/1) salt crystals present. The 7 to 16 inch horizon has 55% dark grayish brown (2.5Y 4/2) matrix with 30% dark gray (2.5Y 4/1) many fine and medium distinct iron depletions in the matrix, and common fine and medium prominent brown (7.5YR 4/4) at 15% in the matrix iron and manganese concentrations. No hydric soil indicator was identified on-Site, but WPC used “Other” for the wetland indicator status. As the hydrophytic vegetation and hydrology indicators were present, and the 7 to 16 inch horizon had 2 chroma with redox features, it is WPC’s opinion that this soil was behaving as a wetland soil.

The wetland survey point (W-1) had wetland hydrology indicators of Drainage Patterns (B10), Geomorphic Position (D2), and FAC-Neutral Test (D5) noted. No surface water, water table, or saturation was present since at the time of the survey the area was within a severe drought as indicated in the U.S Drought Monitor, see **Appendix B, Climate Data**. If this condition was not present, WPC anticipates that the field observations for hydrology would differentiate. Since hydric vegetation and hydrology was present at survey point W-1 and it was WPC professional opinion that the soils were acting as a hydric soil, the area of W-1 was considered a wetland.

Upland Point (Upl-1)

The upland point for Wetland 1 was mostly dominated by upland grasses. Kentucky Blue Grass (*Poa pratensis*, FACU) covered approximately 60 percent of the survey area followed by Smooth Brome (*Bromus inermis*, UPL) at 40 percent and a slight presence of Fox-tail Barley (*Hordeum jubatum*, FACW). Plant communities did not meet any hydrophytic vegetation criteria at the upland survey point.

The 0 to 10 inch horizon was a clay loam and had 80% of the matrix as black (2.5Y 2.5/1) and 15% dark grayish brown (2.5Y 4/2) from apparent soil mixing in the past. There were also common (5%) fine and medium distinct 2.5Y 8/1 salt crystals present. The 10 to 16 inch horizon was a silty clay loam with a matrix that was 95% olive brown (2.5Y 4/3) with common (5%) fine and medium dark yellowish brown (10YR 4/4) soft iron and manganese concentrations (redox features) present. However, the 3 chroma means this was not a wetland soil. No hydric soil indicator was identified on-Site.

The upland point (Upl-1) had no wetland hydrology indicators noted. No surface water, water table, or saturation was present since at the time of the survey the area was within a severe drought as indicated in the U.S Drought Monitor, see **Appendix B, Climate Data**. If this condition was not present, WPC anticipates that the field observations for

hydrology may have differentiated. However, since the vegetation did not meet criteria for hydrophytic vegetation and the soils were too light in color and exhibited no hydric qualities, WPC determined the area of UPL-1 was not a wetland.

Wetland 2

The approximate location where the points (W-2, Upl-2) were taken can be observed in **Appendix A, Aquatic Resource Delineation Map**. There were two sections of Wetland 2 that were connected by a culvert. The location of Wetland 2A (0.41 acres) and Wetland 2B (0.21 acres) can be observed in **Appendix A, Aquatic Resource Delineation Map** as well. There was a wetland that was identified by the NWI that was within the location of Wetland 2. The NWI wetland that is shown in **Appendix D, NWI Map** was an approximate 0.72 acres. The comparison between this wetland and Wetland 2 can be found in **Appendix D, NWI Overlay Map**. The ground truth found the wetland to actually be smaller than shown on the NWI.

Wetland Point (W-2)

The airport property where the wetland survey point (W-2) and upland survey point (Upl-2) for this wetland was maintained and mowed. Therefore, the species diversity was limited, and identification was made difficult due to the lack of fruiting structure and the dormant season. However, WPC found the dominant species in the wetland survey area to be Rushes (*Juncus sp.*, FACW) covering 55 percent of the area. Common Knotweed (*Polygonum arenastrum*, FACU) at 35 percent cover and Western Wheatgrass (*Pascopyrum smithii*, FACU) at 10 percent cover. See **Appendix C, Photographs**, Photos #5, 6, 8 for a visual of W-2 and Wetland 2A and B. Plant communities did meet the Prevalence Index for hydrophytic vegetation criteria.

The soil described has a 0 to 6 inches, A horizon, which was a clay loam and was 90 percent black (2.5Y 2.5/1). There were common (10%) fine distinct white (2.5Y 8/1) salt crystals present. The 6 to 12 inch horizon was a clay loam and had a mixed matrix from apparent past construction activity or soil mixing and was 55% dark grayish brown (2.5Y 4/2) matrix with 45% black (2.5Y 2.5/1) mixed matrix. The 12 to 16+ inch horizon was a silty clay loam and had very dark grayish brown (2.5Y 4/2) at 55% in the matrix. There were common (15%) fine and medium prominent black (7.5YR 2.5/1) manganese concentrations and many (30%) fine and medium prominent brown (7.5YR 4/4) soft iron and manganese concentrations (redox features) present. No hydric soil indicator was identified on-Site, but WPC used “Other” for the wetland indicator status. As the hydrophytic vegetation and hydrology indicators were present, and the 12 to 16+ inch horizon had 2 chroma with redox features, it is WPC’s opinion that this soil was behaving as a wetland soil.

The wetland survey point (W-2) had wetland hydrology indicators of Drainage Patterns (B10), Geomorphic Position (D2), and FAC-Neutral Test (D5) noted. No surface water, water table, or saturation was present since at the time of the survey the area was within a severe drought as indicated in the U.S Drought Monitor, see **Appendix B, Climate Data**. If this condition was not present, WPC anticipates that the field observations for hydrology would differentiate. Since hydric vegetation and hydrology was present at survey point W-2 and it was WPC professional opinion that the soils were acting as a hydric soil, the area of W-2 was considered a wetland.

Upland Point (Upl-2)

The upland point for Wetland 2 was mostly dominated by upland grasses. Kentucky Blue Grass (*Poa pratensis*, FACU) covered approximately 50 percent of the survey area followed by Smooth Brome (*Bromus inermis*, UPL) at 50 percent and a slight presence of Common Dandelion (*Taraxacum officinale*, FACU) at 10 percent. See **Appendix C, Photographs**, Photo 7 for a visual of Upl-2. Plant communities did not meet any hydrophytic vegetation criteria at the upland survey point.

The 0 to 8 inch horizon was a clay loam and had 80% of the matrix as black (2.5Y 2.5/1). There were also many (20%) fine and medium distinct 2.5Y 8/1 salt crystals present. The 8 to 12 inch horizon was a clay loam with a mixed matrix that was 55% black (2.5Y 2.5/1) and 40% dark grayish brown (2.5Y 4/2) with common (5%) fine and medium yellowish red (5YR 4/6) relic iron concentrations present. This horizon showed evidence of mixing from 8 to 12 inches, possibly from past construction activity. The 12 to 16+ horizon was a silty clay loam with a matrix of 75% olive brown (2.5Y 4/3) with many (25%) fine and medium prominent brown (5YR 4/4) soft iron and manganese concentrations that appeared to be contemporary, thus redox features. However, the 3 chroma means this was not a wetland soil. No hydric soil indicator was identified on-Site.

The upland survey point (Upl-2) had no wetland hydrology indicators noted. No surface water, water table, or saturation was present since at the time of the survey the area was within a severe drought as indicated in the U.S Drought Monitor, see **Appendix B, Climate Data**. If this condition was not present, WPC anticipates that the field observations for hydrology may have differentiated. However, since the vegetation did not meet the criteria for hydrophytic vegetation and the soils were too light in color and exhibited no hydric qualities, WPC determined the area of UPL-2 was not a wetland.

Wetland 3

The approximate location where the survey points (W-3, Upl-3) were taken can be observed in **Appendix A, Aquatic Resource Delineation Map**. The location of Wetland 3 (0.05 acres) can be observed in **Appendix A, Aquatic Resource Delineation Map** as well.

Wetland Point (W-3)

The airport property where the wetland survey point (W-3) and upland survey point (Upl-3) for this wetland were maintained and mowed. Therefore, the species diversity was limited, and identification was made difficult due to the lack of fruiting structure and the dormant season. However, WPC found the dominant species in the wetland survey area to be Rushes (*Juncus sp.*, FACW) covering 85 percent of the area with a sparse 2 percent of Kentucky Bluegrass (*Poa pratensis*, FACU). There was approximately 25 percent bare ground within the survey point radius. See **Appendix C, Photographs**, Photos #14 for a visual of Wetland 3. Plant communities did meet the Rapid Test for hydrophytic vegetation criteria.

No hydric soil indicator was identified on-Site. The soil described has a 0 to 6 inches, A horizon, which was a clay loam and was 100 % black (2.5Y 2.5/1). The 6 to 12+ inch depth (A horizon) was a silty clay loam and was 100% light olive brown (2.5Y 5/3).

However, as the hydrophytic vegetation and hydrology indicators were present, it was WPC's opinion that this soil was behaving as a wetland soil and should be considered an aquatic resource. As there were 3 chroma below 6 inches, WPC did not state "Other" for hydric soil indicator status.

The wetland survey point (W-3) had wetland hydrology indicators of Surface Cracks (B6), Geomorphic Position (D2), and FAC-Neutral Test (D5) noted. No surface water, water table, or saturation was present since at the time of the survey the area was within a severe drought as indicated in the U.S Drought Monitor, see **Appendix B, Climate Data**. If this condition was not present, WPC anticipates that the field observations for hydrology would differentiate. Since hydric vegetation and hydrology was present at survey point W-3 and was considered a wetland.

Upland Point (Upl-3)

The upland point for Wetland 3 was mostly dominated by upland grasses. Kentucky Blue Grass (*Poa pratensis*, FACU) covered approximately 50 percent of the survey area followed by Smooth Brome (*Bromus inermis*, UPL) at 50 percent and a slight presence of Common Dandelion (*Taraxacum officinale*, FACU) at 5 percent. There was approximately 5 percent bare ground within the point radius. See **Appendix C, Photographs**, Photos #15 for a visual of Upl-3. Plant communities did not meet any hydrophytic vegetation criteria at the upland survey point.

The 0 to 12 inch horizon was a clay loam and had a 90% matrix as black (2.5Y 2.5/1). There were also common (10%) fine and medium distinct 2.5Y 8/1 salt crystals present. The 12 to 15 inch horizon was a silty clay loam with a matrix that was 100 % dark grayish brown (2.5Y 4/2) with no redox features present. The 15 to 23 inch horizon was a clay loam with a matrix of 90% olive brown (2.5Y 4/3) with common (10%) fine and medium distinct light gray (2.5Y 7/1) soft lime masses. However, the 3 chroma from 15 to 23 inches means this was not a wetland soil. No hydric soil indicator was identified on-Site.

The upland survey point (Upl-3) had no wetland hydrology indicators noted. No surface water, water table, or saturation was present since at the time of the survey the area was within a severe drought as indicated in the U.S Drought Monitor, see **Appendix B, Climate Data**. If this condition was not present, WPC anticipates that the field observations for hydrology may have differentiated. However, since the vegetation did not meet the criteria for hydrophytic vegetation and the soils were too light in color and exhibited no hydric qualities, WPC determined the area of UPL-3 was not a wetland.

Wetland 4

The approximate location where the survey points (W-4, W-4E, and Upl-4) were taken can be observed in **Appendix A, Aquatic Resource Delineation Map**. There were eight sections of Wetland 4 that were connected by a culvert. The location of Wetland 4A (0.05 acres), 4B (0.07 acres), 4C (0.15 acres), 4D (0.11 acres), 4E (0.45 acres), 4F (0.01 acres), 4G (0.05 acres), and 4H (1.36 acres) can be observed in **Appendix A, Aquatic Resource Delineation Map** as well.

Wetland Point (W-4)

The wetland survey point (W-4) was within a channel that was near the railroad tracks off-Site. The upland survey point (Upl-4) and additional wetland point (W-4E) for this wetland was maintained and mowed because it was near or in the road ditch. Therefore, the species diversity was limited in Upl-4 and W-4E, and identification was made difficult due to the lack of fruiting structure and the dormant season. However, WPC found the dominant species in the wetland survey area W-4 to be Reed Canary Grass (*Phalaris arundinacea*, FACW) covering 40 percent of the area and Cattails (*Typha sp.*, OBL) covering 30 percent. There was approximately 30 percent of bare ground within the survey point radius. See **Appendix C, Photographs**, Photos #17 and 18 for a visual of the W-4 survey point area. Plant communities did meet the Rapid Test for hydrophytic vegetation criteria.

The soil described has a 0 to 4 inches, A horizon, which was a clay loam and was 100% very dark gray (2.5Y 3/1). This horizon showed evidence in the soil structure of compaction. The 4 to 7 inch horizon was a silty clay loam and had a mixed matrix from apparent past construction activity or soil mixing and was 45% very dark gray (2.5Y 3/1) matrix with 55% dark grayish brown (2.5Y 4/2) mixed matrix with no redox features present. The 7 to 13 inch horizon was a clay loam and was 90% very dark grayish brown (2.5Y 4/2) matrix. There were common (10%) fine and medium distinct light gray (2.5Y 7/2) soft lime masses present. The 13 to 24 inch horizon was a clay loam that had a 75% matrix of dark grayish brown (2.5Y 4/2), with many (25%) fine and medium distinct light gray (2.5Y 7/2) soft lime masses. No redox features were noted in this soil profile. No hydric soil indicator was identified on-Site, but WPC used “Other” for the wetland indicator status. As the hydrophytic vegetation and hydrology indicators were present, and the 7 to 13 and 13 to 24 inch horizons had 2 chroma, but with no redox features, it is WPC’s opinion that this soil was behaving as a wetland soil.

The wetland survey point (W-4) had wetland hydrology indicators of Algal Mat or Crust (B4), Drainage Patterns (B10), Geomorphic Position (D2), and FAC-Neutral Test (D5) noted. No surface water, water table, or saturation was present since at the time of the survey the area was within a severe drought as indicated in the U.S Drought Monitor, see **Appendix B, Climate Data**. If this condition was not present, WPC anticipates that the field observations for hydrology would differentiate. Since hydric vegetation and hydrology was present at survey point W-4 and it was WPC professional opinion that the soils were acting as a hydric soil, the area of W-4 was considered a wetland.

Wetland Point (W-4E)

WPC found the dominant species in the wetland survey area W-4E to be Reed Canary Grass (*Phalaris arundinacea*, FACW) covering 30 percent of the area and Rushes (*Juncus sp.*, FACW) covering 30 percent. There was approximately 20 percent of Prairie Cordgrass (*Spartina pectinata*, FACW) covering the survey point radius. See **Appendix C, Photographs**, Photos #23 and 24 for a visual of the W-4E survey point area. Plant communities did meet the Dominance Test for hydrophytic vegetation criteria.

The soil described has a 0 to 4 inches, A horizon, which was a clay loam and was 90% black (2.5Y 2.5/1). There were common (10%) fine and medium distinct white (2.5Y 8/1) salt crystals. The 4 to 8 inch horizon was a clay loam and was 100% black (2.5Y 2.5/1) matrix with no redox features present. The 8 to 14 inch horizon was a silty clay loam and had a mixed matrix that was 55% very dark grayish brown (2.5Y 4/2) and 40% black (2.5Y 8/1) matrix. There were common (5%) fine and medium prominent dark yellowish brown (10YR 4/4) soft iron and manganese concentrations (redox features) noted. The mixed matrix indicates past soil mixing, perhaps from the past road construction activities. The 14 to 30 inch horizon was a clay loam that had a 75% matrix of very dark grayish brown (2.5Y 3/2), with many (20%) fine and medium distinct light gray (2.5Y 7/2) soft lime masses, and common (5%) fine and medium prominent dark yellowish brown (10YR 4/4) soft iron and manganese concentrations (redox features) noted in the matrix. No hydric soil indicator was identified on-Site, but WPC used "Other" for the wetland indicator status. As the hydrophytic vegetation and hydrology indicators were present, and the 8 to 14 inch horizon has 1 and 2 chroma, and the 14 to 30 inch horizon had 2 chroma, both with redox features, it is WPC's opinion that this soil, along with the hydrophytic vegetation and hydrology indicators, was behaving as a wetland soil.

The wetland survey point (W-4E) had wetland hydrology indicators of Water-Stained Leaves (B9), Salt Crust (B11), Drainage Patterns (B10), and Geomorphic Position (D2) was noted. No surface water, water table, or saturation was present since at the time of the survey the area was within a severe drought as indicated in the U.S Drought Monitor, see **Appendix B, Climate Data**. If this condition was not present, WPC anticipates that the field observations for hydrology would differentiate. Since hydric vegetation and hydrology was present at survey point W-4E and it was WPC professional opinion that the soils were acting as a hydric soil, the area of W-4E was considered a wetland.

Upland Point (Upl-4)

The upland point for Wetland 4 was mostly dominated by upland grasses. Kentucky Blue Grass (*Poa pratensis*, FACU) covered approximately 35 percent of the survey area followed by Smooth Brome (*Bromus inermis*, UPL) at 35 percent and Reed Canary Grass (*Phalaris arundinacea*, FACW) at 20 percent. There was a slight presence of Foxtail Barley (*Hordeum jubatum*, FACW) at 3 percent and approximately 7 percent bare ground. Plant communities did not meet any hydrophytic vegetation criteria at the upland survey point.

The 0 to 12 inch horizon was a clay loam and had a 100% matrix as black (2.5Y 2.5/1). The 12 to 14 inch horizon was a clay loam with a matrix that was 85% black (2.5Y 2.5Y/1) with common (15%) fine and medium distinct white (2.5Y 8/1) salt crystals. The 14 to 17 inch horizon was a silty clay loam with a matrix of 90% dark grayish brown (2.5Y 4/2) with common (10%) fine and medium distinct white (2.5Y 8/1) salt crystals. The 17 to 27 inch horizon was a silty clay loam that had a 95% matrix of olive brown (2.5Y 4/3) with common (5%) fine and medium prominent brown (7.5YR 4/4) soft iron and manganese concentrations (redox features) in the matrix. However, the 3 chroma from 17 to 23 inches means this was not a wetland soil. No hydric soil indicator was identified on-Site.

The upland survey point (Upl-4) had no wetland hydrology indicators noted. No surface water, water table, or saturation was present since at the time of the survey the area was within a severe drought as indicated in the U.S Drought Monitor, see **Appendix B, Climate Data**. If this condition was not present, WPC anticipates that the field observations for hydrology may have differentiated. However, since the vegetation did not meet the criteria for hydrophytic vegetation and the soils were too light in color and exhibited no hydric qualities, WPC determined the area of UPL-4 was not a wetland.

Data for the aquatic resources in the survey area are listed in Table 1 below.

Table 1. Aquatic Resources within the Survey Area

Aquatic Resource Name	Cowardin Classification By NWI	Cowardin Classification by WPC	Location – Latitude	Location – Longitude	Aquatic Resource Size (acres)	Square Footage	
Wetland 1A	-	PEM1C	46.857363	-97.214197	0.01	534	
Wetland 1B	-	PEM1C	46.856808	-97.213186	0.08	3,698	
Wetland 2A	PEM1Cx	PEM1Cx	46.855025	-97.210206	0.41	17,693	
Wetland 2B	PEM1Cx	PEM1Cx	46.854147	-97.208900	0.21	9,112	
Wetland 3	-	PEM1C	46.850669	-97.203969	0.05	2,352	
Wetland 4A	-	PEMFx	46.846955	-97.200491	0.05	2,231	
Wetland 4B	-	PEM1Cx	46.847081	-97.199651	0.07	2,879	
Wetland 4C	-	PEM1Cx	46.847090	-97.196716	0.15	6,418	
Wetland 4D	-	PEM1Cx	46.847214	-97.193260	0.11	5,004	
Wetland 4E	-	PEM1Cx	46.847226	-97.197743	0.45	19,504	
Wetland 4F	-	PEM1Cx	46.847479	-97.200333	0.01	361	
Wetland 4G	-	PEM1Cx	46.847231	-97.200696	0.05	2,097	
Wetland 4H	-	PEMFx	46.849609	-97.204583	1.36	59,223	
					Wetland Sum	3.01	131,106
					OW Sum	0	0

Non-Wetland 1

The airport property where survey point Non-Wetland 1 was located was maintained and mowed. Therefore, the species diversity was limited, and identification was made difficult due to the lack of fruiting structure and the dormant season. However, WPC found the dominant species in the survey area to be Smooth Brome (*Bromus inermis*, UPL) covering 65 percent of the area. There was also Kentucky Blue Grass (*Poa pratensis*, FACU) covering about 45 percent of the area and Common Dandelion (*Taraxacum officinale*, FACU) at 10 percent. See **Appendix C, Photographs**, Photo #1 for a visual of the survey area of Non-Wetland 1. Plant communities did not meet any criteria for hydrophytic vegetation.

The 0 to 7 inch horizon was a clay loam and had a 100% matrix as black (2.5Y 2.5/1). The 7 to 10 inch horizon was a clay loam with a mixed matrix that was 50% black (2.5Y 2.5/1) and 50 % dark grayish brown (10YR 4/2) with no redox features present. The 10 to 12 inch horizon was a clay loam with a matrix of 100% grayish brown (2.5Y 5/2) with no redox features present. The 12 to 25 inch horizon was a clay loam that had a 100% matrix of dark grayish brown (2.5Y 4/2)

with no redox features present. However, the various 2 chroma with no redox features present, means this was not a wetland soil. No hydric soil indicator was identified on-Site.

Non-Wetland 1 had one wetland hydrology indicator of Geomorphic Position (D2) noted. No surface water, water table, or saturation was present since at the time of the survey the area was within a severe drought as indicated in the U.S Drought Monitor, see **Appendix B, Climate Data**. If this condition was not present, WPC anticipates that the field observations for hydrology may have differentiated. Since wetland hydrology indicator Geomorphic Position (D2) is a secondary indicator, there was not enough hydrology to deem this area wetland status.

Non-Wetland 2

The airport property where survey point Non-Wetland 2 was located was maintained and mowed. Therefore, the species diversity was limited, and identification was made difficult due to the lack of fruiting structure and the dormant season. However, WPC found the dominant species in the survey area to be Rushes (*Juncus sp.*, FACW) covering 70 percent of the area. There was also Red Clover (*Trifolium pratense*, FACU) covering about 20 percent of the area and Western Wheatgrass (*Pascopyrum smithii*, FACU) at 10 percent. See **Appendix C, Photographs**, Photos #9-11 for a visual of the survey area of Non-Wetland 2. Plant communities did meet the Dominance Test for hydrophytic vegetation criteria.

The 0 to 4 inch horizon was a clay loam and had a 100% matrix as very dark gray (2.5Y 3/1). The 4 to 16 inch horizon was a silty clay loam with a 70% matrix that was light olive brown (2.5Y 5/3) with many (30%) fine and medium prominent brown (7.5YR 4/4) soft iron and manganese concentrations (redox features) in the matrix. However, the 3 chroma means this was not a wetland soil. No hydric soil indicator was identified on-Site.

Non-Wetland 2 had one wetland hydrology indicator of Geomorphic Position (D2) noted. No surface water, water table, or saturation was present since at the time of the survey the area was within a severe drought as indicated in the U.S Drought Monitor, see **Appendix B, Climate Data**. If this condition was not present, WPC anticipates that the field observations for hydrology may have differentiated. Since wetland hydrology indicator Geomorphic Position (D2) is a secondary indicator, there was not enough hydrology to deem this area wetland status.

Non-Wetland 3

The airport property where survey point Non-Wetland 3 was located was maintained and mowed. Therefore, the species diversity was limited, and identification was made difficult due to the lack of fruiting structure and the dormant season. However, WPC found the dominant species in the survey area to be Rushes (*Juncus sp.*, FACW) covering 100 percent of the area with 5 percent bare ground. See **Appendix C, Photographs**, Photos #12 and 13 for a visual of the survey area of Non-Wetland 3. Plant communities did meet the Rapid Test for hydrophytic vegetation criteria.

The 0 to 10 inch horizon was a clay loam and had a 100% matrix of black (2.5Y 2.5/1). The 10 to 16 inch horizon was a silty clay loam with a 100% matrix that was light olive brown (2.5Y

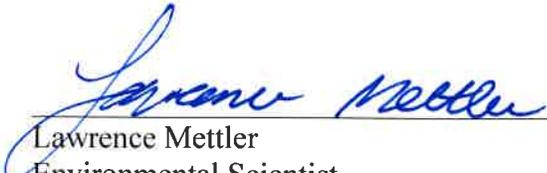
5/3). The 3 chroma means this was not a wetland soil. No hydric soil indicator was identified on-Site.

Non-Wetland 3 had one wetland hydrology indicator of Geomorphic Position (D2) noted. No surface water, water table, or saturation was present since at the time of the survey the area was within a severe drought as indicated in the U.S Drought Monitor, see **Appendix B, Climate Data**. If this condition was not present, WPC anticipates that the field observations for hydrology may have differentiated. Since wetland hydrology indicator Geomorphic Position (D2) is a secondary indicator, there was not enough hydrology to deem this area wetland status.

5.0 Signatures of Report Developers

Services performed by the scientists of WPC for this project have been conducted in a professional manner consistent with that level of care and skill ordinarily exercised by members of this profession currently practicing in this area under similar time and budget restraints. No warranty, expressed or implied, is made.

This Aquatic Resource Delineation Report was completed by WPC, Inc.'s Environmental Scientist Lawrence Mettler under the direct supervision and collaboration with WPC, Inc.'s Professional Soil Classifier, Lance G. Loken.



Lawrence Mettler
Environmental Scientist

Date 1/31/23



Lance Loken
Professional Soil Classifier #68

Date 1/31/23

6.0 Credentials of Aquatic Resource Delineators

Name: **Lawrence T. Mettler**

Education: North Dakota State University – B.S., Range Science

Relevant Work/Educational Experience: Mettler was a technician assistant with the NDSU Range Science department and conducted vegetation and soil surveys on coal mine restoration projects. Mettler also gained field experience during his wetland resource management course that extensively used the HGM model and the Army Corps of Engineers standards to assess wetlands. Soils and plant identification courses were also an intensive amount of Mettler's degree at North Dakota State University.

Name: **Lance G. Loken**

Education: North Dakota State University - M.S., Soil Science (Wetland Soils Genesis)
North Dakota State University - B.S., Earth Science

Certifications: Professional Soil Classifier # 68, State of North Dakota

Professional Membership:

- Member and Past-President, ND Chapter of the Soil & Water Conservation Society
- Member and Past-President, Professional Soil Classifiers Association of North Dakota
- Past Director - National Board, Current National Chair of Environmental Assessment Committee, Member, Environmental Information Association
- Past Director - Board, North Dakota Solid Waste & Recycling Association
- Member, ASTM, Member E-50 Committee
- Member, North Dakota Geological Society
- Director, High Plains Business Opportunities Association
- Member, Environmental Assessment Association
- Registered Professional Soil Classifier, Number 68, North Dakota Board of Registered Professional Soil Classifiers
- Governor-appointed member of the North Dakota Board of Registered Professional Soil Classifiers, Current

Training: Hydrogeomorphic Approach to Assessment of Wetland Function in Temporary and Seasonal Pothole Wetlands
NDDOT - Wetland Delineation Workshop

7.0 References

Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service. Available online: <https://www.fws.gov/wetlands/documents/classification-of-wetlands-and-deepwater-habitats-of-the-united-states.pdf>

Google Earth Website. <https://www.earthpoint.us/Townships.aspx>

Natural Resources Conservation Service. United States Department of Agriculture. Plants Database. <https://plants.sc.egov.usda.gov/home>

North Dakota Department Of Transportation, 2014. Wetland Delineation Workshop (handbook/binder)

U.S. Drought Monitor Website <https://droughtmonitor.unl.edu>

U.S. Army Corps of Engineers. 1987. US Army Corps of Engineers Wetlands Delineation Manual. Available on line at:

<https://usace.contentdm.oclc.org/digital/collection/p266001coll1/id/4532>

U.S. Army Corps of Engineers, March 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0). Available online:

<https://usace.contentdm.oclc.org/utills/getfile/collection/p266001coll1/id/7613>

U.S. Army Corps of Engineers. National Wetland Plant List. Available online:

https://wetland-plants.sec.usace.army.mil/nwpl_static/v34/home/home.html

United States Fish and Wildlife Service. National Wetlands Inventory. Available on line:

<https://www.fws.gov/wetlands/data/Mapper.html> Accessed August 2021.

United States Geological Survey <https://gishubdata-ndgov.hub.arcgis.com/datasets/ndgishub-quad-index/explore?location=46.783830%2C-100.598065%2C11.45>

Appendix A

Appendix A. Location Map



Aquatic Resource Delineation – Casselton Robert Miller Regional Airport

The Survey area was mostly located in Section 14, T139N, R52W, but also included portions of the SW Quarter of Section 13, T139N, R52W, the NW Quarter of Section 24, T139N, R52W, and the NE Quarter of the NE Quarter of Section 23, T139N, R52W. The NW corner of the Site was approximately one mile south of Interstate 94 and South of Casselton, North Dakota.

Cass County, North Dakota
Google Earth Image –March 2021



Appendix A
Aquatic Resource Delineation
Casselton Robert Miller Regional Airport
Mead County, North Dakota
Project 101

Legend

-  WPC Survey Point
-  WPC Wetlands
-  Survey Area



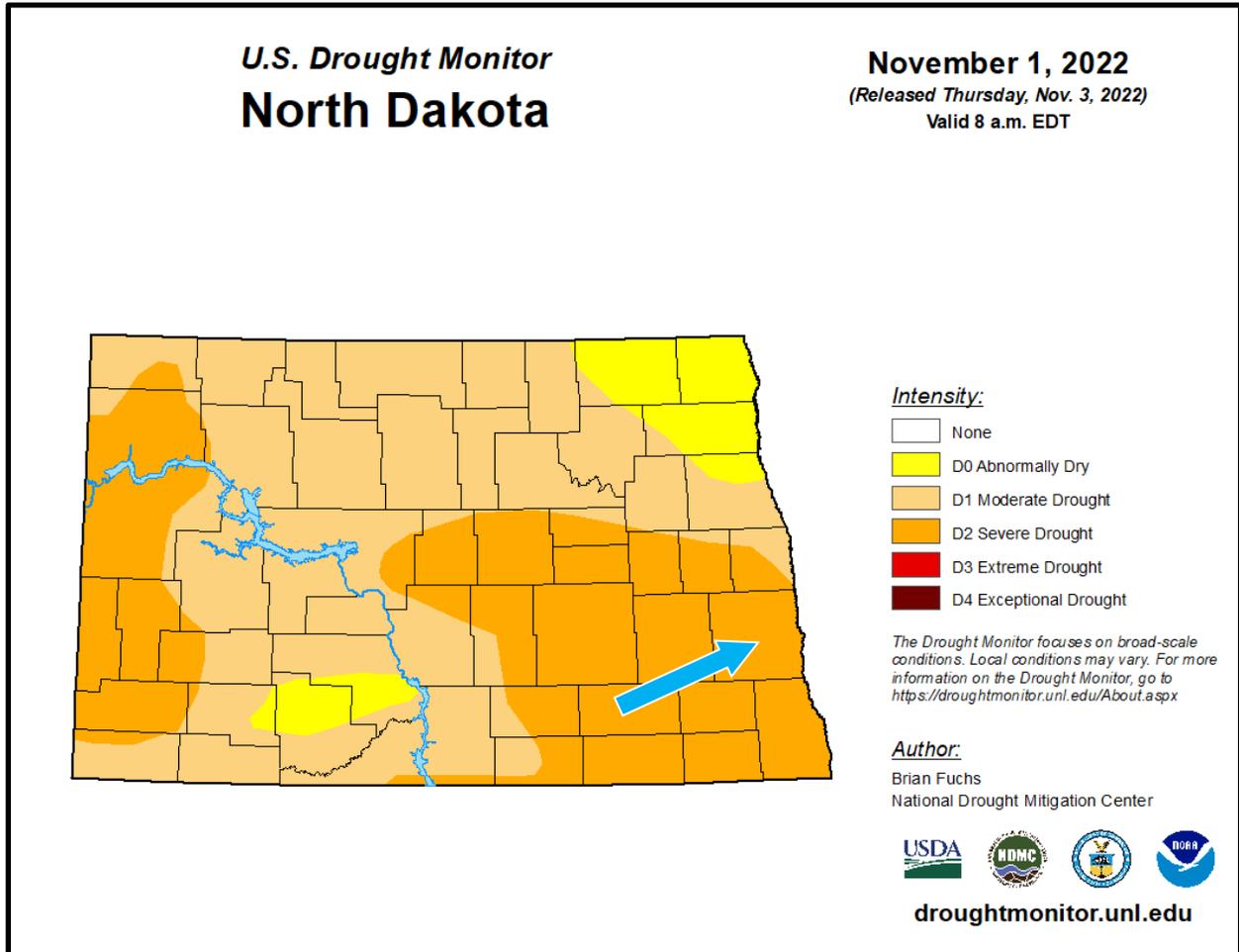
Produced by:
 Western Plains, Consulting, Inc.
 1102 S Washington St, Ste 210
 Bismarck, ND 58504
 Date Created: January 4, 2023
 Datum: WGS 1984
 Projection: State Plane North Dakota S FIPS 3302 (US feet)
 Scale: 1:5,510
 This map has been compiled from various State and Federal electronic sources for visual purposes only. No warranties, expressed or implied, accompany this map.
 Service Layer Credits: Copyright: @USDA Maxar

These data delineate the areal extent of wetlands and surface waters as defined by Corvardin (1979). The National Wetlands Inventory - Version 2, Surface Waters and Wetland Inventory was derived by retaining the wetland and deepwater polygons and compose the NWI digital wetlands spatial data layer and reintroducing any linear wetland or surface water features that were orphaned from the original NWI hard copy maps by converting them to narrow polygonal features. The NWI is a product of the U.S. Fish and Wildlife Service.

Wetland 4H
 Casselton Robert Miller Regional Airport
 Community Maps Contributions, County of Cass, ND, State of North Dakota, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc., MET/NASA, USGS, EPA, NPS, US Census Bureau, USDA, Maxar

Appendix B

The U.S. Drought Monitor information below is self-explanatory. The map was found on Web page <https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?ND>. The blue arrow points to the survey area.



The U.S. Drought Monitor information below lists data for Cass County, ND. The data table was found on Web page <https://droughtmonitor.unl.edu/DmData/DataTables.aspx>.

U.S. Drought Monitor

Current Map | Maps | **Data** | Summary | About | Conditions & Outlooks | En Español | NADM

Data Tables Home > Data > Data Tables

The values in this table are for places represented as areas. To see the drought status of areas represented by points, please visit [this page](#).

Area type: County | Area: Cass County (ND) | Statistics type: Cumulative Percent Area

USDM 7-day Change

Percent Area in U.S. Drought Monitor Categories

Show 25 rows | Copy | CSV | Excel | PDF | Print | Search:

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4	DSCI
2022-12-13	0.00	100.00	100.00	100.00	0.00	0.00	300
2022-12-06	0.00	100.00	100.00	100.00	0.00	0.00	300
2022-11-29	0.00	100.00	100.00	100.00	0.00	0.00	300
2022-11-22	0.00	100.00	100.00	100.00	0.00	0.00	300
2022-11-15	0.00	100.00	100.00	100.00	0.00	0.00	300
2022-11-08	0.00	100.00	100.00	100.00	0.00	0.00	300
2022-11-01	0.00	100.00	100.00	100.00	0.00	0.00	300
2022-10-25	0.00	100.00	100.00	0.00	0.00	0.00	200
2022-10-18	0.00	100.00	100.00	0.00	0.00	0.00	200
2022-10-11	0.00	100.00	86.82	0.00	0.00	0.00	187
2022-10-04	0.00	100.00	0.62	0.00	0.00	0.00	101
2022-09-27	0.00	100.00	0.00	0.00	0.00	0.00	100
2022-09-20	14.66	85.34	0.00	0.00	0.00	0.00	85
2022-09-13	96.82	3.18	0.00	0.00	0.00	0.00	3

This screen capture only shows data from 9/13/2022 through 12/13/2022. The percentage of the area in Cass County, ND in category D2 (severe drought) was listed as 100 percent from around the survey date on 11/1/2022 through 12/13/2022. The drought conditions in the month prior to the survey were only within the abnormally dry or moderate drought conditions, showing a downward trend.

Category	Description	Possible Impacts	Ranges					Objective Drought Indicator Blends (Percentiles)
			Palmer Drought Severity Index (PDSI)	CPC Soil Moisture Model (Percentiles)	USGS Weekly Streamflow (Percentiles)	Standardized Precipitation Index (SPI)		
D0	Abnormally Dry	<p>Going into drought:</p> <ul style="list-style-type: none"> short-term dryness slowing planting, growth of crops or pastures <p>Coming out of drought:</p> <ul style="list-style-type: none"> some lingering water deficits pastures or crops not fully recovered 	-1.0 to -1.9	21 to 30	21 to 30	-0.5 to -0.7	21 to 30	
D1	Moderate Drought	<ul style="list-style-type: none"> Some damage to crops, pastures Streams, reservoirs, or wells low, some water shortages developing or imminent Voluntary water-use restrictions requested 	-2.0 to -2.9	11 to 20	11 to 20	-0.8 to -1.2	11 to 20	
2	Severe Drought	<ul style="list-style-type: none"> Crop or pasture losses likely Water shortages common Water restrictions imposed 	-3.0 to -3.9	6 to 10	6 to 10	-1.3 to -1.5	6 to 10	
D3	Extreme Drought	<ul style="list-style-type: none"> Major crop/pasture losses Widespread water shortages or restrictions 	-4.0 to -4.9	3 to 5	3 to 5	-1.6 to -1.9	3 to 5	
D4	Exceptional Drought	<ul style="list-style-type: none"> Exceptional and widespread crop/pasture losses Shortages of water in reservoirs, streams, and wells creating water emergencies 	-5.0 or less	0 to 2	0 to 2	-2.0 or less	0 to 2	

Appendix C



Photo 1. Non-Wetland 1 Point. Survey point for Non-Wetland Point 1 was located in the foreground of the photo near the edge of the tilled farmland on the mowed airport property. November 2, 2022 view northwest.

Photo 2. Upland 1 Point. View of the soils for the Upland point (Upl-1) for Wetland 1. The soil had salts present in the upper layer where mixing was present. The lighter layer present had a high value and chroma which characterized it as an upland soil. November 2, 2022.





Photo 3 at left. Wetland 1 Point. View of Wetland 1B toward the culvert that connects to Wetland 1A. Near the clipboard in the foreground was the Wetland Point (W-1) for Wetland 1. The presence of Rushes (*Juncus sp.*), which are commonly a wetland plant species, and a hydric soil made the classification of a wetland. November 2, 2022 view northwest.



Photo 4 at right. Wetland 1A. View of Wetland 1A which had the same characteristics as Wetland 1B and was connected by the culvert under the airport taxiway. November 2, 2022 view southeast.



Photo 5 at left. View of Wetland 2A . Wetland 2A was mowed and was located between the airport runway and taxiway. November 2, 2022 view southeast.



Photo 6 at left. Wetland 2 Point (W-2). View of where the survey point in foreground for Wetland 2 was located. Wetland 2 consisted of Rushes (*Juncus sp.*), Common Knotweed (*Polygonum arenastrum*), and Western Wheatgrass (*Pascopyrum smithii*). Hydric soils were also present indicating the wetland status for this area. November 2, 2022 view southeast.

Photo 7 at right. Upland 2 Point (Upl-2). The upland point for Wetland 2 was dominated by upland grasses and hydric soils were not present. November 2, 2022



Photo 8 at left. View of Wetland 2B. Wetland 2B was connected to Wetland 2A by a culvert located in the background (red arrow) that goes underneath the taxiway. November 2, 2022 view northwest.



Photo 9 at left. Non-Wetland 2 Point was located to the southwest of Wetland 2B to the southwest of the taxi-way. The soils in this area were not hydric because of the high value and chroma that was present in the B horizon. November 2, 2022.

Photo 10 at right. View of Non-Wetland 2. November 2, 2022 view southeast.

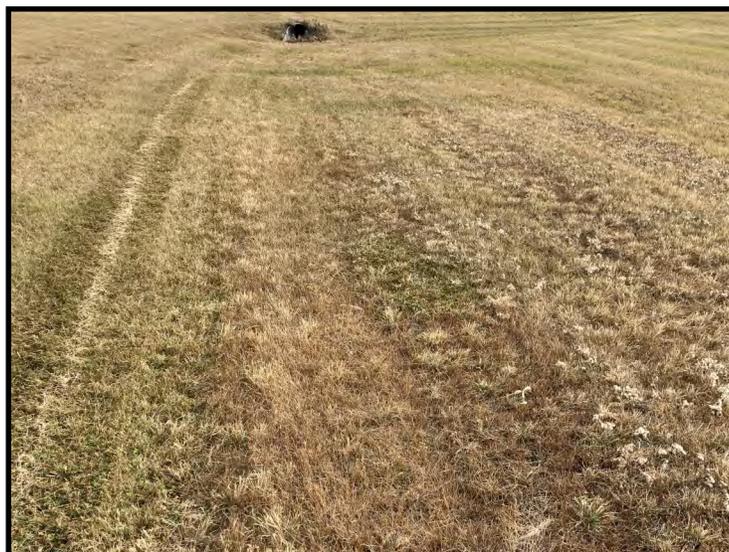


Photo 11 at left. Brightly colored soils mentioned in photo 9. Presence of the lightly colored soils indicate there was no wetland present. November 2, 2022



Photo 12 at left. Non-Wetland 3 Point. November 2, 2022. Soils from Non-Wetland 3 survey that were similar to the soils shown in photo 11. The Value and Chroma of the soils had too high of a value to be characterized as a hydric soil.

Photo 13 at right. Non-Wetland 3 point view. Area from where the survey in photo 12 was taken. Rushes (*Juncus sp.*), were present but the lack of hydric soils and strong hydrology indicated that a wetland was not present. November 2, 2022 view northwest.



Photo 14 at left. Wetland 3 point (W-3) November 2, 2022 view southwest. Wetland 3 sampling point was located near the equipment in the middle of the photo. Water appeared to have been ponding in this area after moving through the culvert in the background of the photo. Wetland vegetation, soils, and hydrology were present here.



Photo 15 at left. Upland 3 Point (Upl-3). Upland 3 point was dominated by upland grasses such as Kentucky Bluegrass (*Poa pratensis*) and Common Dandelion (*Taraxacum officinale*). Hydrology and hydric soils were not present. November 2, 2022.

Photo 16 at right. Wetland 4 Point (W-4). November 3, 2022. View of the hydric soils that were present for the Wetland 4 area.



Photo 17 at left. Stand of Cattails (*Typha sp.*) present within Wetland 4A. November 3, 2022 view southeast.

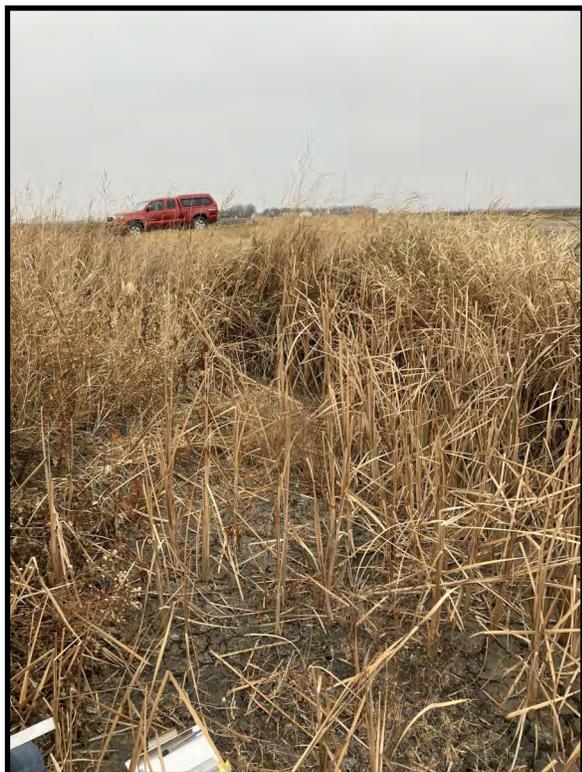


Photo 18 at left. Another view of the stand of cattails within Wetland 4A. November 3, 2022 view north.

Photo 19 at right. Upland 4 Point (Upl-4) location for the Wetland 4 area. November 3, 2022 view southeast.



Photo 20 at left. Wetland 4B on the south side of the gravel road ditch and to the north of a farm field. The geomorphology of the ditch seemed to allow ponding and water collection. November 3, 2022 view east.



Photo 21 at left. Wetland 4D had some crop remnants within most of the wetland, but the soils and hydrology of the area classified it as a wetland. November 3, 2022 view west.

Photo 22 at right. Culvert on the edge of Wetland 4E connecting it to Wetland 4D. The stand of undisturbed grass at this point consisted of Reed canary grass (*Phalaris arundinacea*) and Prairie Cordgrass (*Spartina pectinata*). Both of these grass species are wetland indicators. November 3, 2022 view south-east.



Photo 23 at left. View of Wetland 4E. This area also had an abundant amount of crop remnants within the ditch. November 3, 2022 view west.



Photo 24 at left. Wetland 4E Point. This was an additional survey point to confirm that the ditches on both sides of the road have hydric soils present. November 3, 2022.

Photo 25 at right. Wetland 4H. A dense stand of Cattails (*Typha sp.*) and Prairie Cordgrass (*Spartina pectinata*) November 3, 2022 view northwest.

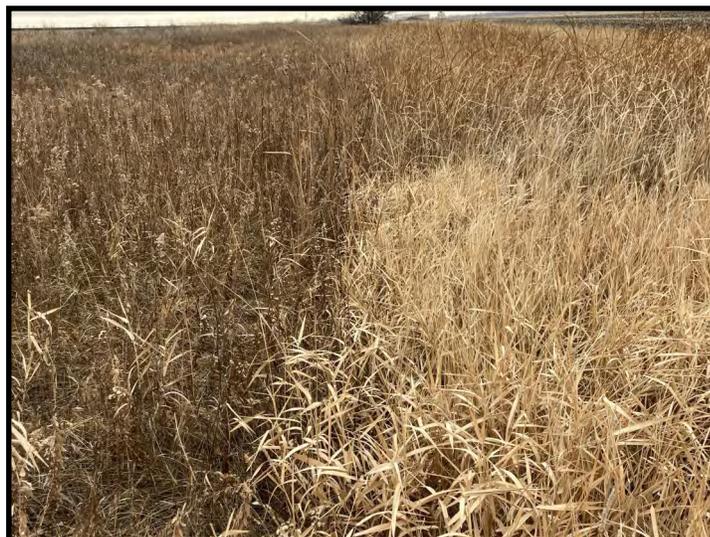


Photo 26 at left. Wetland 4H. Curled Dock (*Rumex crispus*) within the same wetland area in photo 25. November 3, 2022 view southeast.



Photo 27 at left. Wetland 4H. Closer view of some Curled Dock (*Rumex crispus*) which has a facultative wetland indicator status. November 3, 2022 view west.

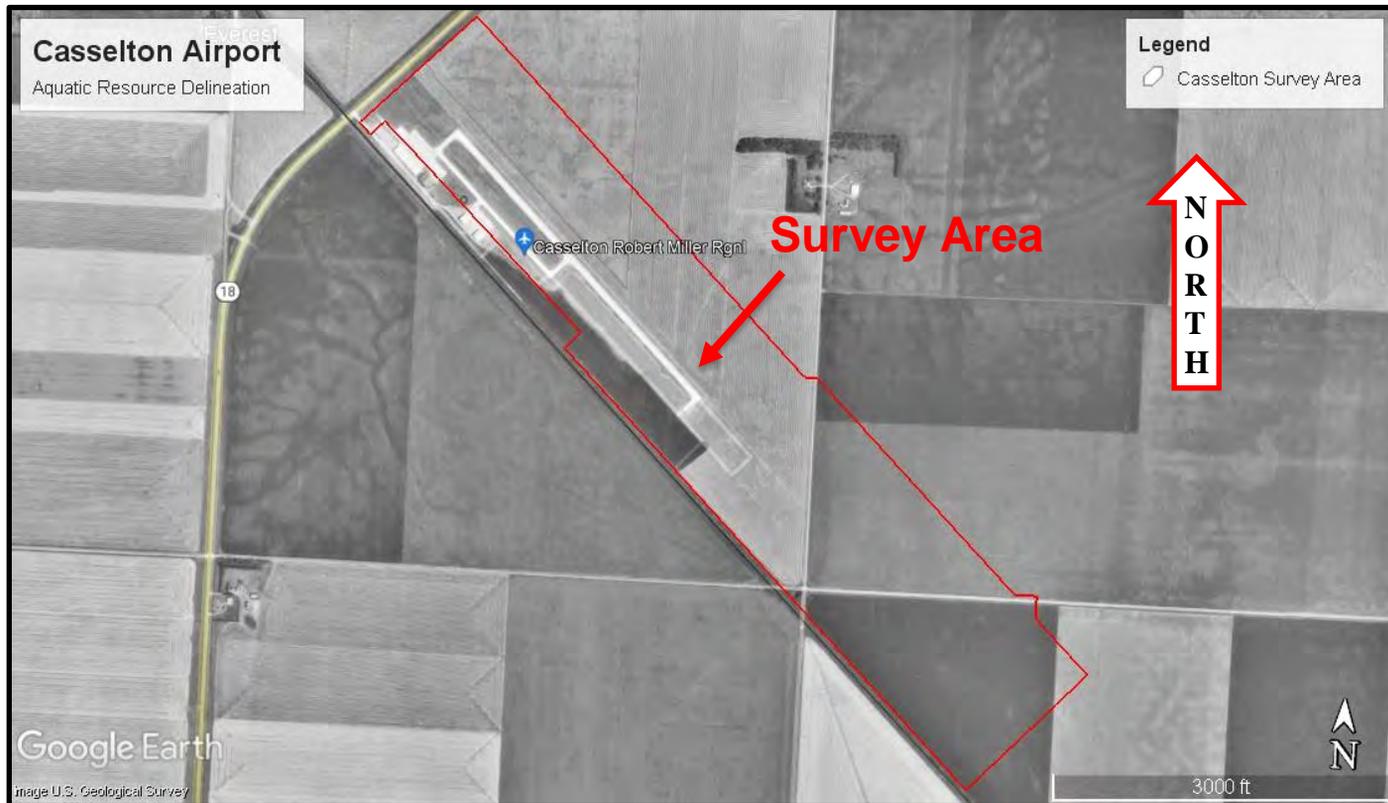
Photo 28 at right. View of Wetland 4H directly northeast of the railroad tracks (off-Site). November 3, 2022 view northwest.



Photo 29 at left. Water present within Wetland 4H. November 3, 2022

Appendix C. Aerial Photographs

1990



The Survey Area was portions of Section 14, portions of the SW Quarter of Section 13, portions of the NE Quarter of the NE Quarter of Section 23, and portions of the NW Quarter of Section 24, T.139N., R. 52W. Part of the Survey Area in Section 14 was already developed as the Casselton Airport. The rest of the survey area appears to be used for agricultural purposes. There were developed roads along the section lines. There appears to be some possible wetlands between the runway and taxiway nearest to the developed buildings. There also appears to be some indications of a wetland around the intersection of the roads developed in the survey area.

Cass County, North Dakota
Google Earth Image



Appendix C. Aerial Photographs

1997



Part of the Survey Area in Section 14 was already developed as the Casselton Airport. The airport appeared to have lengthened the runway and taxiway from the 1990 aerial photograph. The rest of the survey area appears to be used for agricultural purposes. There were developed roads along the section lines. There appears to be some indications of a wetland around the intersection of the roads developed in the survey area.

Cass County, North Dakota
Google Earth Image



Appendix C. Aerial Photographs 2003



Part of the Survey Area in Section 14 was already developed as the Casselton Airport. The rest of the survey area appears to be used for agricultural purposes. There were developed roads along the section lines. There seems to be indication of wetlands between the airport runways and taxiways.

Cass County, North Dakota
Google Earth Image



Appendix C. Aerial Photographs

2009



Part of the Survey Area in Section 14 was already developed as the Casselton Airport. The rest of the survey area appears to be used for agricultural purposes. There were developed roads along the section lines. There seems to be indication of wetlands between the airport runways and taxiways. The appears to be increased hydrology between the railroad south of the survey area and the agricultural fields that were adjacent.

Cass County, North Dakota
Google Earth Image



Appendix C. Aerial Photographs

2010



Part of the Survey Area in Section 14 was already developed as the Casselton Airport. The rest of the survey area appears to be used for agricultural purposes.

There were developed roads along the section lines. The area between the runway and taxiway appears to have multiple areas where wetlands may be present.

Cass County, North Dakota
Google Earth Image



Appendix C. Aerial Photographs 2016



Part of the Survey Area in Section 14 was already developed as the Casselton Airport. The rest of the survey area appears to be used for agricultural purposes.

There were developed roads along the section lines. The area between the runway and taxiway appears to have multiple areas where wetlands may be present, although it was less apparent than the 2010 aerial photograph.

Cass County, North Dakota
Google Earth Image



Appendix C. Aerial Photographs

2021



Part of the Survey Area in Section 14 was already developed as the Casselton Airport. The rest of the survey area appears to be used for agricultural purposes. There were developed roads along the section lines. Some small possible wetland areas can be noted between the runway and taxiway of the airport. There also seems to be some possible wetlands at the intersection of the developed roads in the survey area.

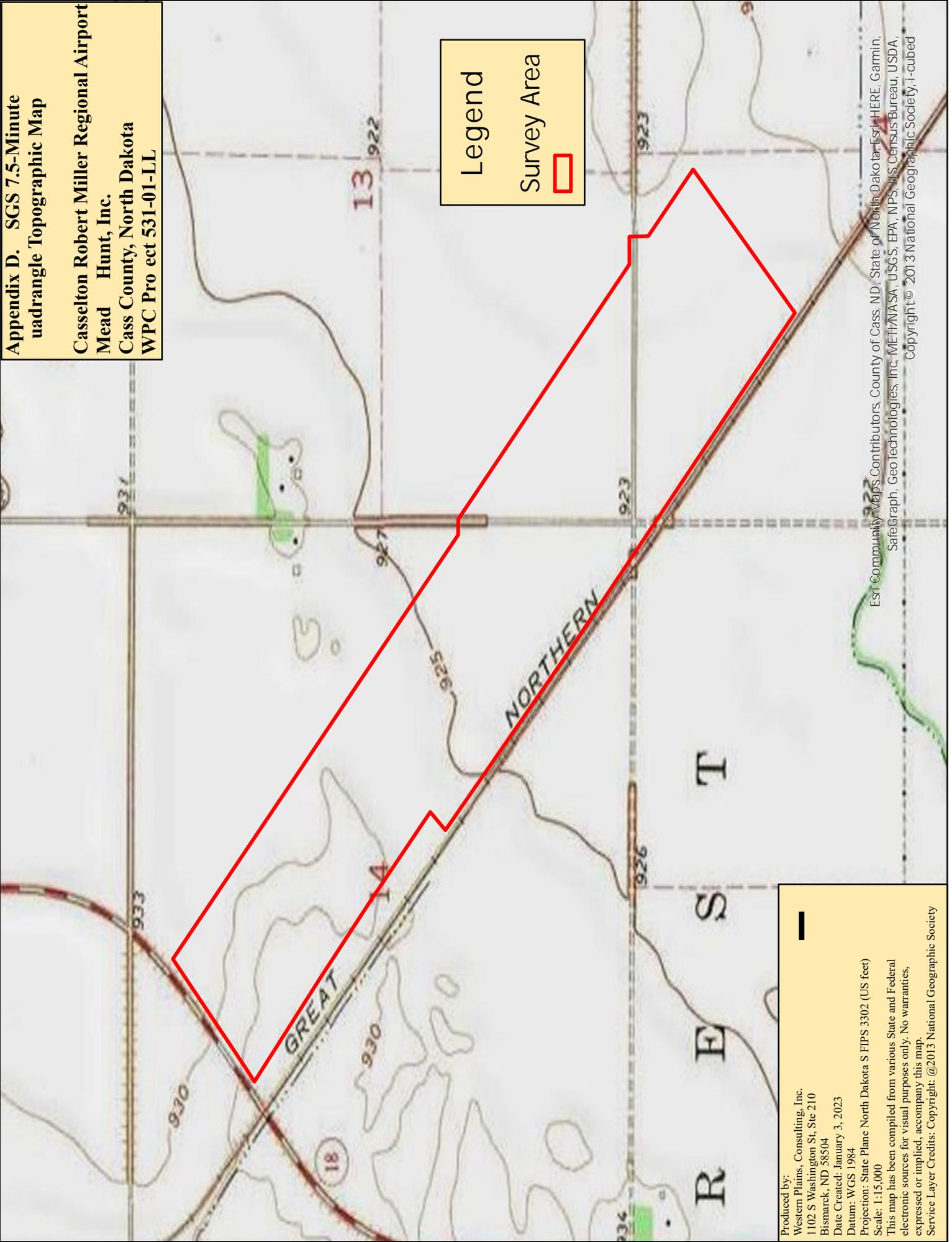
Cass County, North Dakota
Google Earth Image



Appendix D

**Appendix D. SGS 7.5-Minute
quadrangle Topographic Map**
**Casselton Robert Miller Regional Airport
Mead Hunt, Inc.
Cass County, North Dakota
WPC Project 531-01-LL**

Legend
Survey Area



Produced by:
Western Plains, Consulting, Inc.
1102 S Washington St, Ste 210
Bismarck, ND 58504
Date Created: January 3, 2023
Datum: WGS 1984
Projection: State Plane North Dakota S FIPS 3302 (US feet)
Scale: 1:15,000
This map has been compiled from various State and Federal
electronic sources for visual purposes only. No warranties,
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Appendix D. National Wetland Inventory Map
Casselton Robert Miller Regional Airport
Mead Hunt, Inc.
Cass, North Dakota
WPC Project 531-01-LL



Legend

- NWI Wetlands
- Survey Area

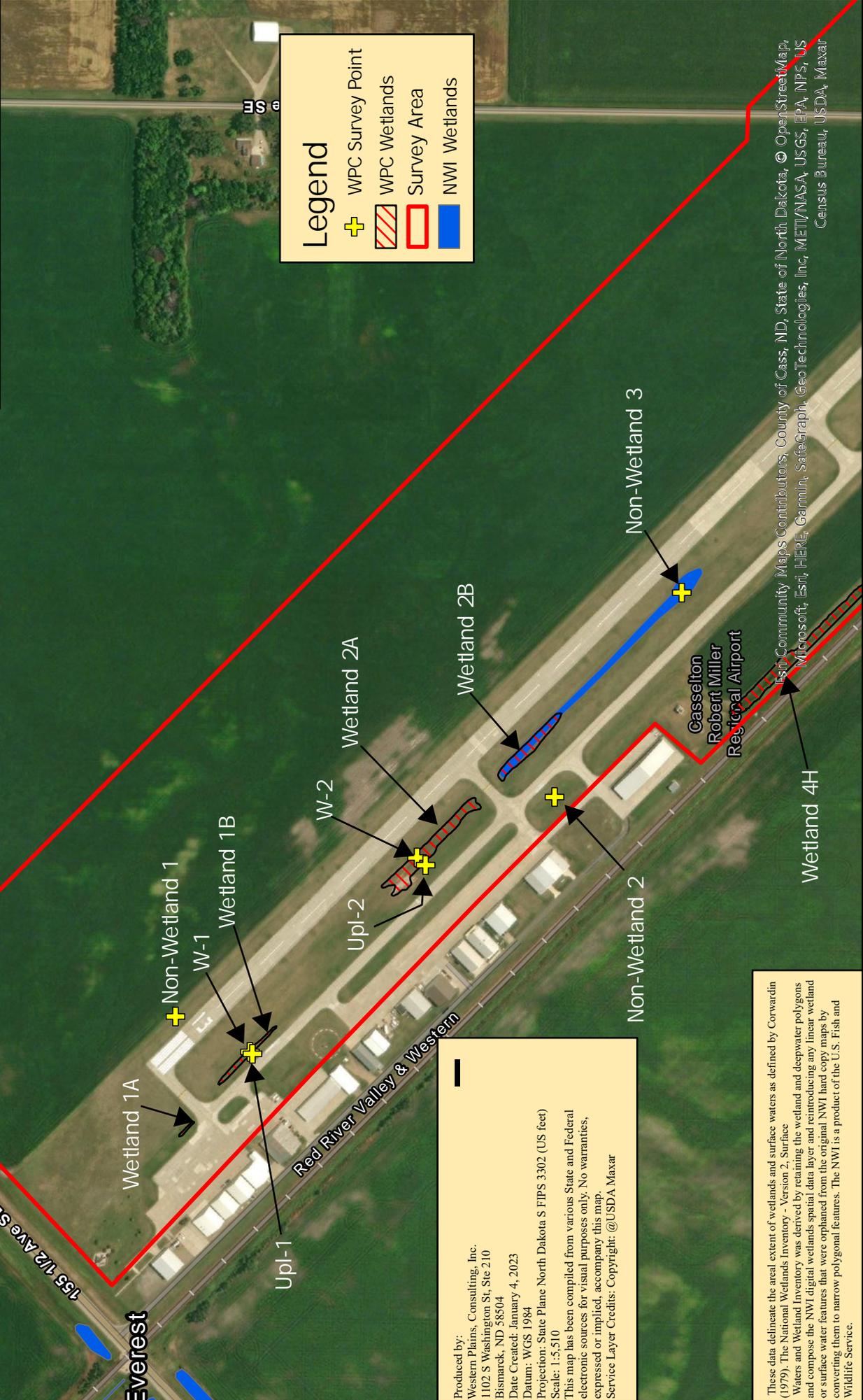
Produced by:
 Western Plains, Consulting, Inc.
 1102 S Washington St, Ste 210
 Bismarck, ND 58504
 Date Created: January 3, 2023
 Datum: WGS 1984
 Projection: State Plane North Dakota S FIPS 3302 (US feet)
 Scale: 1:11,000
 This map has been compiled from various State and Federal electronic sources for visual purposes only. No warranties, expressed or implied, accompany this map.
 Service Layer Credits: Copyright: @USDA Maxar

These data delineate the areal extent of wetlands and surface waters as defined by Conrardin et al. (1979). The National Wetlands Inventory - Version 2, Surface Waters and Wetland Inventory was derived by retaining the wetland and deepwater polygons and composing the NWI digital wetlands spatial data layer and reintroducing any linear wetland or surface water features that were orphaned from the original NWI hard copy maps by converting them to narrow polygonal features. The NWI is a product of the U.S. Fish and Wildlife Service.

Esri Community Maps Contributors, County of Cass, ND, State of North Dakota, Esri, HERE, Garmin, SafeGraph, Geotechnologies, Inc., METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, Maxar

Appendix D. NWI Map
NWI Features Overlay on WPC-Mapped
Aquatic Resource Delineations

Casselton Robert Miller Regional Airport
Mead Hunt, Inc.
Cass County, North Dakota
WPC Project 531-01-LL



Legend

- + WPC Survey Point
- WPC Wetlands
- Survey Area
- NWI Wetlands

Produced by:
 Western Plains, Consulting, Inc.
 1102 S Washington St, Ste 210
 Bismarck, ND 58504
 Date Created: January 4, 2023
 Datum: WGS 1984
 Projection: State Plane North Dakota S FIPS 3302 (US feet)
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 Service Layer Credits: Copyright: @USDA Maxar

These data delineate the areal extent of wetlands and surface waters as defined by Corwardin (1979). The National Wetlands Inventory - Version 2, Surface Waters and Wetland Inventory was derived by retaining the wetland and deepwater polygons and compose the NWI digital wetlands spatial data layer and reintroducing any linear wetland or surface water features that were obtained from the original NWI hard copy maps by converting them to narrow polygonal features. The NWI is a product of the U.S. Fish and Wildlife Service.

Esri, Community Maps Contributors, County of Cass, ND, State of North Dakota, © OpenStreetMap, MET/NASA, USGS, EPA, NPS, US Census Bureau, USDA, Maxar

WETLANDS AND DEEPWATER HABITATS CLASSIFICATION

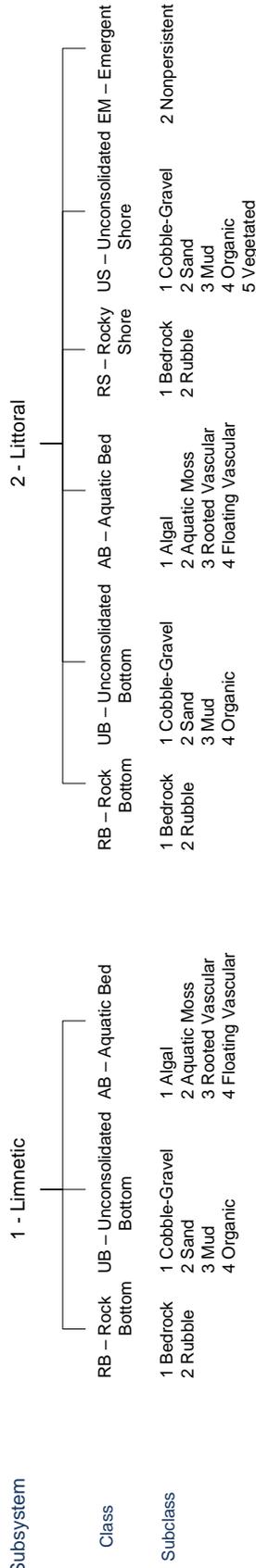
System

L - Lacustrine

Subsystem

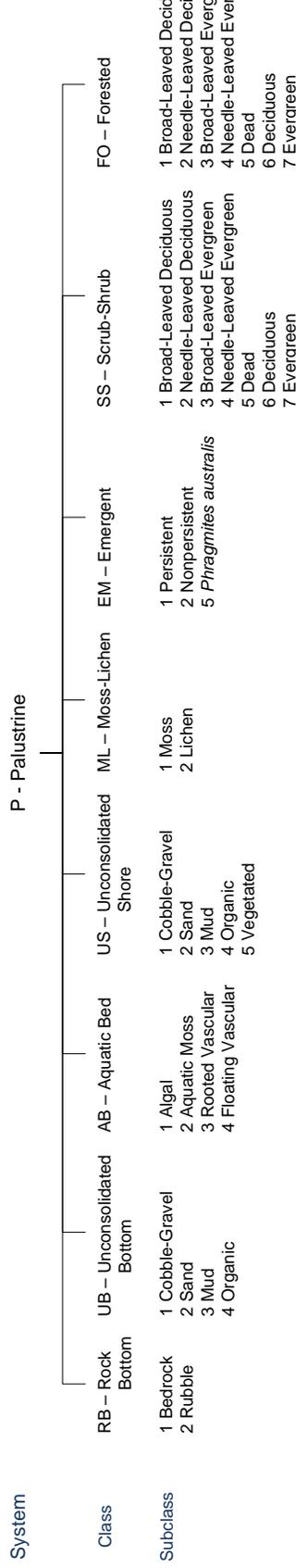
1 - Littoral

2 - Littoral



System

P - Palustrine

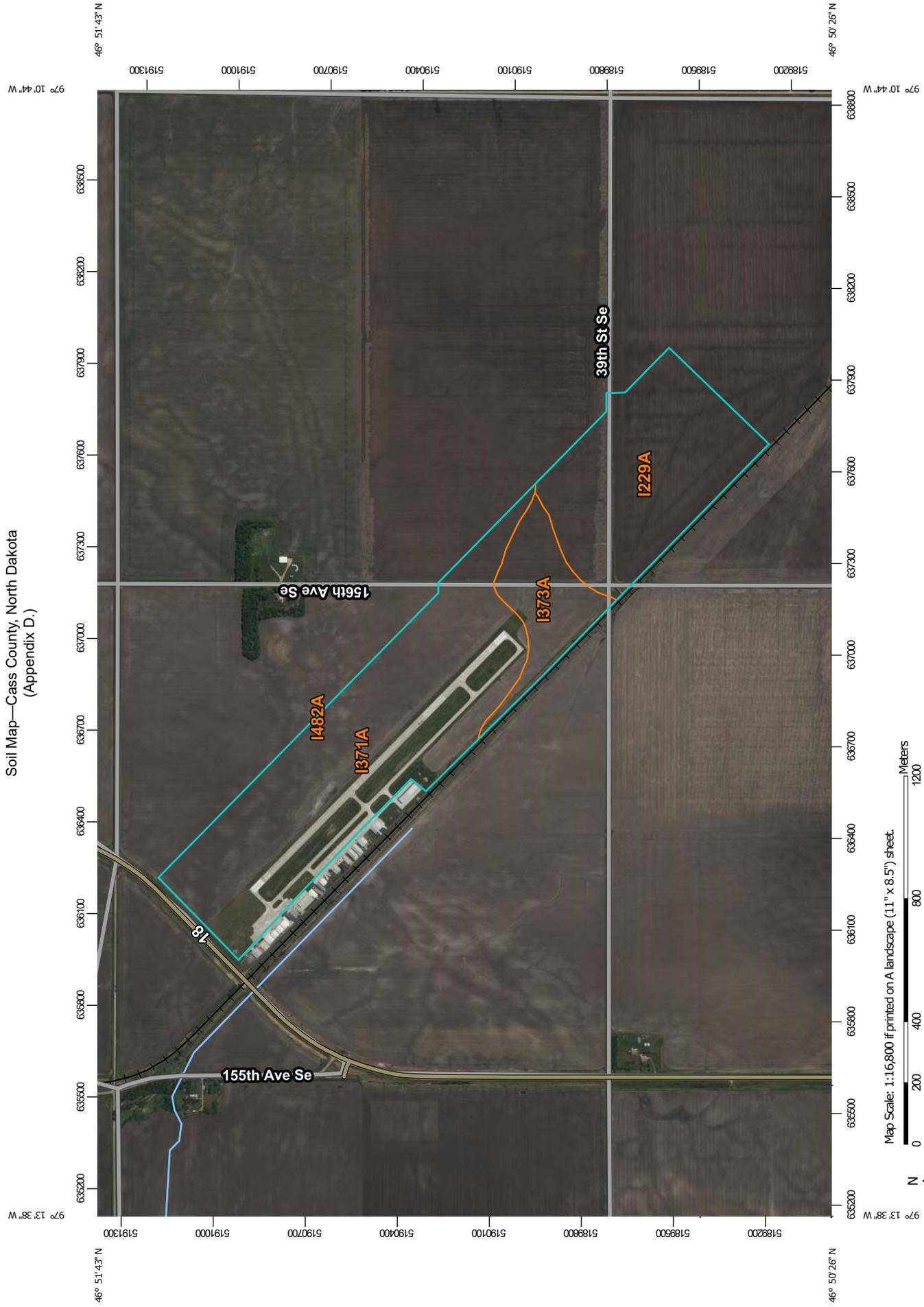


MODIFIERS

In order to more adequately describe the wetland and deepwater habitats, one or more of the water regime, water chemistry, soil, or special modifiers may be applied at the class or lower level in the hierarchy. The farmed modifier may also be applied to the ecological system.

	Water Regime		Special Modifiers	Water Chemistry		Soil
	Nontidal	Tidal		Coastal	Inland	
A	Temporarily Flooded	Subtidal	b Beaver	1 Hyperhaline	7 Hypersaline	g Organic
B	Saturated	Irregularly Exposed	d Partly Drained/Ditched	2 Euhaline	8 Eusaline	n Mineral
C	Seasonally Flooded	Regularly Flooded	f Farmed	3 Mixohaline (Brackish)	9 Mixosaline	
E	Seasonally Flooded/ Saturated	Irregularly Flooded	h Diked/Impounded	4 Polyhaline	0 Fresh	
F	Semi-permanently Flooded	Permanently Flooded-Tidal	r Artificial	5 Mesohaline		
G	Intermittently Exposed	Temporarily Flooded-Tidal	s Spoil	6 Oligohaline		
H	Permanently Flooded	Seasonally Flooded-Tidal	x Excavated	0 Fresh		
J	Intermittently Flooded	Regularly Flooded				
K	Artificially Flooded	Irregularly Flooded				

Soil Map—Cass County, North Dakota
(Appendix D.)



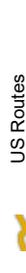
Map Scale: 1:16,800 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84



MAP LEGEND

 Area of Interest (AOI)	 Spoil Area
 Soils	 Stony Spot
 Soil Map Unit Polygons	 Very Stony Spot
 Soil Map Unit Lines	 Wet Spot
 Soil Map Unit Points	 Other
 Special Point Features	 Special Line Features
 Blowout	 Streams and Canals
 Borrow Pit	 RAILS
 Clay Spot	 Interstate Highways
 Closed Depression	 US Routes
 Gravel Pit	 Major Roads
 Gravelly Spot	 Local Roads
 Landfill	 Background
 Lava Flow	 Aerial Photography
 Marsh or swamp	
 Mine or Quarry	
 Miscellaneous Water	
 Perennial Water	
 Rock Outcrop	
 Saline Spot	
 Sandy Spot	
 Severely Eroded Spot	
 Sinkhole	
 Slide or Slip	
 Sodic Spot	

MAP INFORMATION

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

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

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

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

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

Soil Survey Area: Cass County, North Dakota
Survey Area Data: Version 22, Sep 8, 2022

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

Date(s) aerial images were photographed: May 24, 2021—Jun 12, 2021

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
I229A	Fargo silty clay, 0 to 1 percent slopes	80.1	31.9%
I371A	Bearden-Kindred silty clay loams, 0 to 2 percent slopes	142.1	56.6%
I373A	Kindred-Bearden silty clay loams, 0 to 2 percent slopes	28.8	11.5%
I482A	Overly-Bearden silt loams, 0 to 2 percent slopes	0.1	0.0%
Totals for Area of Interest		251.1	100.0%

Report—Hydric Soil List - All Components

Hydric Soil List - All Components—ND017-Cass County, North Dakota					
Map symbol and map unit name	Component/Local Phase	Comp. pct.	Landform	Hydric status	Hydric criteria met (code)
I229A: Fargo silty clay, 0 to 1 percent slopes	Fargo	80	Flats	Yes	2,3
	Hegne	10	Flats	Yes	2,3
	Dovray	7	Drainageways	Yes	2,3
	Ryan	3	Flats	Yes	2,3
I371A: Bearden-Kindred silty clay loams, 0 to 2 percent slopes	Bearden	40	Flats	No	—
	Kindred	35	Flats	No	—
	Bearden-Slightly saline	10	Flats	No	—
	Perella	10	Depressions	Yes	2
	Colvin	5	Depressions	Yes	2
I373A: Kindred-Bearden silty clay loams, 0 to 2 percent slopes	Kindred	50	Flats	No	—
	Bearden	30	Flats	No	—
	Perella	10	Depressions	Yes	2
	Bearden-Moderately saline	5	Flats	No	—
	Overly	5	Flats	No	—
I482A: Overly-Bearden silt loams, 0 to 2 percent slopes	Overly	45	Flats	No	—
	Bearden	30	Flats	No	—
	Perella	10	Depressions	Yes	2
	Kindred	10	Flats	No	—
	Bearden-Moderately saline	5	Flats	No	—

Data Source Information

Soil Survey Area: Cass County, North Dakota

Survey Area Data: Version 22, Sep 8, 2022

Appendix E

APPENDIX E. WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Casselton Robert Miller Regional Airport City: Casselton County: Cass Sampling Date: 11/2/2022
 Applicant/Owner: Mead & Hunt, Inc. State: N.Dakota Sampling Point/Wetland ID: W-1
 Investigator(s): Lance Loken, Lawrence Mettler Section, Township, Range: SE Qtr - NW Qtr Sec. 14 T.139N R.52W
 Landform (hillslope, terrace, etc.): Plain Local Relief (concave, convex, none): concave Slope % 0-3%
 Subregion (LRR): F Lat: 46.856787 Long: -97.213146 Datum: WGS 84
 Soil Map Unit Name: Bearden-Kindred silty clay loams, 0 to 2 percent slopes NWI Classification: (see Remarks)

Are climatic / hydrologic conditions in and around the site typical for this time of year? No

Are Vegetation No ; Soil No ; or Hydrology No significantly disturbed? Are "Normal Circumstances" present? No
 Are Vegetation No ; Soil No ; or Hydrology No 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Site was in severe drought conditions according to the U.S Drought Monitor. Sample Point was taken inside of Wetland 1B which was near the north end of the runway between the runway and taxiway. The NWI did not have this wetland in the database. However, the wetland was classified as a Freshwater emergent wetland (PEM1C) in the field.	

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC -): <u>1</u> (A) Total Number of Dominant Species across all Strata: <u>2</u> (B)
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
= Total Cover				Percent of Dominant Species that are OBL, FACW, or FAC: <u>50%</u> (A/B) Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0%</u> x 1 <u>0</u> FACW species <u>75%</u> x 2 <u>1.5</u> FAC species <u>0%</u> x 3 <u>0</u> FACU species <u>20%</u> x 4 <u>0.8</u> UPL species <u> </u> x 5 <u> </u> Column Totals: <u>0.95</u> (A) <u>2.3</u> (B) Prevalence Index = B/A = <u>2.42</u>
Sapling/Shrub Stratum (Plot size: <u> </u>)				
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
= Total Cover				
Herb Stratum (Plot size: <u>5' radius</u>)				
1. <u>Kentucky Blue Grass(Poa pratensis)</u>	<u>20%</u>	<u>No</u>	<u>FACU</u>	
2. <u>Juncus sp.</u>	<u>75%</u>	<u>Yes</u>	<u>FACW</u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
95% = Total Cover				
Woody Vine Stratum (Plot size: <u> </u>)				
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
100% = Total Cover				
% Bare Ground in Herb Stratum <u>5%</u>				
Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>				

Remarks: Hydric vegetation was present in the area of the sample. The area was mowed because it was part of the airport property.

APPENDIX E. WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Casselton Robert Miller Regional Airport City: Casselton County: Cass Sampling Date: 11/2/2022
 Applicant/Owner: Mead & Hunt, Inc. State: N.Dakota Sampling Point/Wetland ID: UPL-1
 Investigator(s): Lance Loken, Lawrence Mettler Section, Township, Range: SE Qtr - NW Qtr Sec. 14 T.139N R.52W
 Landform (hillslope, terrace, etc.): Plain Local Relief (concave, convex, none): none Slope % 0-3%
 Subregion (LRR): F Lat: 46.856763 Long: 97.213171 Datum: WGS 84
 Soil Map Unit Name: Bearden-Kindred silty clay loams, 0 to 2 percent slopes NWI Classification: _____

Are climatic / hydrologic conditions in and around the site typical for this time of year? No

Are Vegetation No ; Soil No ; or Hydrology No significantly disturbed? Are "Normal Circumstances" present? No
 Are Vegetation No ; Soil No ; or Hydrology No 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 <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: Site was in severe drought conditions according to the U.S Drought Monitor. Sample Point was taken outside of Wetland 1B which was near the north end of the runway between the runway and taxiway.	

VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
(Plot size: _____)				Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC -): <u>0</u> (A)
1. _____				Total Number of Dominant Species across all Strata: <u>2</u> (B)
2. _____				
3. _____				
4. _____				
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Percent of Dominant Species that are OBL, FACW, or FAC: <u>0%</u> (A/B)
1. _____				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0%</u> x 1 <u>0</u> FACW species <u>3%</u> x 2 <u>0.06</u> FAC species <u>0%</u> x 3 <u>0</u> FACU species <u>60%</u> x 4 <u>2.4</u> UPL species _____ x 5 _____ Column Totals: <u>0.63</u> (A) <u>2.46</u> (B) Prevalence Index = B/A = <u>3.90</u>
2. _____				
3. _____				
4. _____				
5. _____				
= Total Cover				
Herb Stratum (Plot size: <u>5' radius</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is > 50% _____ 3 - Prevalence Index is ≤ 3.0 * _____ 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet). _____ Problematic Hydrophytic Vegetation* (Explain) _____ * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Kentucky Blue Grass(Poa pratensis)</u>	<u>60%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Smooth Brome (Bromus inermis)</u>	<u>40%</u>	<u>Yes</u>	<u>UPL</u>	
3. <u>Hordeum jubatum(Fox-Tail Barley)</u>	<u>3%</u>	<u>No</u>	<u>FACW</u>	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
<u>103%</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. _____				
2. _____				
= Total Cover				
% Bare Ground in Herb Stratum <u>5%</u>				
Remarks: Hydric vegetation was not present in the area of the sample. The area was mowed because it was a part of the airport, but was dominated by upland grasses.				

SOIL

Sampling Point/Wetland ID: W-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features				Texture	Remarks	
	Color (moist)		%	Color (moist)	%	Type*	Loc**			
0 - 6	2.5Y	2.5 / 1	90%	2.5Y	8 / 1	10%		M	CL	Salt Crystals
6 - 12	2.5Y	4 / 2	55%						CL	Mixed - construction activity
	2.5Y	2.5 / 1	45%						CL	remnants of past activity.
12 16+	2.5Y	4 / 2	55%	7.5YR	4 / 4	30%	C	M	SiCL	
				7.5YR	2.5 / 1	15%	C	M	SiCL	
-										
-										
-										

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils***:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside MLRA 72 & 73)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input checked="" type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)		
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)		

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

Restrictive Layer (if present):	Hydric Soil Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
Type: _____					
Depth (inches): _____					

Remarks: The soil appears to have been affected by the development present within the area. The soil did not clearly meet any of the established hydric soil indicators, but WPC is using "Other" as the hydric soil indicator. The 6 to 12 inch horizon shows evidence from apparent past construction mixing. The 12 to 16+ horizon with the 2 chroma and redox features does not meet any specific hydric soil indicator, but WPC considers this "Other" due to presence of hydrophytic vegetation and hydrology indicators, and WPC's opinion is that this soil is behaving as a wetland soil.

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one required: check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	(where tilled)	
<input type="checkbox"/> Drift Deposits (B3)	(where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Water Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)	

Field Observations:	Wetland Hydrology Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____					
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____					
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____					
(includes capillary fringe)					

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

Remarks: Severe Drought was present as indicated in the U.S. Drought Monitor.

APPENDIX E. WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Casselton Robert Miller Regional Airport City: Casselton County: Cass Sampling Date: 11/2/2022
 Applicant/Owner: Mead & Hunt, Inc. State: N.Dakota Sampling Point/Wetland ID: UPL-2
 Investigator(s): Lance Loken, Lawrence Mettler Section, Township, Range: SW Qtr - NE Qtr Sec. 14 T.139N R.52W
 Landform (hillslope, terrace, etc.): Plain Local Relief (concave, convex, none): none Slope % 0-3%
 Subregion (LRR): F Lat: 46.855147 Long: -97.210559 Datum: WGS 84
 Soil Map Unit Name: Bearden-Kindred silty clay loams, 0 to 2 percent slopes NWI Classification: _____

Are climatic / hydrologic conditions in and around the site typical for this time of year? No

Are Vegetation No ; Soil No ; or Hydrology No significantly disturbed? Are "Normal Circumstances" present? No
 Are Vegetation No ; Soil No ; or Hydrology No 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 <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: Site was in severe drought conditions according to the U.S Drought Monitor. Sample Point was taken outside of Wetland 2A which was between the runway and taxiway.	

VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
(Plot size: _____)				Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC -): <u>0</u> (A)
1. _____				Total Number of Dominant Species across all Strata: <u>2</u> (B)
2. _____				
3. _____				
4. _____				
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Percent of Dominant Species that are OBL, FACW, or FAC: <u>0%</u> (A/B)
1. _____				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0%</u> x 1 <u>0</u> FACW species <u>0%</u> x 2 <u>0</u> FAC species <u>0%</u> x 3 <u>0</u> FACU species <u>60%</u> x 4 <u>2.4</u> UPL species _____ x 5 _____ Column Totals: <u>0.6</u> (A) <u>2.4</u> (B) Prevalence Index = B/A = <u>4.00</u>
2. _____				
3. _____				
4. _____				
5. _____				
= Total Cover				
Herb Stratum (Plot size: <u>5' radius</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 * <input type="checkbox"/> 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet). <input type="checkbox"/> Problematic Hydrophytic Vegetation* (Explain) _____ * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Kentucky Blue Grass(Poa pratensis)</u>	<u>50%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Smooth Brome (Bromus inermis)</u>	<u>50%</u>	<u>Yes</u>	<u>UPL</u>	
3. <u>Taraxacum officinale(Common Dandelion)</u>	<u>10%</u>	<u>No</u>	<u>FACU</u>	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
<u>110%</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. _____				
2. _____				
= Total Cover				
% Bare Ground in Herb Stratum				
Remarks: Hydric vegetation was not present in the area of the sample. The area was mowed because it was a part of the airport, but was dominated by upland grasses.				

SOIL

Sampling Point/Wetland ID: UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type*	Loc**			
0 - 4	2.5Y 2.5 / 1	80%	2.5Y 8 / 1	20%		M	CL	Salt Crystals	
4 - 8	2.5Y 2.5 / 1	100%					CL		
8 - 12	2.5Y 2.5 / 1	55%	5YR 4 / 6	5%	C	M	SiCL	Redox was relic	
	2.5YR 4 / 2	40%							
12 - 16+	2.5Y 4 / 3	75%	5YR 4 / 4	25%	C	M	SiCL	Contemporary Redox	
-									
-									
-									

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils***:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside MLRA 72 & 73)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	*** Indicators of hydrophytic vegetations and wetland hydrology must be present, unless disturbed or problematic.	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)		

Restrictive Layer (if present):	Hydric Soil Present?	Yes	No	X
Type: _____				
Depth (inches): _____				

Remarks: Note 3 Chroma from 12 to 16 inches with redox features noted. The 3 chroma present means this was a non-wetland soil.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required: check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	(where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water Stained Leaves (B9)	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
(where not tilled)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:	Wetland Hydrology Present?	Yes	No	X
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
(includes capillary fringe)				

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

Remarks: Severe Drought was present as indicated in the U.S. Drought Monitor.

APPENDIX E. WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Casselton Robert Miller Regional Airport City: Casselton County: Cass Sampling Date: 11/2/2022
 Applicant/Owner: Mead & Hunt, Inc. State: N.Dakota Sampling Point/Wetland ID: W-3
 Investigator(s): Lance Loken, Lawrence Mettler Section, Township, Range: SE Qtr - SE Qtr Sec. 14 T.139N R.52W
 Landform (hillslope, terrace, etc.): Plain Local Relief (concave, convex, none): concave Slope % 0-3%
 Subregion (LRR): F Lat: 46.850648 Long: -97.204007 Datum: WGS 84
 Soil Map Unit Name: Bearden-Kindred silty clay loams, 0 to 2 percent slopes NWI Classification: (see Remarks)

Are climatic / hydrologic conditions in and around the site typical for this time of year? No

Are Vegetation No ; Soil No ; or Hydrology No significantly disturbed? Are "Normal Circumstances" present? No
 Are Vegetation No ; Soil No ; or Hydrology No 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Site was in severe drought conditions according to the U.S Drought Monitor. Sample Point was taken inside of Wetland 3 which was near the south end of the runway between the runway and taxiway. The NWI did not have this wetland in there database. However, the wetland was classified as a Freshwater emergent wetland (PEM1C) in the field.	

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC -): <u>1</u> (A) Total Number of Dominant Species across all Strata: <u>2</u> (B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				Percent of Dominant Species that are OBL, FACW, or FAC: <u>50%</u> (A/B) Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0%</u> x 1 <u>0</u> FACW species <u>85%</u> x 2 <u>1.7</u> FAC species <u>0%</u> x 3 <u>0</u> FACU species <u>2%</u> x 4 <u>0.08</u> UPL species _____ x 5 _____ Column Totals: <u>0.87</u> (A) <u>1.78</u> (B) Prevalence Index = B/A = <u>2.05</u>
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot size: <u>5' radius</u>)				
1. <u>Juncus sp.</u>	<u>85%</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation Meets 2 - Dominance Test is > 50% 3 - Prevalence Index is ≤ 3.0 * Meets 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet). Problematic Hydrophytic Vegetation* (Explain) * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
2. <u>Kentucky Blue Grass(Poa pratensis)</u>	<u>2%</u>	<u>No</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
87% = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
112% = Total Cover				
% Bare Ground in Herb Stratum <u>25%</u>				

Remarks: Hydric vegetation was present in the area of the sample. The area was mowed because it was part of the airport property.

APPENDIX E. WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Casselton Robert Miller Regional Airport City: Casselton County: Cass Sampling Date: 11/2/2022
 Applicant/Owner: Mead & Hunt, Inc. State: N.Dakota Sampling Point/Wetland ID: UPL-3
 Investigator(s): Lance Loken, Lawrence Mettler Section, Township, Range: SE Qtr - SE Qtr Sec. 14 T.139N R.52W
 Landform (hillslope, terrace, etc.): Plain Local Relief (concave, convex, none): none Slope % 0-3%
 Subregion (LRR): F Lat: 46.850641 Long: -97.204085 Datum: WGS 84
 Soil Map Unit Name: Bearden-Kindred silty clay loams, 0 to 2 percent slopes NWI Classification: _____

Are climatic / hydrologic conditions in and around the site typical for this time of year? No

Are Vegetation No ; Soil No ; or Hydrology No significantly disturbed? Are "Normal Circumstances" present? No
 Are Vegetation No ; Soil No ; or Hydrology No 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 <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: Site was in severe drought conditions according to the U.S Drought Monitor. Sample Point was taken outside of Wetland 3 which was near the south end of the runway between the runway and taxiway.	

VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
(Plot size: _____)				Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC -): <u>0</u> (A)
1. _____				Total Number of Dominant Species across all Strata: <u>2</u> (B)
2. _____				
3. _____				
4. _____				
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Percent of Dominant Species that are OBL, FACW, or FAC: <u>0%</u> (A/B)
1. _____				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0%</u> x 1 <u>0</u> FACW species <u>0%</u> x 2 <u>0</u> FAC species <u>0%</u> x 3 <u>0</u> FACU species <u>55%</u> x 4 <u>2.2</u> UPL species _____ x 5 _____ Column Totals: <u>0.55</u> (A) <u>2.2</u> (B) Prevalence Index = B/A = <u>4.00</u>
2. _____				
3. _____				
4. _____				
5. _____				
= Total Cover				
Herb Stratum (Plot size: <u>5' radius</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is > 50% _____ 3 - Prevalence Index is ≤ 3.0 * _____ 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet). _____ Problematic Hydrophytic Vegetation* (Explain) _____ * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Kentucky Blue Grass(Poa pratensis)</u>	<u>50%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Smooth Brome (Bromus inermis)</u>	<u>50%</u>	<u>Yes</u>	<u>UPL</u>	
3. <u>Taraxacum officinale(Common Dandelion)</u>	<u>5%</u>	<u>No</u>	<u>FACU</u>	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
105% = Total Cover				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. _____				
2. _____				
110% = Total Cover				
% Bare Ground in Herb Stratum <u>5%</u>				
Remarks: Hydric vegetation was not present in the area of the sample. The area was mowed because it was a part of the airport, but was dominated by upland grasses.				

SOIL

Sampling Point/Wetland ID: UPL-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features				Texture	Remarks	
	Color (moist)		%	Color (moist)	%	Type*	Loc**			
0 - 12	2.5Y	2.5 / 1	90%	2.5Y	8 / 1	10%		M	CL	Salt
12 - 15	2.5Y	4 / 2	100%						SiCL	
15 - 23	2.5Y	4 / 3	90%	2.5Y	7 / 1	10%		M	CL	SLM
-										
-										
-										
-										

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils***:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside MLRA 72 & 73)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	*** Indicators of hydrophytic vegetations and wetland hydrology must be present, unless disturbed or problematic.	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)		

Restrictive Layer (if present):	Hydric Soil Present?	Yes	No	X
Type: _____				
Depth (inches): _____				

Remarks: Note: 3 Chroma from 15 to 23 inches means this was a non-wetland soil. Also 2 chroma had no redox features from 12 to 15 inches, again confirming a non-wetland soil.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required: check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	(where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water Stained Leaves (B9)	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
(where not tilled)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:	Wetland Hydrology Present?	Yes	No	X
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
(includes capillary fringe)				

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

Remarks: Severe Drought was present as indicated in the U.S. Drought Monitor.

APPENDIX E. WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Casselton Robert Miller Regional Airport City: Casselton County: Cass Sampling Date: 11/3/2022
 Applicant/Owner: Mead & Hunt, Inc. State: N.Dakota Sampling Point/Wetland ID: W-4
 Investigator(s): Lance Loken, Lawrence Mettler Section, Township, Range: NW Qtr - NW Qtr Sec. 24 T.139N R.52W
 Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): concave Slope % 0-3%
 Subregion (LRR): F Lat: 46.847071 Long: -97.200369 Datum: WGS 84
 Soil Map Unit Name: Fargo silty clay, 0 to 1 percent slopes NWI Classification: (see Remarks)

Are climatic / hydrologic conditions in and around the site typical for this time of year? No

Are Vegetation No ; Soil No ; or Hydrology No significantly disturbed? Are "Normal Circumstances" present? No
 Are Vegetation No ; Soil No ; or Hydrology No 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Site was in severe drought conditions according to the U.S Drought Monitor. Sample Point was taken inside of Wetland 4A which was near the intersection of 156th Ave SE and 39th St SE. The NWI did not have this wetland in there database. However, the wetland was classified as a Freshwater emergent wetland (PEMfx) in the field.	

VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
(Plot size: _____)				Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC -): <u>2</u> (A)
1. _____				Total Number of Dominant Species across all Strata: <u>2</u> (B)
2. _____				
3. _____				
4. _____				
= Total Cover				
Sapling/Shrub Stratum				Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)
(Plot size: _____)				
1. _____				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>30%</u> x 1 <u>0.3</u> FACW species <u>40%</u> x 2 <u>0.8</u> FAC species <u>0%</u> x 3 <u>0</u> FACU species <u>0%</u> x 4 <u>0</u> UPL species _____ x 5 _____ Column Totals: <u>0.7</u> (A) <u>1.1</u> (B) Prevalence Index = B/A = <u>1.57</u>
2. _____				
3. _____				
4. _____				
5. _____				
= Total Cover				
Herb Stratum				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation Meets 2 - Dominance Test is > 50% Meets 3 - Prevalence Index is ≤ 3.0 * Meets 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet). Problematic Hydrophytic Vegetation* (Explain) _____ * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
(Plot size: <u>5' radius</u>)				
1. <u>Reed Canary Grass(Phalaris arundinacea)</u>	<u>40%</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Typha sp. (Cattails)</u>	<u>30%</u>	<u>Yes</u>	<u>OBL</u>	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
70% = Total Cover				
Woody Vine Stratum				Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>
(Plot size: _____)				
1. _____				
2. _____				
100% = Total Cover				
% Bare Ground in Herb Stratum	<u>30%</u>			

Remarks: Hydric vegetation was present in the area of the sample.

SOIL

Sampling Point/Wetland ID: W-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix			Redox Features				Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type*	Loc**		
0 - 4	2.5Y 3 / 1		100%					CL	Compaction Evident
4 - 7	2.5Y 3 / 1		45%					SiCL	Mixed Layer from past construction activity
	2.5Y 4 / 2		55%						
7 - 13	2.5Y 4 / 2		90%	2.5Y 7 / 2	10%		M	CL	Soft Lime Masses
13 - 24	2.5Y 4 / 2		75%	2.5Y 7 / 2	25%		M	CL	Soft Lime Masses
-									
-									
-									

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils***:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside MLRA 72 & 73)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input checked="" type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)		
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)		

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

Restrictive Layer (if present):	Hydric Soil Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
Type: <u>Compaction evidence >7"</u>					
Depth (inches): <u>7"</u>					

Remarks: The surface soil appears to have been affected by the development present within the area. The soil did not clearly meet any of the established hydric soil indicators, but WPC is using "Other" as the hydric soil indicator. The 13 to 24 horizon had 2 chroma with no redox features, but the soil did not meet any of the hydric soil indicators. WPC considers this to be "Other", and with the hydrophytic vegetation and hydrology indicators, it is WPC's opinion that this soil is behaving as a wetland soil.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required: check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	(where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input checked="" type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water Stained Leaves (B9)	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
(where not tilled)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:	Wetland Hydrology Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____					
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____					
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____					
(includes capillary fringe)					

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

Remarks: Severe Drought was present as indicated in the U.S. Drought Monitor.

APPENDIX E. WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Casselton Robert Miller Regional Airport City: Casselton County: Cass Sampling Date: 11/3/2022
 Applicant/Owner: Mead & Hunt, Inc. State: N.Dakota Sampling Point/Wetland ID: W-4E
 Investigator(s): Lance Loken, Lawrence Mettler Section, Township, Range: SW Qtr - SW Qtr Sec. 13 T.139N R.52W
 Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): concave Slope % 0-3%
 Subregion (LRR): F Lat: 46.847231 Long: -97.198806 Datum: WGS 84
 Soil Map Unit Name: Fargo silty clay, 0 to 1 percent slopes NWI Classification: (see Remarks)

Are climatic / hydrologic conditions in and around the site typical for this time of year? No

Are Vegetation No ; Soil No ; or Hydrology No significantly disturbed? Are "Normal Circumstances" present? No
 Are Vegetation No ; Soil No ; or Hydrology No 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Site was in severe drought conditions according to the U.S Drought Monitor. Sample Point was taken inside of Wetland 4E which was within the ditch north of 39th St SE. The NWI did not have this wetland in there database. However, the wetland was classified as a Freshwater emergent wetland (PEMFX) in the field.	

VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
(Plot size: _____)				Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC -): <u>2</u> (A)
1. _____	_____	_____	_____	Total Number of Dominant Species across all Strata: <u>2</u> (B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				
Sapling/Shrub Stratum				Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)
(Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0%</u> x 1 <u>0</u> FACW species <u>80%</u> x 2 <u>1.6</u> FAC species <u>0%</u> x 3 <u>0</u> FACU species <u>0%</u> x 4 <u>0</u> UPL species _____ x 5 _____ Column Totals: <u>0.8</u> (A) <u>1.6</u> (B) Prevalence Index = B/A = <u>2.00</u>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
Herb Stratum				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation Meets 2 - Dominance Test is > 50% Meets 3 - Prevalence Index is ≤ 3.0 * 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet). Problematic Hydrophytic Vegetation* (Explain) * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
(Plot size: <u>5' radius</u>)				
1. <u>Juncus sp.</u>	<u>30%</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Reed Canary Grass(Phalaris arundinacea)</u>	<u>30%</u>	<u>Yes</u>	<u>FACW</u>	
3. <u>Spartina pectinata(Freshwater Cord Grass)</u>	<u>20%</u>	<u>No</u>	<u>FACW</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
80% = Total Cover				
Woody Vine Stratum				
(Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
100% = Total Cover				
% Bare Ground in Herb Stratum				
Remarks: Hydric vegetation was present in the area of the sample. A large amount of crop residue was present within the mowed ditch.				

SOIL

Sampling Point/Wetland ID: W-4E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 - 4	2.5Y 2.5 / 1	90%	2.5Y 8 / 1	10%		M	CL	Salt Crystals
4 - 8	2.5Y 2.5 / 1	100%					CL	
8 - 14	2.5Y 4 / 2	55%	10YR 4 / 4	5%	C	M	SiCL	Deep mixing present
	2.5Y 2.5 / 1	40%						
14 - 30	2.5Y 3 / 2	75%	2.5Y 7 / 2	20%			CL	Soft Lime Masses
-			10YR 4 / 4	5%	C	M		
-								
-								

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils***:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside MLRA 72 & 73)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input checked="" type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)		
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)		

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

Restrictive Layer (if present):	Hydric Soil Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
Type: <u>Compaction at Surface</u>					
Depth (inches): <u>0</u>					

Remarks: The soils from 8 to 14 inches appear to have been affected by the road development present within the area. The soil did not clearly meet any of the established hydric soil indicators, but WPC is using "Other" as the hydric soil indicator. The 14 to 30 horizon had 2 chroma with redox features, but the soil did not meet any of the hydric soil indicators. WPC considers this to be "Other", and with the hydrophytic vegetation and hydrology indicators, it is WPC's opinion that this soil is behaving as a wetland soil.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required: check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3)	(where not tilled)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input checked="" type="checkbox"/> Water Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
	(where tilled)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input checked="" type="checkbox"/> Geomorphic Position (D2)
	<input type="checkbox"/> FAC-Neutral Test (D5)
	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)

Field Observations:	Wetland Hydrology Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____					
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____					
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____					
(includes capillary fringe)					

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

Remarks: Severe Drought was present as indicated in the U.S. Drought Monitor.

APPENDIX E. WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Casselton Robert Miller Regional Airport City: Casselton County: Cass Sampling Date: 11/3/2022
 Applicant/Owner: Mead & Hunt, Inc. State: N.Dakota Sampling Point/Wetland ID: UPL-4
 Investigator(s): Lance Loken, Lawrence Mettler Section, Township, Range: SW Qtr - SW Qtr Sec. 13 T.139N R.52W
 Landform (hillslope, terrace, etc.): Plain Local Relief (concave, convex, none): none Slope % 0-3%
 Subregion (LRR): F Lat: 46.847271 Long: -97.200399 Datum: WGS 84
 Soil Map Unit Name: Fargo silty clay, 0 to 1 percent slopes NWI Classification: _____

Are climatic / hydrologic conditions in and around the site typical for this time of year? No
 Are Vegetation No ; Soil No ; or Hydrology No significantly disturbed? Are "Normal Circumstances" present? No
 Are Vegetation No ; Soil No ; or Hydrology No 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 <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: Site was in severe drought conditions according to the U.S Drought Monitor. Sample Point was taken outside of Wetland 4G which was near the intersection of 156th Ave SE and 39th St SE.	

VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
(Plot size: _____)				Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC -): <u>0</u> (A)
1. _____	_____	_____	_____	Total Number of Dominant Species across all Strata: <u>2</u> (B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Percent of Dominant Species that are OBL, FACW, or FAC: <u>0%</u> (A/B)
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0%</u> x 1 <u>0</u> FACW species <u>23%</u> x 2 <u>0.46</u> FAC species <u>0%</u> x 3 <u>0</u> FACU species <u>35%</u> x 4 <u>1.4</u> UPL species _____ x 5 _____ Column Totals: <u>0.58</u> (A) <u>1.86</u> (B) Prevalence Index = B/A = <u>3.21</u>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot size: <u>5' radius</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is > 50% _____ 3 - Prevalence Index is ≤ 3.0 * _____ 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet). _____ Problematic Hydrophytic Vegetation* (Explain) _____ * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Kentucky Blue Grass(Poa pratensis)</u>	<u>35%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Smooth Brome (Bromus inermis)</u>	<u>35%</u>	<u>Yes</u>	<u>UPL</u>	
3. <u>Hordeum jubatum(Fox-Tail Barley)</u>	<u>3%</u>	<u>No</u>	<u>FACW</u>	
4. <u>Reed Canary Grass(Phalaris arundinacea)</u>	<u>20%</u>	<u>No</u>	<u>FACW</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>93%</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
<u>100%</u> = Total Cover				
% Bare Ground in Herb Stratum <u>7%</u>				

Remarks: Hydric vegetation was not present in the area of the sample. The area was partially mowed because it was near an approach and road ditch. The area was dominated by upland grasses.

SOIL

Sampling Point/Wetland ID: UPL-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 - 12	2.5Y 2.5 / 1	100%					CL	
12 - 14	2.5Y 2.5 / 1	85%	2.5Y 8 / 1	15%		M	CL	Salt Crystals
14 - 17	2.5Y 4 / 2	90%	2.5Y 8 / 1	10%		M	SiCL	Salt Crystals
17 - 27	2.5Y 4 / 3	95%	7.5YR 4 / 4	5%	C	M	SiCL	
-								
-								
-								

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils***:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside MLRA 72 & 73)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	*** Indicators of hydrophytic vegetations and wetland hydrology must be present, unless disturbed or problematic.	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)		

Restrictive Layer (if present):	Hydric Soil Present?	Yes	No	X
Type: <u>Compact middle to surface</u>				
Depth (inches): _____				

Remarks: Note: 3 Chroma 17 to 27 inches with redox features, and from 14 to 17 inches was 2 chroma with no redox features. This was a non-wetland soil.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required: check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	(where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water Stained Leaves (B9)	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
(where not tilled)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:	Wetland Hydrology Present?	Yes	No	X
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
(includes capillary fringe)				

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

Remarks: Severe Drought was present as indicated in the U.S. Drought Monitor.

APPENDIX E. WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Casselton Robert Miller Regional Airport City: Casselton County: Cass Sampling Date: 11/2/2022
 Applicant/Owner: Mead & Hunt, Inc. State: N.Dakota Sampling Point/Wetland ID: Non-W1
 Investigator(s): Lance Loken, Lawrence Mettler Section, Township, Range: SE Qtr - NW Qtr Sec. 14 T.139N R.52W
 Landform (hillslope, terrace, etc.): Plain Local Relief (concave, convex, none): concave Slope % 0-3%
 Subregion (LRR): F Lat: 46.857495 Long: -97.212674 Datum: WGS 84
 Soil Map Unit Name: Bearden-Kindred silty clay loams, 0 to 2 percent slopes NWI Classification: _____

Are climatic / hydrologic conditions in and around the site typical for this time of year? No

Are Vegetation No ; Soil No ; or Hydrology No significantly disturbed? Are "Normal Circumstances" present? No
 Are Vegetation No ; Soil No ; or Hydrology No 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 <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: Site was in severe drought conditions according to the U.S Drought Monitor. Sample Point was taken between the airport runway and the tilled farmland. Slight concave area lead to the sampling of this area for hydric soils. Normal conditions no present, drought ongoing.	

VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
(Plot size: _____)				Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC -): <u>0</u> (A)
1. _____	_____	_____	_____	Total Number of Dominant Species across all Strata: <u>2</u> (B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Percent of Dominant Species that are OBL, FACW, or FAC: <u>0%</u> (A/B)
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0%</u> x 1 <u>0</u> FACW species <u>0%</u> x 2 <u>0</u> FAC species <u>0%</u> x 3 <u>0</u> FACU species <u>55%</u> x 4 <u>2.2</u> UPL species _____ x 5 _____ Column Totals: <u>0.55</u> (A) <u>2.2</u> (B) Prevalence Index = B/A = <u>4.00</u>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot size: <u>5' radius</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is > 50% _____ 3 - Prevalence Index is ≤ 3.0 * _____ 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet). _____ Problematic Hydrophytic Vegetation* (Explain) _____ * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Smooth Brome (Bromus inermus)</u>	<u>65%</u>	<u>Yes</u>	<u>UPL</u>	
2. <u>Kentucky Blue Grass(Poa pratensis)</u>	<u>45%</u>	<u>Yes</u>	<u>FACU</u>	
3. <u>Taraxacum officinale(Common Dandelion)</u>	<u>10%</u>	<u>No</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
120% = Total Cover				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum <u>0%</u>				
Remarks: Hydric vegetation was not present in the area of the sample. The area was mowed because it was a part of the airport, but was dominated by upland grasses.				

SOIL

Sampling Point/Wetland ID: Non-W1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix			Redox Features				Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type*	Loc**		
0 - 7	2.5Y	2.5 / 1	100%					CL	
7 - 10	2.5Y	2.5 / 1	50%					CL	
-	10YR	4 / 2	50%						
10 - 12	2.5Y	5 / 2	100%					CL	
12 - 25	2.5Y	4 / 2	100%					CL	
-									
-									
-									

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils***:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside MLRA 72 & 73)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	*** Indicators of hydrophytic vegetations and wetland hydrology must be present, unless disturbed or problematic.	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)		

Restrictive Layer (if present):	Hydric Soil Present?	Yes	No	X
Type: _____				
Depth (inches): _____				

Remarks: Note: No Redox features with 2 Chroma noted in the soil profile. This was not a wetland soil.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required: check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	(where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water Stained Leaves (B9)	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
(where not tilled)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:	Wetland Hydrology Present?	Yes	No	X
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
(includes capillary fringe)				

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

Remarks: Severe Drought was present as indicated in the U.S. Drought Monitor.

APPENDIX E. WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Casselton Robert Miller Regional Airport City: Casselton County: Cass Sampling Date: 11/2/2022
 Applicant/Owner: Mead & Hunt, Inc. State: N.Dakota Sampling Point/Wetland ID: Non-W2
 Investigator(s): Lance Loken, Lawrence Mettler Section, Township, Range: NW Qtr - SE Qtr Sec. 14 T.139N R.52W
 Landform (hillslope, terrace, etc.): Plain Local Relief (concave, convex, none): concave Slope % 0-3%
 Subregion (LRR): F Lat: 46.853936° Long: -97.209605 Datum: WGS 84
 Soil Map Unit Name: Bearden-Kindred silty clay loams, 0 to 2 percent slopes NWI Classification: _____
 Are climatic / hydrologic conditions in and around the site typical for this time of year? No
 Are Vegetation No ; Soil No ; or Hydrology No significantly disturbed? Are "Normal Circumstances" present? No
 Are Vegetation No ; Soil No ; or Hydrology No 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 <u>Y</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: <u>Site was in severe drought conditions according to the U.S Drought Monitor. Sample Point was taken to the south of the airport taxiway between two culverts.</u>	

VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
(Plot size: _____)				Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC -): <u>#REF!</u> (A)
1. _____				Total Number of Dominant Species across all Strata: <u>2</u> (B)
2. _____				
3. _____				
4. _____				
= Total Cover				
Sapling/Shrub Stratum				Percent of Dominant Species that are OBL, FACW, or FAC: <u>#REF!</u> (A/B)
(Plot size: _____)				
1. _____				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>#REF!</u> x 1 <u>#REF!</u> FACW species <u>#REF!</u> x 2 <u>#REF!</u> FAC species <u>#REF!</u> x 3 <u>#REF!</u> FACU species <u>#REF!</u> x 4 <u>#REF!</u> UPL species _____ x 5 _____ Column Totals: <u>#REF!</u> (A) <u>#REF!</u> (B) Prevalence Index = B/A = <u>#REF!</u>
2. _____				
3. _____				
4. _____				
5. _____				
= Total Cover				
Herb Stratum				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <u>#REF!</u> 2 - Dominance Test is > 50% <u>#REF!</u> 3 - Prevalence Index is ≤ 3.0 * <u>#REF!</u> 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet). Problematic Hydrophytic Vegetation* (Explain) * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes <u>X</u> No _____
(Plot size: <u>5' radius</u>)				
1. <u>Juncus sp.</u>	<u>70%</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Trifolium pratense (Red Clover)</u>	<u>20%</u>	<u>No</u>	<u>FACU</u>	
3. <u>Western Wheatgrass (Pascopyrum smithii)</u>	<u>10%</u>	<u>No</u>	<u>UPL</u>	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
100% = Total Cover				
Woody Vine Stratum				
(Plot size: _____)				
1. _____				
2. _____				
= Total Cover				
% Bare Ground in Herb Stratum	<u>7%</u>			
Remarks: <u>Hydric vegetation was present because of the dominate rush species present. The area was mowed because it was a part of the airport.</u>				

SOIL

Sampling Point/Wetland ID: Non-W2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 - 4	2.5Y 3 / 1	100%					CL	
4 - 16	2.5Y 5 / 3	70%	7.5YR 4 / 4	30%	C	M	SiCL	
-								
-								
-								
-								
-								

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils***:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside MLRA 72 & 73)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	*** Indicators of hydrophytic vegetations and wetland hydrology must be present, unless disturbed or problematic.	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)		

Restrictive Layer (if present):	Hydric Soil Present?	Yes	No	X
Type: _____				
Depth (inches): _____				

Remarks: Note: 3 Chroma present from 4 to 16 inches. Redox features were noted, however the 3 chroma makes this a non-wetland soils.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required: check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	(where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water Stained Leaves (B9)	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
(where not tilled)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:	Wetland Hydrology Present?	Yes	No	X
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
(includes capillary fringe)				

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

Remarks: Severe Drought was present as indicated in the U.S. Drought Monitor.

APPENDIX E. WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Casselton Robert Miller Regional Airport City: Casselton County: Cass Sampling Date: 11/2/2022
 Applicant/Owner: Mead & Hunt, Inc. State: N.Dakota Sampling Point/Wetland ID: Non-W3
 Investigator(s): Lance Loken, Lawrence Mettler Section, Township, Range: NW Qtr - SE Qtr Sec. 14 T.139N R.52W
 Landform (hillslope, terrace, etc.): Plain Local Relief (concave, convex, none): concave Slope % 0-3%
 Subregion (LRR): F Lat: 46.852757 Long: -97.206787 Datum: WGS 84
 Soil Map Unit Name: Bearden-Kindred silty clay loams, 0 to 2 percent slopes NWI Classification: _____
 Are climatic / hydrologic conditions in and around the site typical for this time of year? No
 Are Vegetation No ; Soil No ; or Hydrology No significantly disturbed? Are "Normal Circumstances" present? No
 Are Vegetation No ; Soil No ; or Hydrology No 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 <u>X</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: Site was in severe drought conditions according to the U.S Drought Monitor. Sample Point was taken in between the taxiway and runway of the airport.	

VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
(Plot size: _____)				Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC -): <u>1</u> (A)
1. _____				Total Number of Dominant Species across all Strata: <u>2</u> (B)
2. _____				
3. _____				
4. _____				
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Percent of Dominant Species that are OBL, FACW, or FAC: <u>50%</u> (A/B)
1. _____				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0%</u> x 1 <u>0</u> FACW species <u>100%</u> x 2 <u>2</u> FAC species <u>0%</u> x 3 <u>0</u> FACU species <u>0%</u> x 4 <u>0</u> UPL species _____ x 5 _____ Column Totals: <u>1</u> (A) <u>2</u> (B) Prevalence Index = B/A = <u>2.00</u>
2. _____				
3. _____				
4. _____				
5. _____				
= Total Cover				
Herb Stratum (Plot size: <u>5' radius</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation Meets 2 - Dominance Test is > 50% 3 - Prevalence Index is ≤ 3.0 * 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet). Problematic Hydrophytic Vegetation* (Explain) * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1. <u>Juncus sp.</u>	<u>100%</u>	<u>Yes</u>	<u>FACW</u>	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
100% = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____				
2. _____				
105% = Total Cover				
% Bare Ground in Herb Stratum <u>5%</u>				
Remarks: Rushes dominated the sample location. Area was mowed.				

SOIL

Sampling Point/Wetland ID: Non-W3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 - 10	2.5Y 2.5 / 1	100%					CL	
10 - 16	2.5Y 5 / 3	100%					SiCL	No Redox
-								
-								
-								
-								
-								

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils***:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside MLRA 72 & 73)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	*** Indicators of hydrophytic vegetations and wetland hydrology must be present, unless disturbed or problematic.	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)		

Restrictive Layer (if present):	Hydric Soil Present?	Yes	No	X
Type: _____				
Depth (inches): _____				

Remarks: Note: 3 Chroma present - no Redox features were noted from 10 to 16 inches, this was a non-wetland soil.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required: check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	(where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water Stained Leaves (B9)	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
(where not tilled)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:	Wetland Hydrology Present?	Yes	No	X
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
(includes capillary fringe)				

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

Remarks: Severe Drought was present as indicated in the U.S. Drought Monitor.

Appendix F

Appendix F. Plant List

Casselton Robert Miller Regional Airport

*** Wetland Indicator Status (WIS) key:**

FAC =Facultative: plants that occur in a variety of habitats, including wetland and mesic to xeric non-wetland habitats but commonly occur in standing water or saturated soils.

FACU = Facultative Upland: plants that typically occur in xeric or mesic non-wetland habitats but may frequently occur in standing water or saturated soils.

FACW =Facultative Wet: plants that nearly always occur in areas of prolonged flooding or require standing water or saturated soils but may, on rare occasions, occur in non-wetlands.

OBL =Obligate: plants that always occur in standing water or in saturated soils.

UPL =Upland: plants that rarely occur in water or saturated soils.

Genus	Species	Common Name	WIS*
Bromus	inermis	smooth brome grass	UPL
Hordeum	jubatum	foxtail barley	FACW
Pascopyrum	smithii	western wheatgrass	FACU
Polygonum	arenastrum	common knotweed	FAC
Phalaris	arundunacea	reed canarygrass	FACW
Poa	pratensis	kentucky bluegrass	FACU
Spartina	pectinata	prarie cordgrass	FACW
Taraxacum	officinale	common dandelion	FACU
Trifolium	pratense	red clover	FACU
Typha	sp.	cattails	OBL

Attachment B - Project Location Map



**Project Location Map
Casselton Robert Miller Regional Airport**

Sources: CGIAR, ESRI,
Garmin, NOAA, NPS,
State of North Dakota,
USDA, USGS

0 2,500 5,000
Feet



Legend

-  Land Acquisition
-  Original Study Area



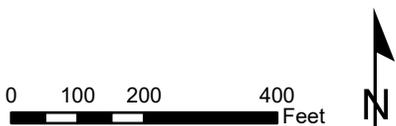
Attachment C – Topography Mapping



Map Source: World Imagery (via ESRI, Inc)

2-ft Contours Map

Casselton Robert Miller Regional Airport



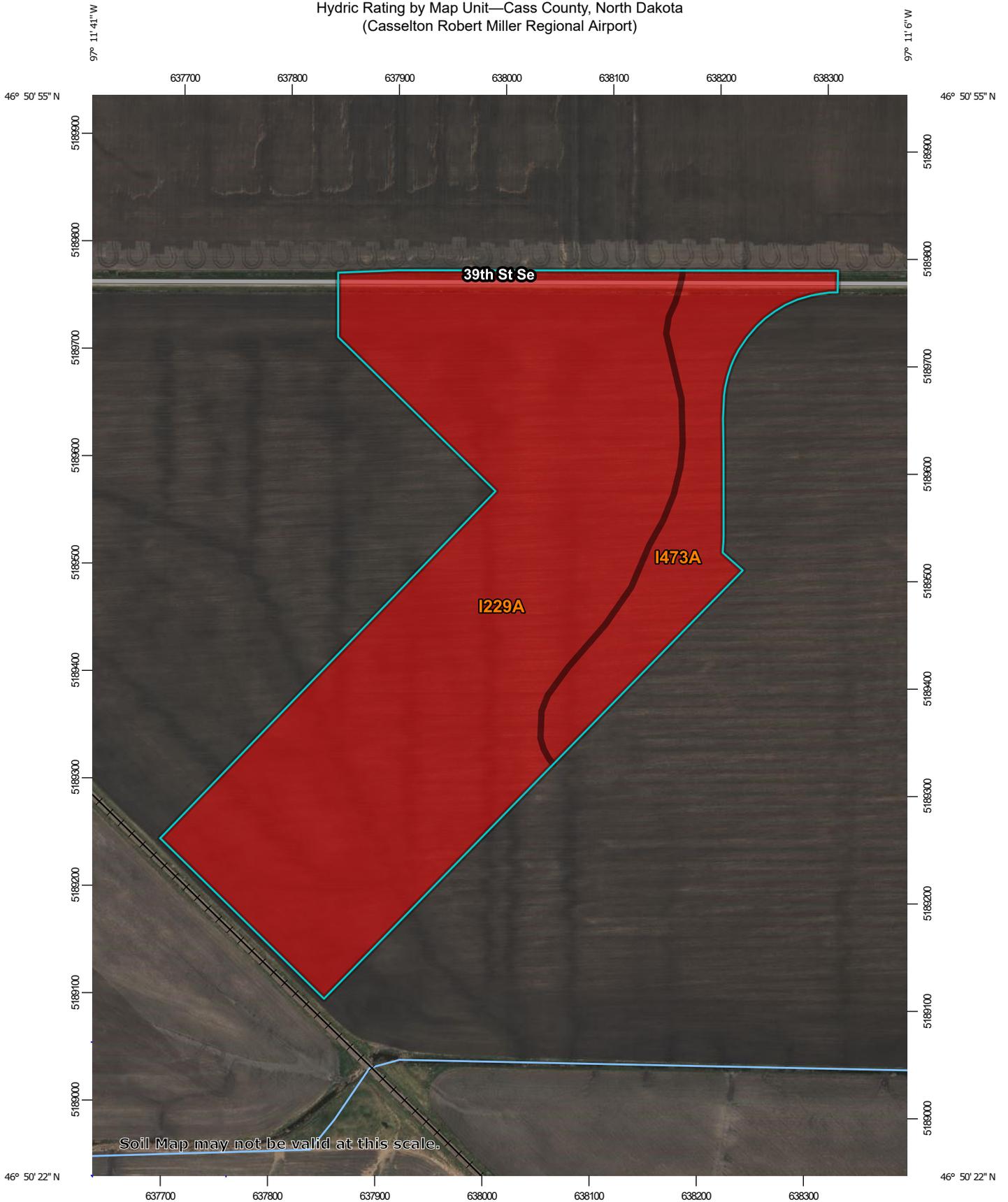
Legend

- Roadway ROW
- 2-ft Contours
- Review Area
- Field Delineated Wetlands

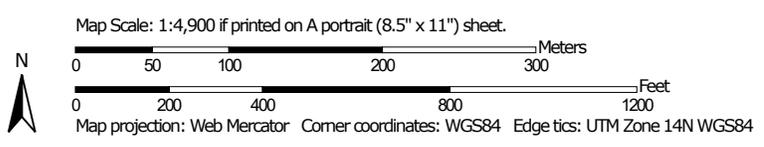


Attachment D – Soils Mapping

Hydric Rating by Map Unit—Cass County, North Dakota
(Casselton Robert Miller Regional Airport)



Soil Map may not be valid at this scale.



Hydric Rating by Map Unit—Cass County, North Dakota
(Casselton Robert Miller Regional Airport)

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  Not rated or not available

Soil Rating Lines

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  Not rated or not available

Soil Rating Points

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  Not rated or not available

Water Features

 Streams and Canals

Transportation

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

Background

 Aerial Photography

MAP INFORMATION

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

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

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

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

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

Soil Survey Area: Cass County, North Dakota
Survey Area Data: Version 24, Sep 4, 2024

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

Date(s) aerial images were photographed: May 24, 2021—Jun 12, 2021

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

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
I229A	Fargo silty clay, 0 to 1 percent slopes	100	38.1	83.6%
I473A	Hegne-Fargo silty clay loams, 0 to 1 percent slopes	100	7.5	16.4%
Totals for Area of Interest			45.6	100.0%

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Attachment E – Aquatic Resource Mapping



U.S. Fish and Wildlife Service, National Standards and Support Team, wetlands_team@fws.gov

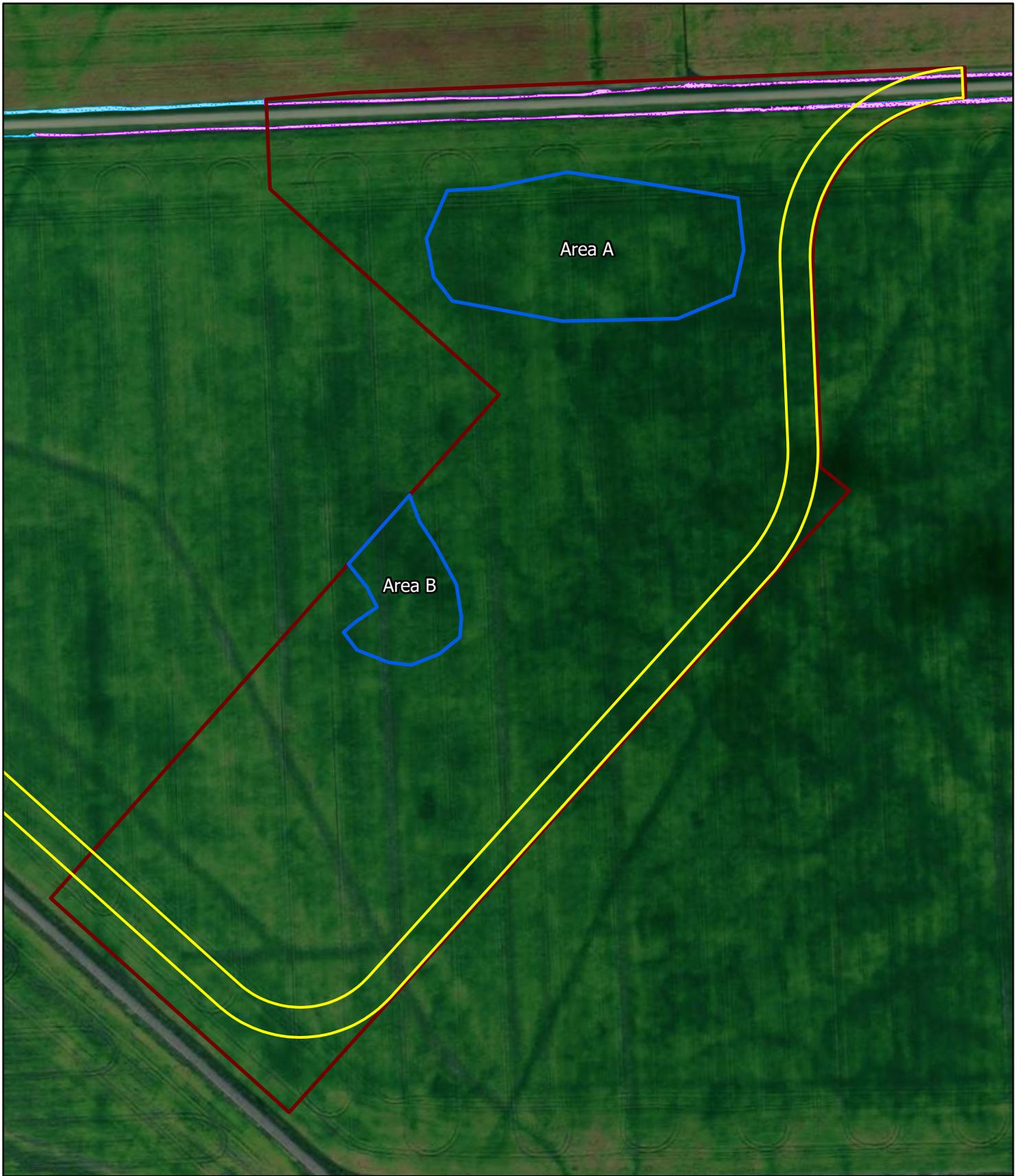
August 21, 2025

Wetlands

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

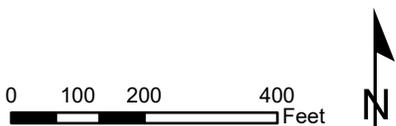
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Attachment F – Historic Aerial Review



Historic Aerial Review Areas

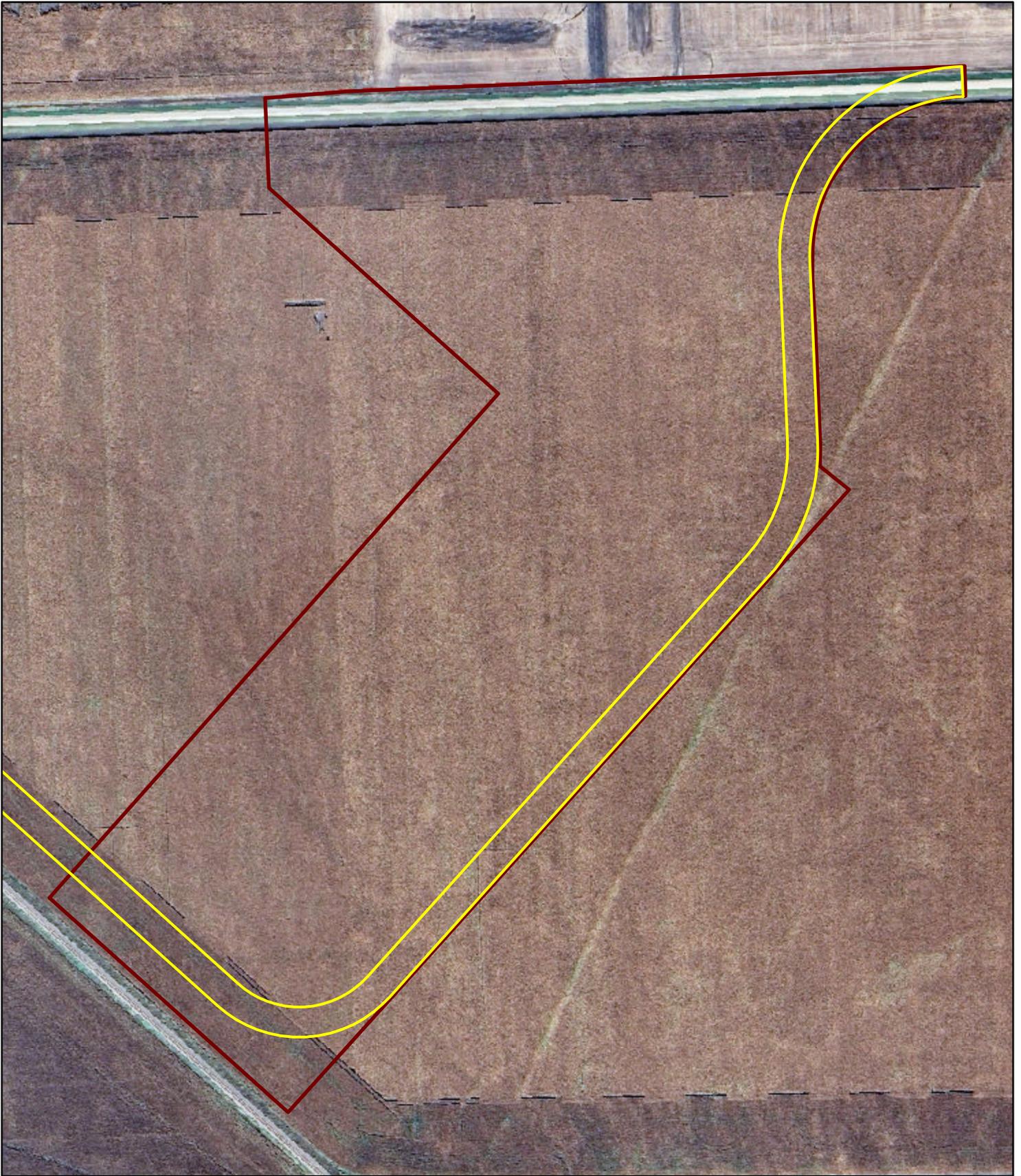
Casselton Robert Miller Regional Airport



Legend

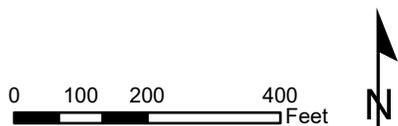
- Land Acquisition
 - Review Area
 - Proposed Roadway ROW
- Delineated Wetlands**
- Field
 - Estimated





Historic Aerial Imagery (Google Earth 2023)

Casselton Robert Miller Regional Airport



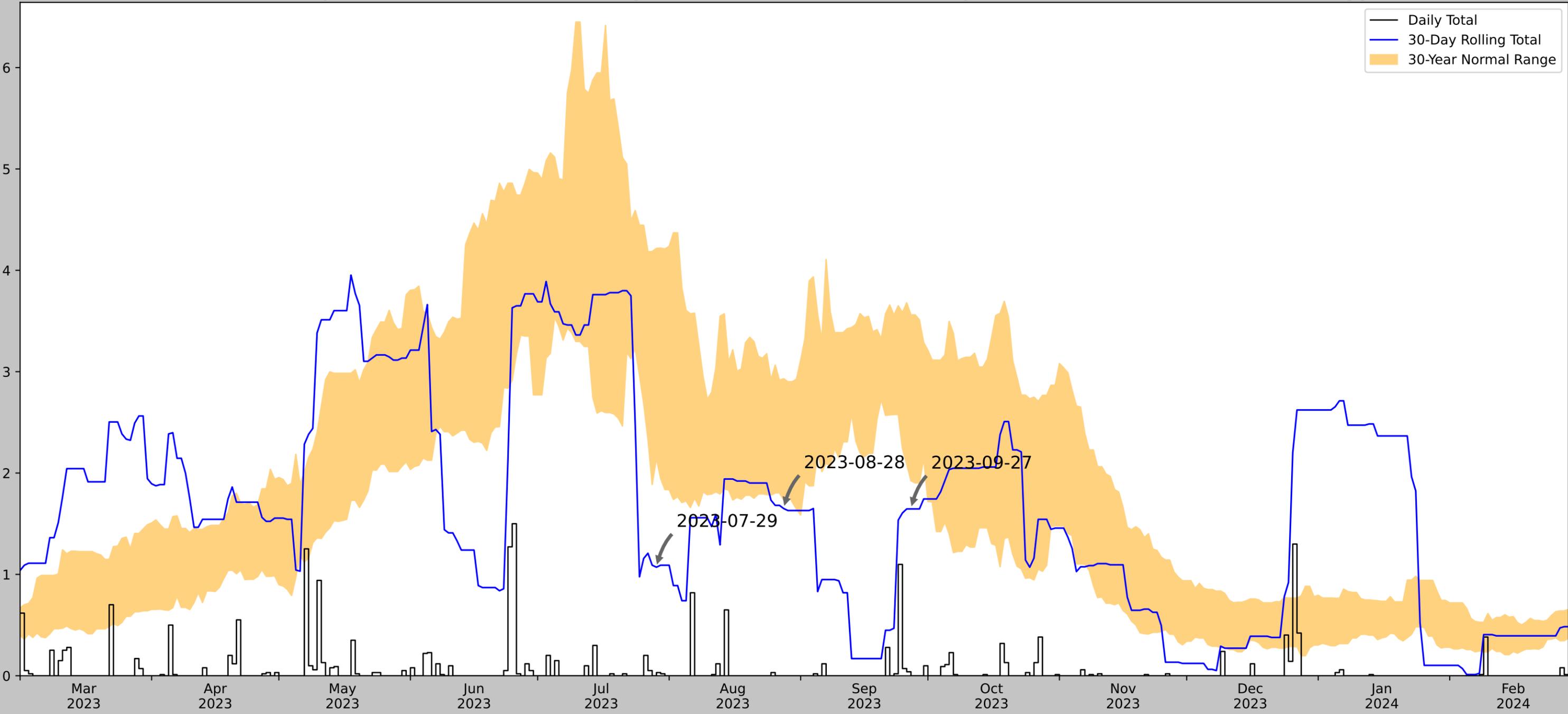
Legend

-  Land Acquisition
-  Proposed Roadway ROW



Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network

Rainfall (Inches)



Coordinates	46.8446168, -97.1900679
Observation Date	2023-09-27
Elevation (ft)	920.604
Drought Index (PDSI)	Incipient drought
WebWIMP H ₂ O Balance	Dry Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2023-09-27	1.923228	3.560236	1.645669	Dry	1	3	3
2023-08-28	1.735433	2.930709	1.649606	Dry	1	2	2
2023-07-29	2.145276	4.216536	1.070866	Dry	1	1	1
Result							Drier than Normal - 6



Figures and tables made by the
Antecedent Precipitation Tool
Version 2.0

Developed by:
U.S. Army Corps of Engineers and
U.S. Army Engineer Research and
Development Center



Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CASSETON AGRONOMY FARM	46.8769, -97.2328	935.039	3.009	14.435	1.397	10567	90
DURBIN 5.4 WNW	46.8293, -97.2617	943.898	3.561	8.859	1.634	193	0
CHAFFEE 5 NE	46.7958, -97.2686	953.084	5.853	18.045	2.739	563	0
FARGO HECTOR INTL AP	46.9242, -96.812	895.013	20.133	40.026	9.866	30	0



Historic Aerial Imagery (NAIP 2023)

Casselton Robert Miller Regional Airport



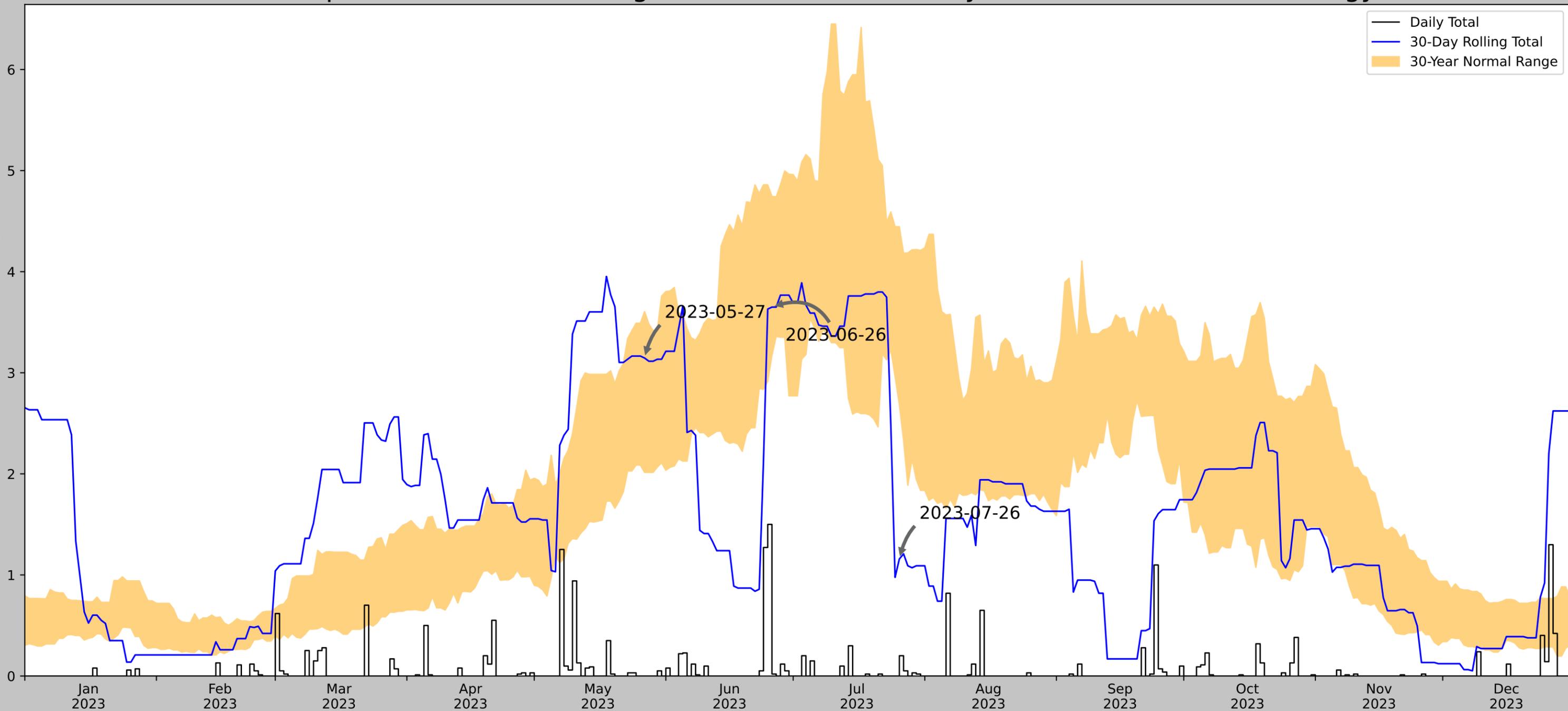
Legend

-  Land Acquisition
-  Proposed Roadway ROW



Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network

Rainfall (Inches)



Coordinates	46.8446168, -97.1900679
Observation Date	2023-07-26
Elevation (ft)	920.604
Drought Index (PDSI)	Incipient drought
WebWIMP H ₂ O Balance	Dry Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2023-07-26	2.687008	4.445276	1.15748	Dry	1	3	3
2023-06-26	3.17441	4.744095	3.649606	Normal	2	2	4
2023-05-27	2.014173	3.605512	3.145669	Normal	2	1	2
Result							Drier than Normal - 9

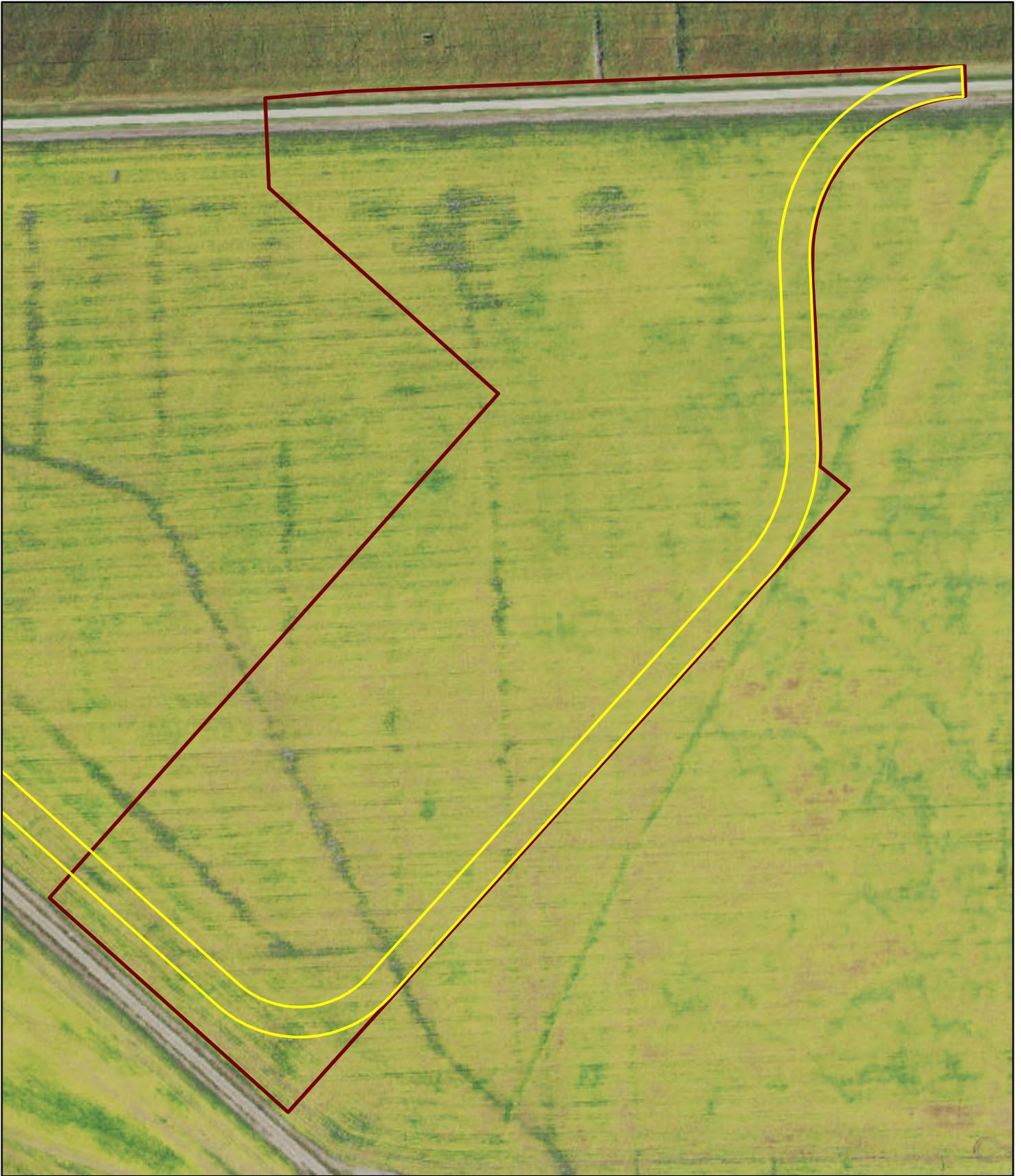


Figures and tables made by the
Antecedent Precipitation Tool
Version 2.0

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Development Center

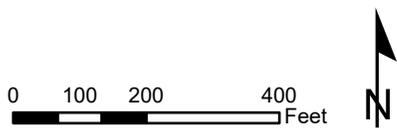


Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CASSETON AGRONOMY FARM	46.8769, -97.2328	935.039	3.009	14.435	1.397	10567	90
DURBIN 5.4 WNW	46.8293, -97.2617	943.898	3.561	8.859	1.634	193	0
CHAFFEE 5 NE	46.7958, -97.2686	953.084	5.853	18.045	2.739	563	0
FARGO HECTOR INTL AP	46.9242, -96.812	895.013	20.133	40.026	9.866	30	0



Historic Aerial Imagery (NAIP 2021)

Casselton Robert Miller Regional Airport



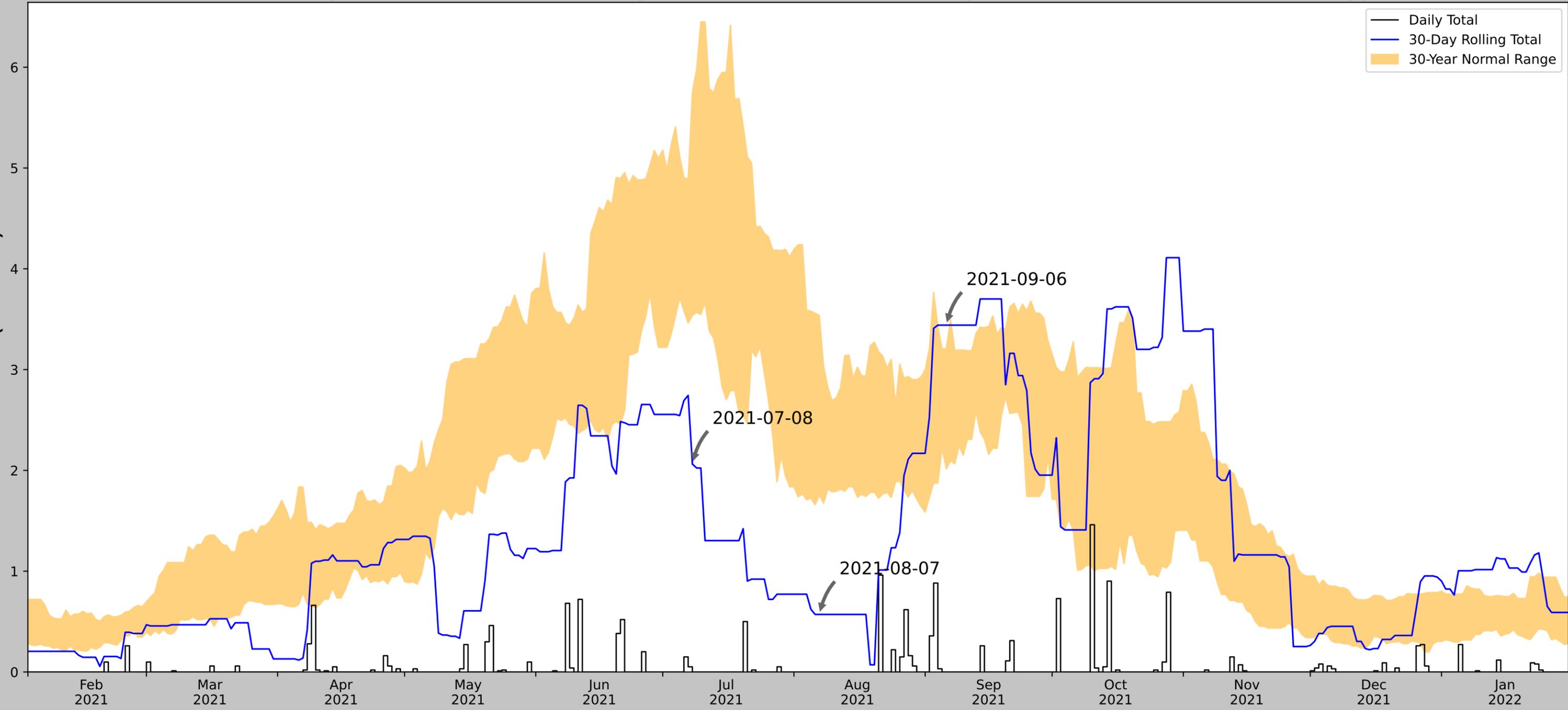
Legend

-  Land Acquisition
-  Proposed Roadway ROW



Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network

Rainfall (Inches)



Coordinates	46.84659, -97.18705
Observation Date	2021-09-06
Elevation (ft)	921.073
Drought Index (PDSI)	Extreme drought
WebWIMP H ₂ O Balance	Dry Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2021-09-06	2.01378	3.207087	3.440945	Wet	3	3	9
2021-08-07	1.752362	3.536614	0.570866	Dry	1	2	2
2021-07-08	3.537795	5.753543	2.062992	Dry	1	1	1
Result							Normal Conditions - 12

Figures and tables made by the Antecedent Precipitation Tool Version 3.0



US Army Corps of Engineers



ERDC

Developed by:
U.S. Army Corps of Engineers and
U.S. Army Engineer Research and
Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CASSELTON AGRONOMY FARM	46.8769, -97.2328	935.039	3.01	13.966	1.396	10567	90
DURBIN 5.4 WNW	46.8293, -97.2617	943.898	3.561	8.859	1.634	193	0
CHAFFEE 5 NE	46.7958, -97.2686	953.084	5.853	18.045	2.739	563	0
FARGO HECTOR INTL AP	46.9242, -96.812	895.013	20.133	40.026	9.866	30	0



Historic Aerial Imagery (Google Earth 2021)

Casselton Robert Miller Regional Airport

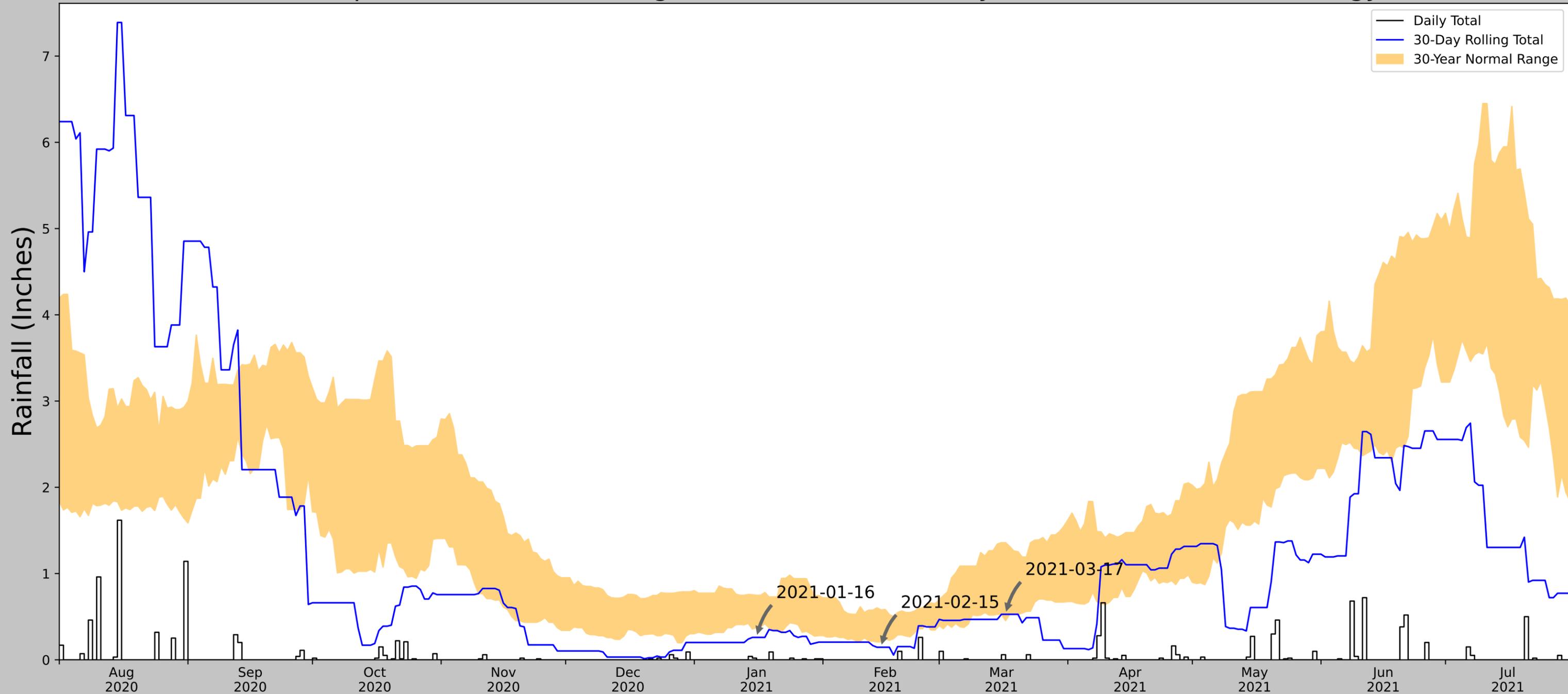


Legend

-  Land Acquisition
-  Proposed Roadway ROW



Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	46.8446168, -97.1900679
Observation Date	2021-03-17
Elevation (ft)	920.604
Drought Index (PDSI)	Moderate drought
WebWIMP H ₂ O Balance	Wet Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2021-03-17	0.453937	1.358268	0.527559	Normal	2	3	6
2021-02-15	0.20748	0.577953	0.145669	Dry	1	2	2
2021-01-16	0.373228	0.748425	0.259843	Dry	1	1	1
Result							Drier than Normal - 9

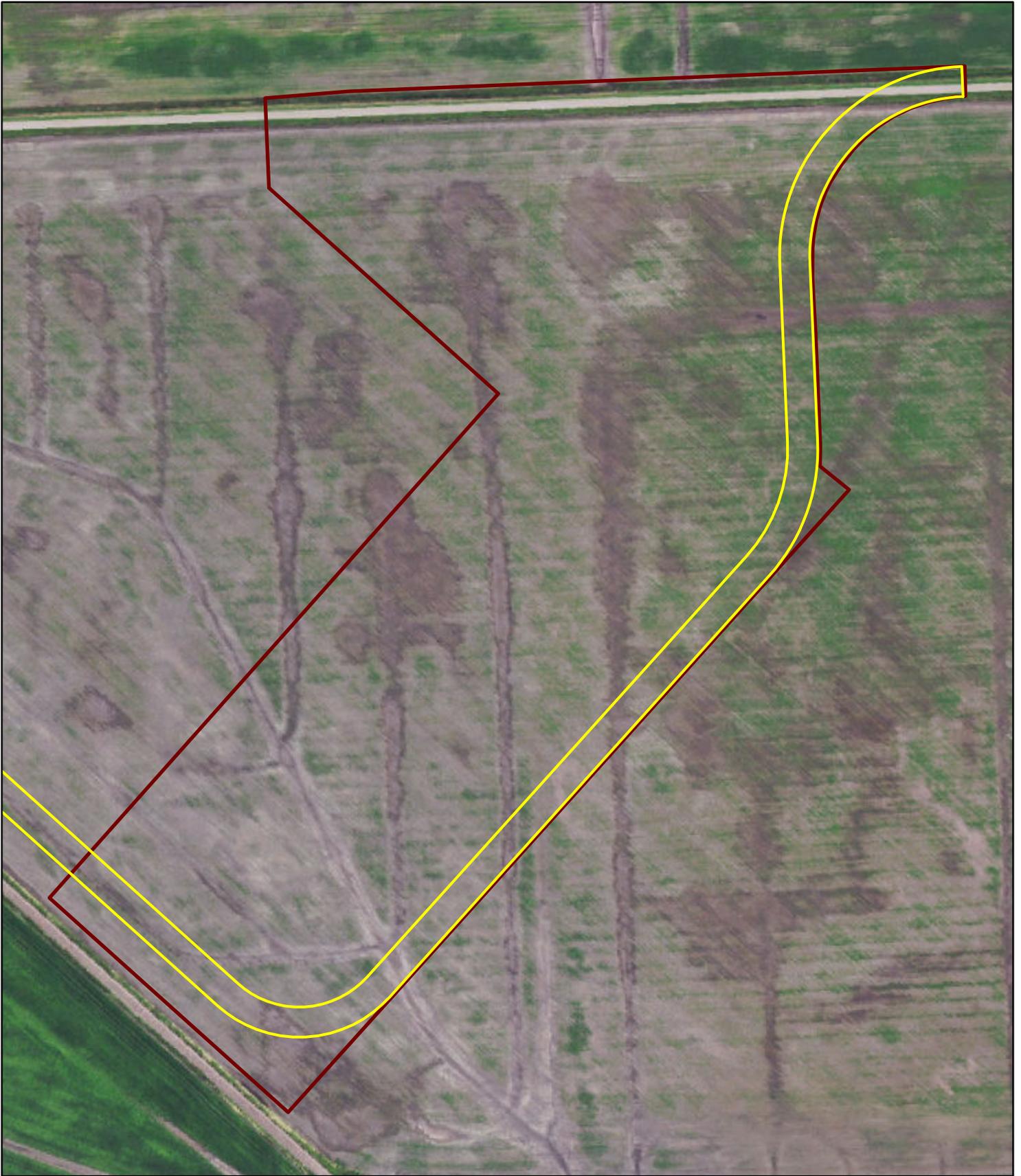


Figures and tables made by the
Antecedent Precipitation Tool
Version 2.0

Developed by:
U.S. Army Corps of Engineers and
U.S. Army Engineer Research and
Development Center

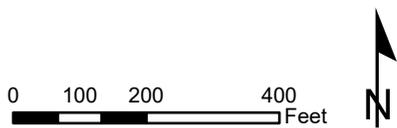


Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CASSELTON AGRONOMY FARM	46.8769, -97.2328	935.039	3.009	14.435	1.397	10567	90
DURBIN 5.4 WNW	46.8293, -97.2617	943.898	3.561	8.859	1.634	193	0
CHAFFEE 5 NE	46.7958, -97.2686	953.084	5.853	18.045	2.739	563	0
FARGO HECTOR INTL AP	46.9242, -96.812	895.013	20.133	40.026	9.866	30	0



Historic Aerial Imagery (NAIP 2019)

Casselton Robert Miller Regional Airport

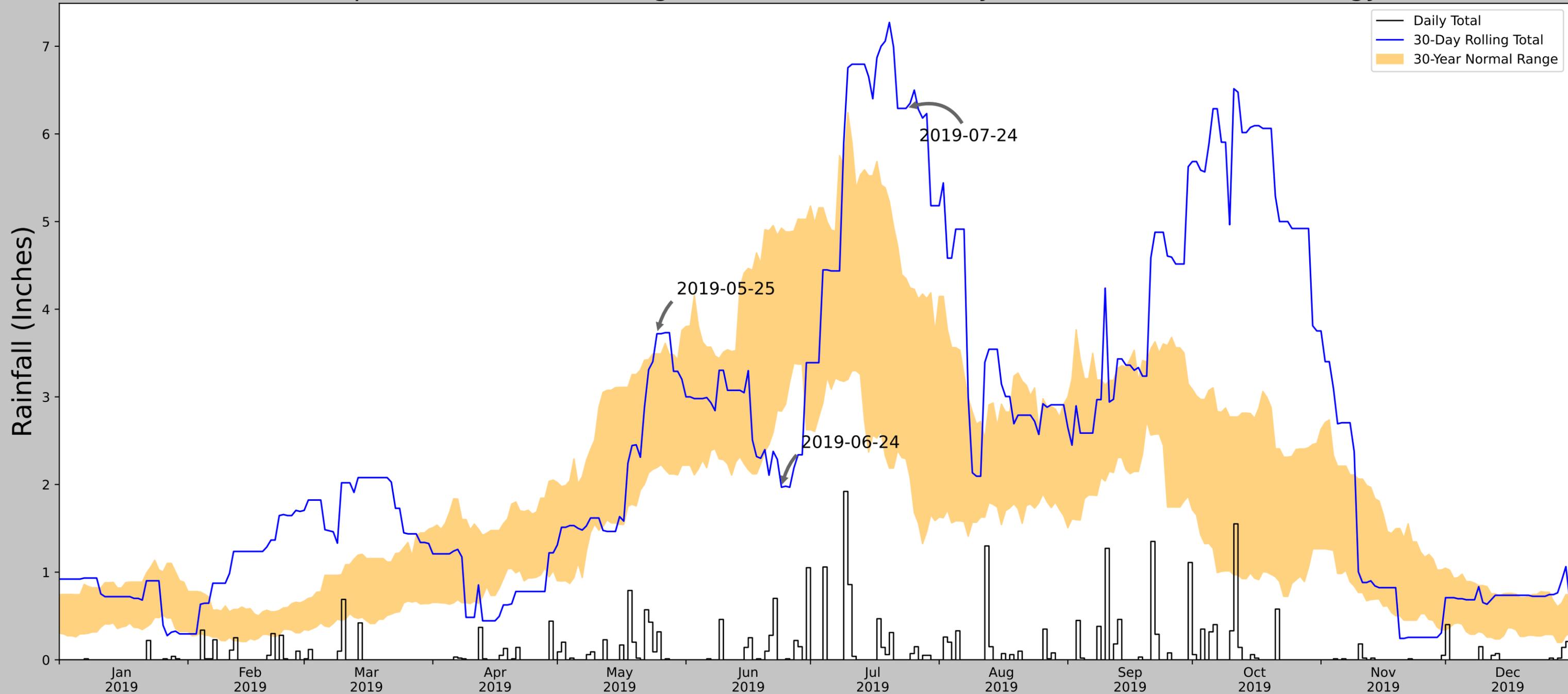


Legend

-  Land Acquisition
-  Proposed Roadway ROW



Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	46.84659, -97.18705
Observation Date	2019-07-24
Elevation (ft)	921.073
Drought Index (PDSI)	Severe wetness
WebWIMP H ₂ O Balance	Dry Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2019-07-24	2.293701	4.35	6.291339	Wet	3	3	9
2019-06-24	2.836221	4.925591	1.968504	Dry	1	2	2
2019-05-25	2.194095	3.490551	3.720473	Wet	3	1	3
Result							Normal Conditions - 14

Figures and tables made by the
Antecedent Precipitation Tool
Version 3.0



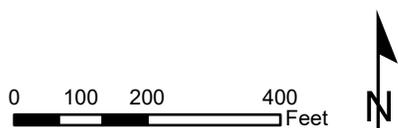
Developed by:
U.S. Army Corps of Engineers and
U.S. Army Engineer Research and
Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CASSELTON AGRONOMY FARM	46.8769, -97.2328	935.039	3.01	13.966	1.396	10507	90
DURBIN 5.4 WNW	46.8293, -97.2617	943.898	3.561	8.859	1.634	193	0
CHAFFEE 5 NE	46.7958, -97.2686	953.084	5.853	18.045	2.739	623	0
FARGO HECTOR INTL AP	46.9242, -96.812	895.013	20.133	40.026	9.866	30	0



Historic Aerial Imagery (NAIP 2018)

Casselton Robert Miller Regional Airport



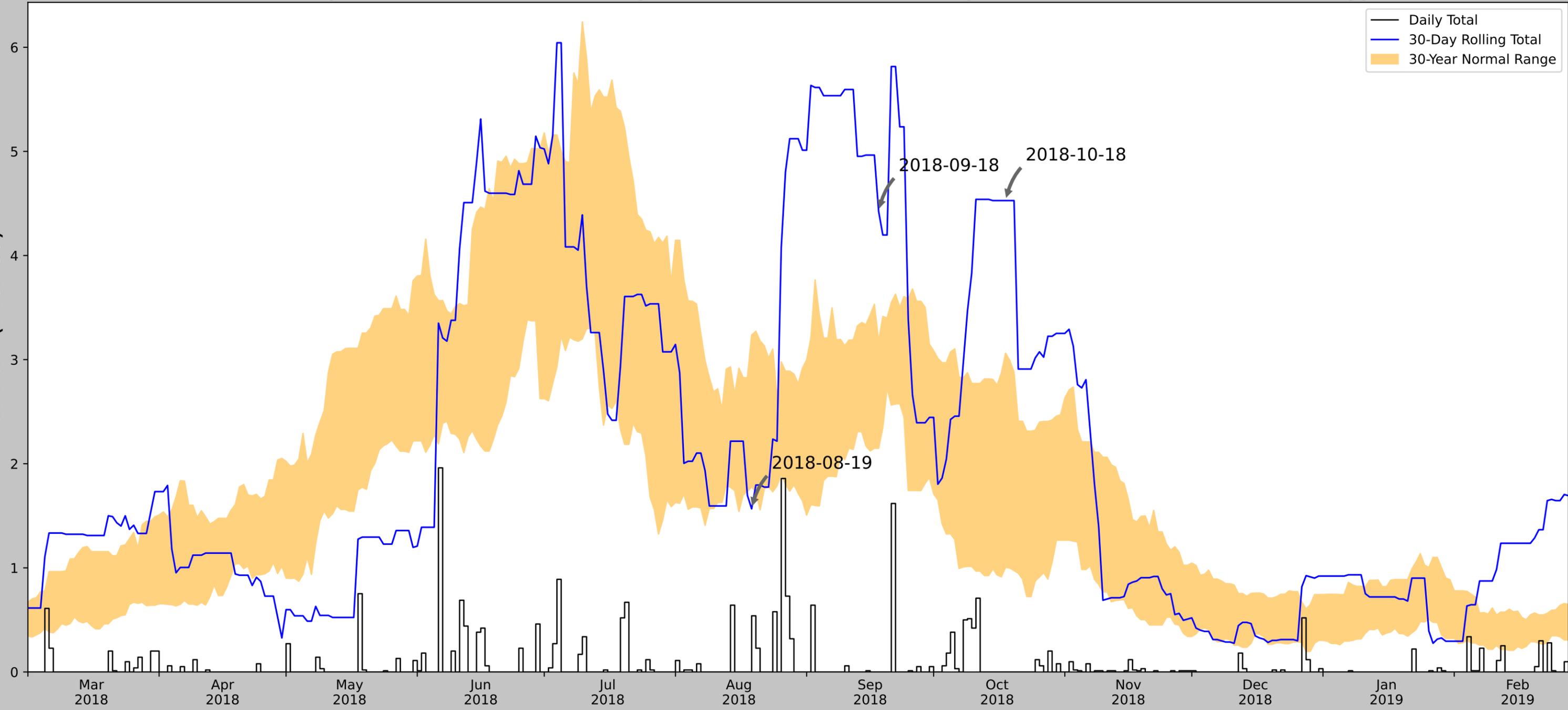
Legend

-  Land Acquisition
-  Proposed Roadway ROW



Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network

Rainfall (Inches)



Coordinates	46.8465, -97.187
Observation Date	2018-10-18
Elevation (ft)	920.919
Drought Index (PDSI)	Mild wetness
WebWIMP H ₂ O Balance	Dry Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2018-10-18	1.004331	3.062205	4.527559	Wet	3	3	9
2018-09-18	2.148032	3.179134	4.425197	Wet	3	2	6
2018-08-19	1.779921	3.236221	1.566929	Dry	1	1	1
Result							Wetter than Normal - 16

Figures and tables made by the Antecedent Precipitation Tool Version 3.0



US Army Corps of Engineers



ERDC

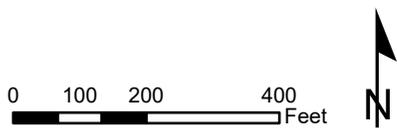
Developed by:
U.S. Army Corps of Engineers and
U.S. Army Engineer Research and
Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CASSETON AGRONOMY FARM	46.8769, -97.2328	935.039	3.016	14.12	1.4	10507	90
DURBIN 5.4 WNW	46.8293, -97.2617	943.898	3.561	8.859	1.634	193	0
CHAFFEE 5 NE	46.7958, -97.2686	953.084	5.853	18.045	2.739	623	0
FARGO HECTOR INTL AP	46.9242, -96.812	895.013	20.133	40.026	9.866	30	0



Historic Aerial Imagery (Google Earth 2018)

Casselton Robert Miller Regional Airport

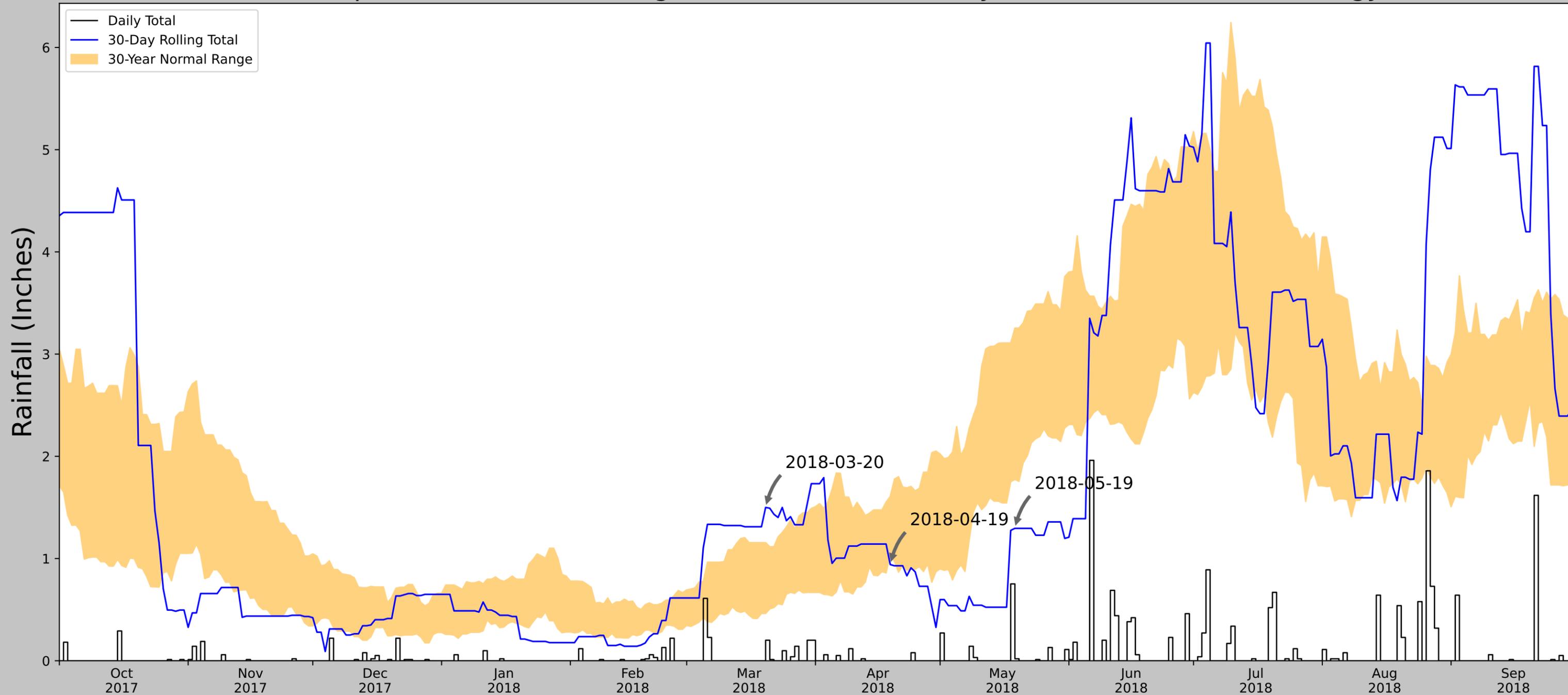


Legend

-  Land Acquisition
-  Proposed Roadway ROW



Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	46.8446168, -97.1900679
Observation Date	2018-05-19
Elevation (ft)	920.604
Drought Index (PDSI)	Mild drought
WebWIMP H ₂ O Balance	Dry Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2018-05-19	1.774016	3.255512	1.295276	Dry	1	3	3
2018-04-19	1.035827	1.608268	0.940945	Dry	1	2	2
2018-03-20	0.462205	1.155906	1.5	Wet	3	1	3
Result							Drier than Normal - 8



Figures and tables made by the
Antecedent Precipitation Tool
Version 2.0

Developed by:
U.S. Army Corps of Engineers and
U.S. Army Engineer Research and
Development Center

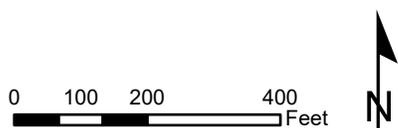


Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CASSETON AGRONOMY FARM	46.8769, -97.2328	935.039	3.009	14.435	1.397	10508	90
DURBIN 5.4 WNW	46.8293, -97.2617	943.898	3.561	8.859	1.634	189	0
CHAFFEE 5 NE	46.7958, -97.2686	953.084	5.853	18.045	2.739	626	0
FARGO HECTOR INTL AP	46.9242, -96.812	895.013	20.133	40.026	9.866	30	0



Historic Aerial Imagery (NAIP 2017)

Casselton Robert Miller Regional Airport



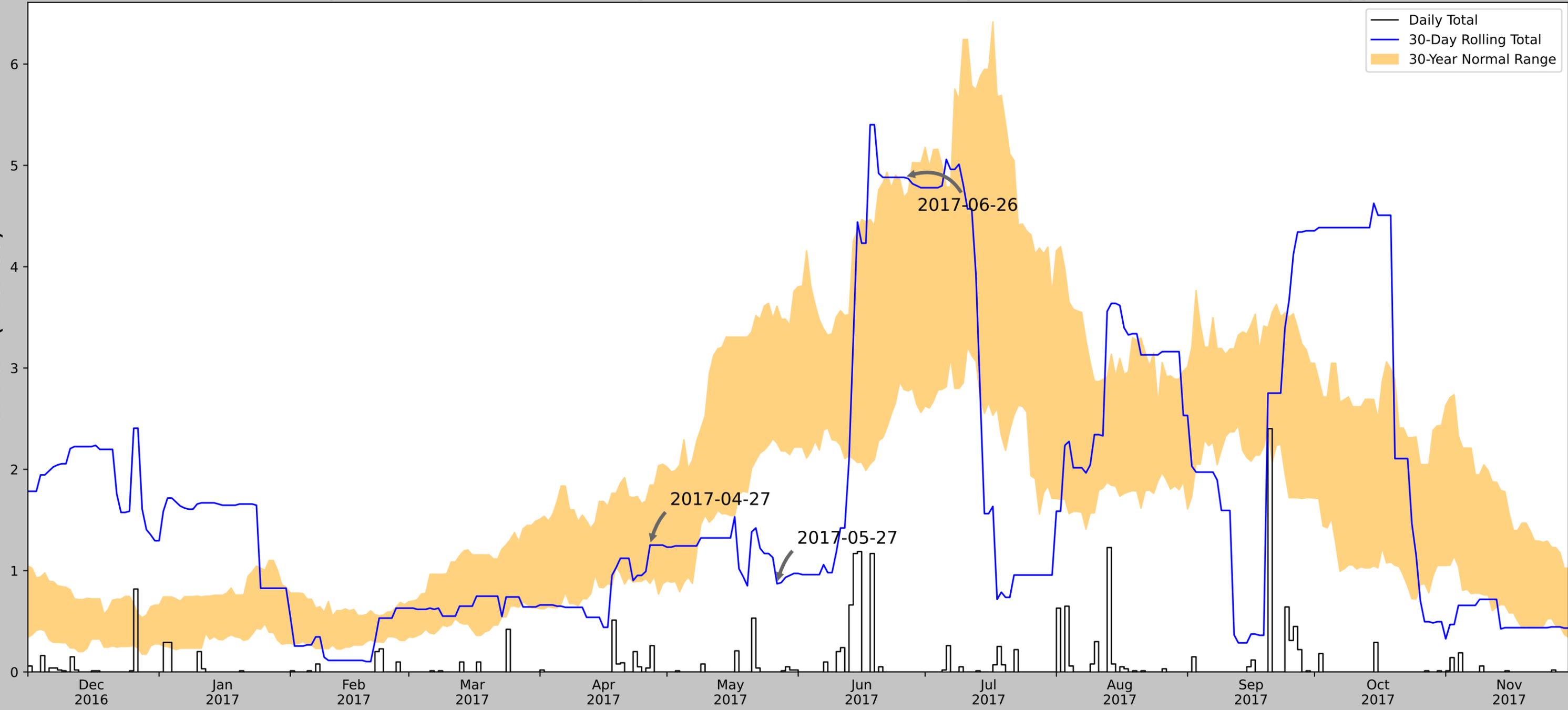
Legend

-  Land Acquisition
-  Proposed Roadway ROW



Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network

Rainfall (Inches)



Coordinates	46.8465, -97.187
Observation Date	2017-06-26
Elevation (ft)	920.919
Drought Index (PDSI)	Incipient drought
WebWIMP H ₂ O Balance	Dry Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2017-06-26	2.786614	4.684646	4.88189	Wet	3	3	9
2017-05-27	2.259843	3.611417	0.870079	Dry	1	2	2
2017-04-27	0.872835	1.844882	1.251969	Normal	2	1	2
Result							Normal Conditions - 13

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US Army Corps of Engineers



ERDC
U.S. Army Corps of Engineers and
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U.S. Army Engineer Research and
Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CASSELTON AGRONOMY FARM	46.8769, -97.2328	935.039	3.016	14.12	1.4	10508	90
DURBIN 5.4 WNW	46.8293, -97.2617	943.898	3.561	8.859	1.634	189	0
CHAFFEE 5 NE	46.7958, -97.2686	953.084	5.853	18.045	2.739	626	0
FARGO HECTOR INTL AP	46.9242, -96.812	895.013	20.133	40.026	9.866	30	0



Historic Aerial Imagery (Google Earth 2017)

Casselton Robert Miller Regional Airport



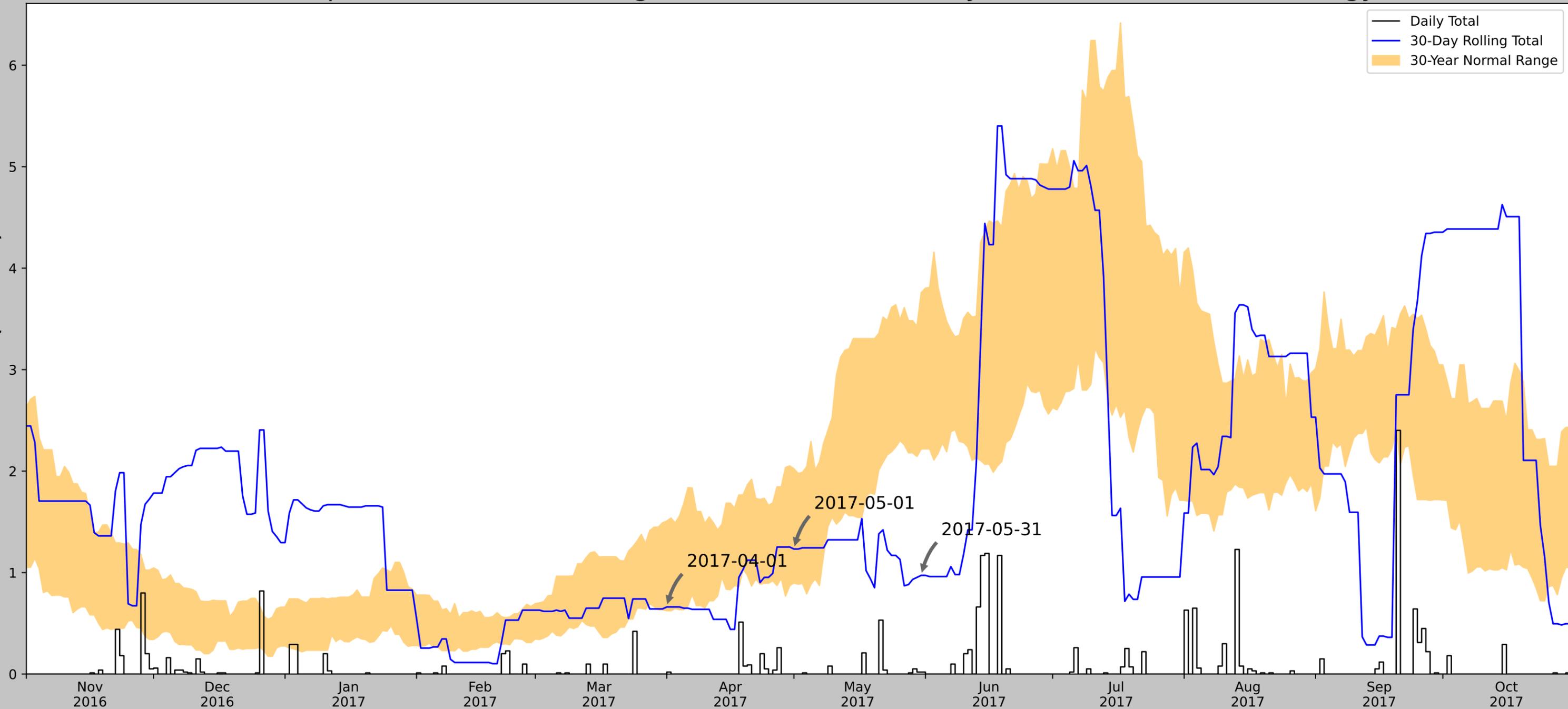
Legend

-  Land Acquisition
-  Proposed Roadway ROW



Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network

Rainfall (Inches)



Coordinates	46.8446168, -97.1900679
Observation Date	2017-05-31
Elevation (ft)	920.604
Drought Index (PDSI)	Incipient drought
WebWIMP H ₂ O Balance	Dry Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2017-05-31	2.218898	3.758662	0.972441	Dry	1	3	3
2017-05-01	0.898032	2.023228	1.232284	Normal	2	2	4
2017-04-01	0.623622	1.507874	0.661417	Normal	2	1	2
Result							Drier than Normal - 9



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Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CASSETON AGRONOMY FARM	46.8769, -97.2328	935.039	3.009	14.435	1.397	10508	90
DURBIN 5.4 WNW	46.8293, -97.2617	943.898	3.561	8.859	1.634	189	0
CHAFFEE 5 NE	46.7958, -97.2686	953.084	5.853	18.045	2.739	626	0
FARGO HECTOR INTL AP	46.9242, -96.812	895.013	20.133	40.026	9.866	30	0



Historic Aerial Imagery (NAIP 2016)

Casselton Robert Miller Regional Airport



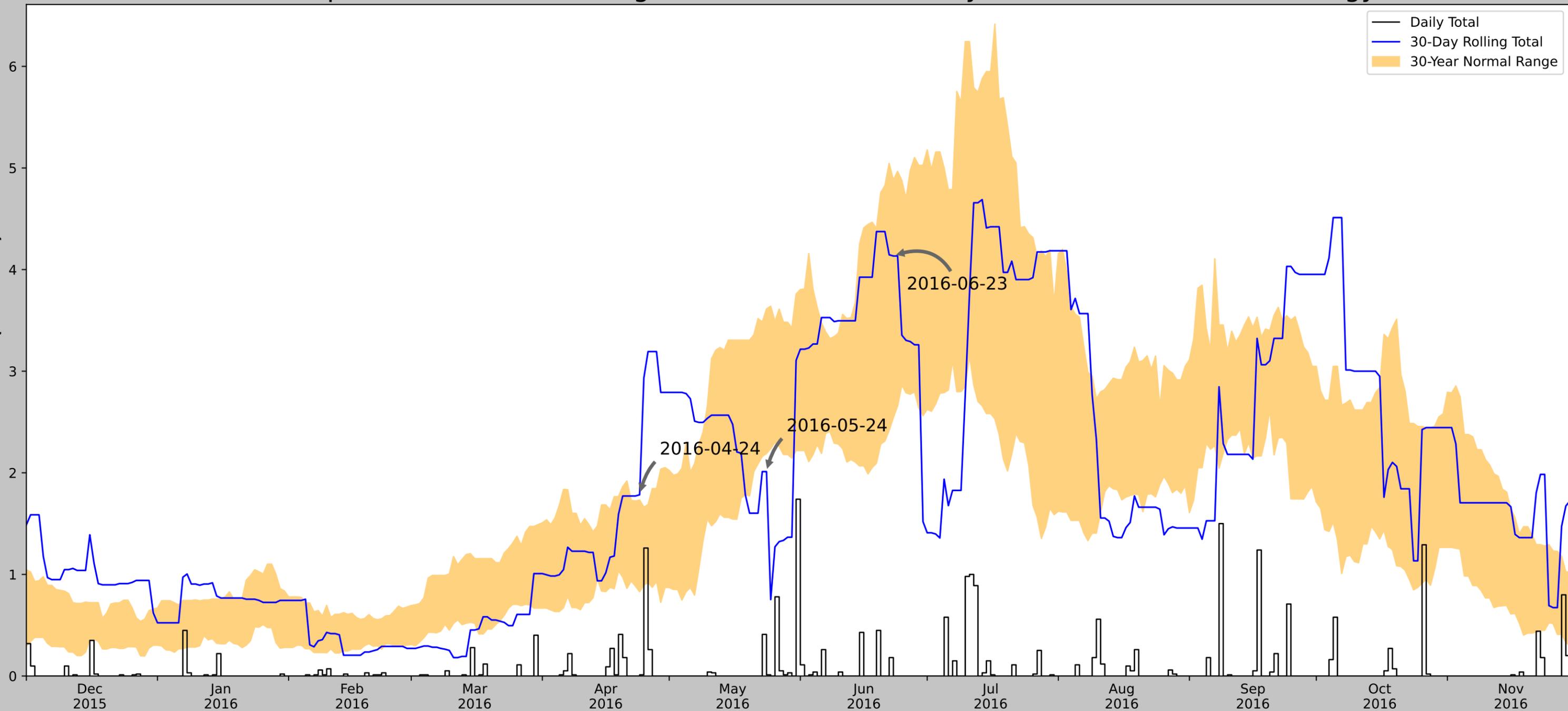
Legend

-  Land Acquisition
-  Proposed Roadway ROW



Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network

Rainfall (Inches)



Coordinates	46.8465, -97.187
Observation Date	2016-06-23
Elevation (ft)	920.919
Drought Index (PDSI)	Normal
WebWIMP H ₂ O Balance	Dry Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2016-06-23	2.54252	4.882284	4.133858	Normal	2	3	6
2016-05-24	2.189764	3.612992	2.011811	Dry	1	2	2
2016-04-24	0.829528	1.732284	1.783465	Wet	3	1	3
Result							Normal Conditions - 11

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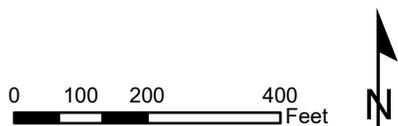
Developed by:
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U.S. Army Engineer Research and
Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CASSELTON AGRONOMY FARM	46.8769, -97.2328	935.039	3.016	14.12	1.4	10506	90
DURBIN 5.4 WNW	46.8293, -97.2617	943.898	3.561	8.859	1.634	189	0
CHAFFEE 5 NE	46.7958, -97.2686	953.084	5.853	18.045	2.739	627	0
FARGO HECTOR INTL AP	46.9242, -96.812	895.013	20.133	40.026	9.866	30	0



Historic Aerial Imagery (Google Earth 2016)

Casselton Robert Miller Regional Airport

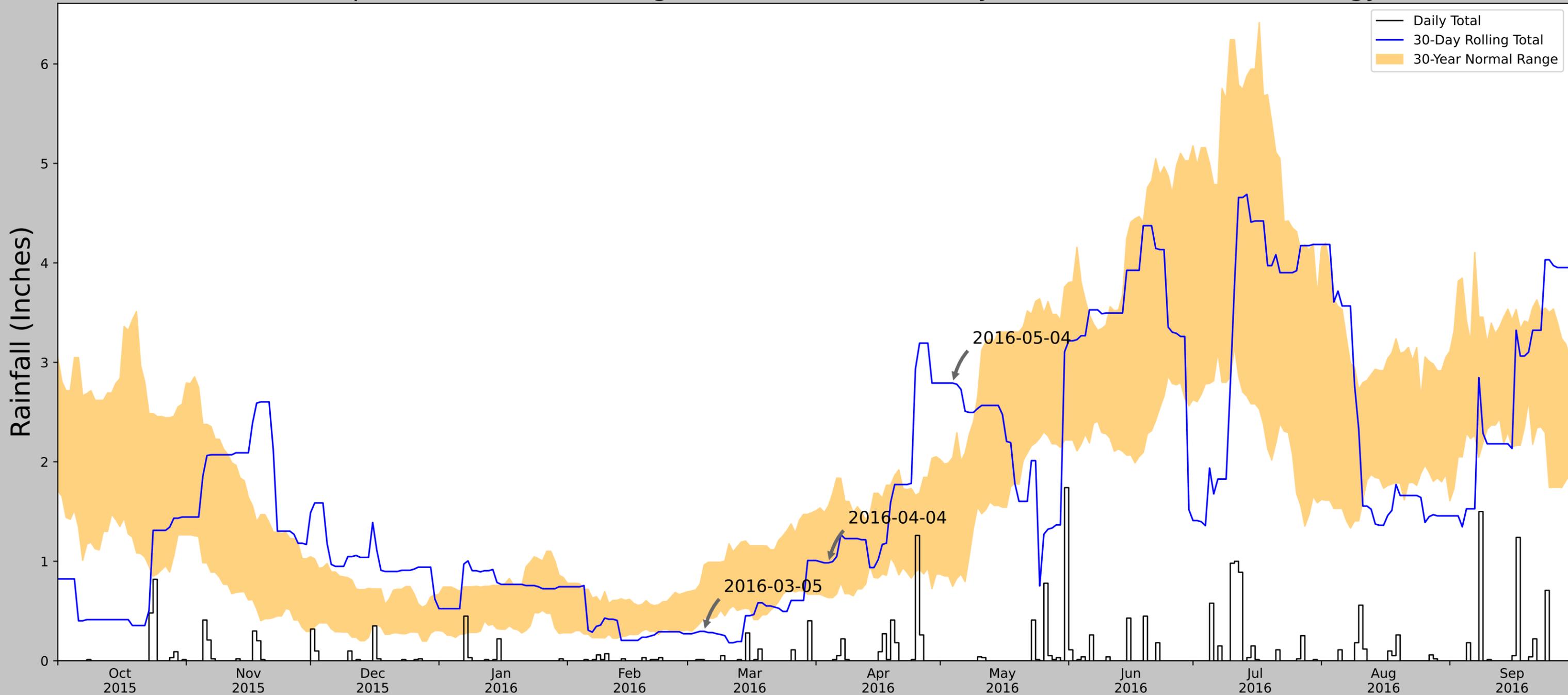


Legend

-  Land Acquisition
-  Proposed Roadway ROW



Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	46.8446168, -97.1900679
Observation Date	2016-05-04
Elevation (ft)	920.604
Drought Index (PDSI)	Incipient wetness
WebWIMP H ₂ O Balance	Dry Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2016-05-04	0.74685	2.043307	2.791339	Wet	3	3	9
2016-04-04	0.634252	1.55748	0.984252	Normal	2	2	4
2016-03-05	0.429921	0.964567	0.295276	Dry	1	1	1
Result							Normal Conditions - 14



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Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CASSELTON AGRONOMY FARM	46.8769, -97.2328	935.039	3.009	14.435	1.397	10506	90
DURBIN 5.4 WNW	46.8293, -97.2617	943.898	3.561	8.859	1.634	189	0
CHAFFEE 5 NE	46.7958, -97.2686	953.084	5.853	18.045	2.739	627	0
FARGO HECTOR INTL AP	46.9242, -96.812	895.013	20.133	40.026	9.866	30	0



Historic Aerial Imagery (NAIP 2015)

Casselton Robert Miller Regional Airport

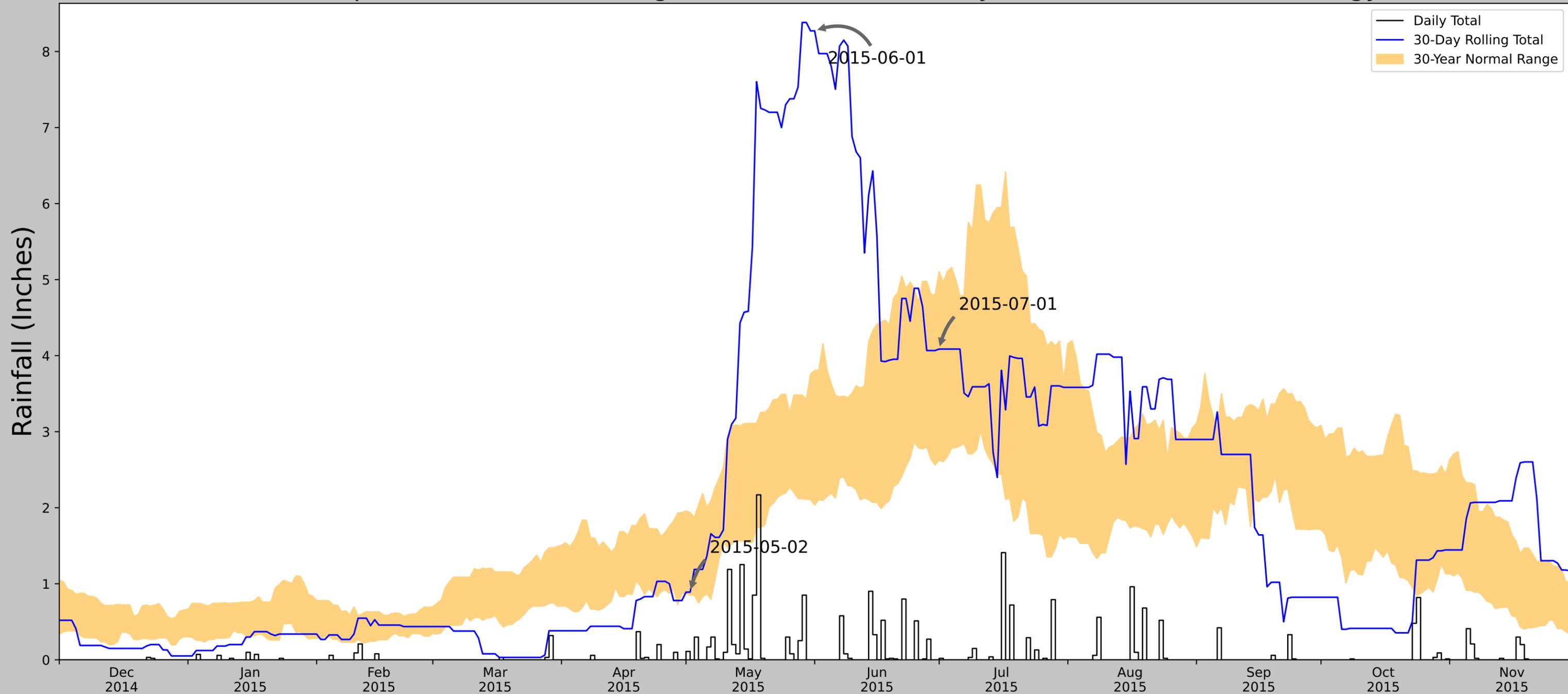


Legend

-  Land Acquisition
-  Proposed Roadway ROW



Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	46.8465, -97.187
Observation Date	2015-07-01
Elevation (ft)	920.919
Drought Index (PDSI)	Moderate wetness
WebWIMP H ₂ O Balance	Dry Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2015-07-01	2.624803	5.103543	4.086614	Normal	2	3	6
2015-06-01	2.035039	3.803543	8.271654	Wet	3	2	6
2015-05-02	0.851575	1.936221	0.889764	Normal	2	1	2
Result							Normal Conditions - 14

Figures and tables made by the
Antecedent Precipitation Tool
Version 3.0



US Army Corps
of Engineers

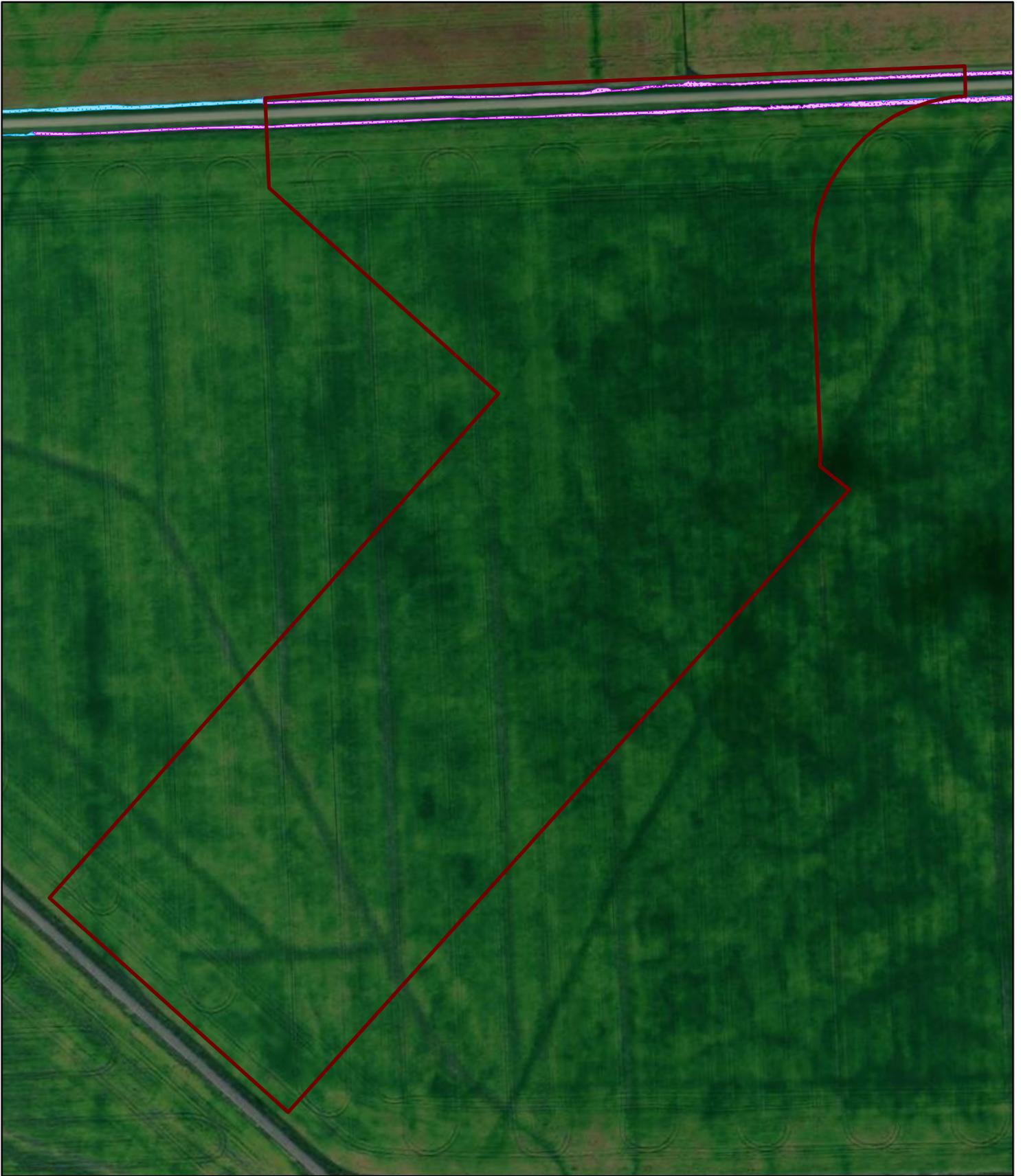


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U.S. Army Engineer Research and
Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
CASSELTON AGRONOMY FARM	46.8769, -97.2328	935.039	3.016	14.12	1.4	10266	90
DURBIN 5.4 WNW	46.8293, -97.2617	943.898	3.561	8.859	1.634	188	0
CHAFFEE 5 NE	46.7958, -97.2686	953.084	5.853	18.045	2.739	869	0
FARGO HECTOR INTL AP	46.9242, -96.812	895.013	20.133	40.026	9.866	30	0

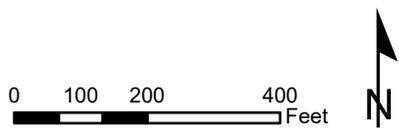
	Hydrology	Area A	Area B
9/27/2023	Drier than Normal	NSS	NSS
7/26/2023	Drier than Normal	NV	NV
9/6/2021	Normal Conditions	NSS	NSS
3/17/2021	Drier than Normal	NSS	NSS
7/24/2019	Normal Conditions	SS	SS
10/18/2018	Wetter than Normal	NSS	NSS
5/19/2018	Drier than Normal	NSS	NSS
6/26/2017	Normal Conditions	NSS	NSS
5/31/2017	Drier than Normal	NSS	NSS
6/23/2016	Normal Conditions	NSS	NSS
5/4/2016	Normal Conditions	NSS	NSS
	Normal years	5	5
	Normal years with indicators	1	1
	Percent normal years with indicators	20%	20%
	Wetland?	No	No

Attachment G – Wetland Summary Map



Wetland Summary Map

Casselton Robert Miller Regional Airport



Legend

 Land Acquisition

Delineated Wetlands

 Field (2022)

 Estimated (2025)



Aquatic Resource Delineation Report

Casselton Robert Miller Regional Airport

Parts of Section 14, the SW Quarter of
Section 13, the Northwest Quarter of Section 24,
and the Northeast Quarter of the Northeast Quarter
of Section 23, Township 139 N., Range 80 W.
Cass County, North Dakota

January 31, 2023

Prepared by:

Lance G. Loken, Professional Soil Classifier, and
Lawrence Mettler, Environmental Scientist,
Western Plains Consulting, Inc.
P.O. Box 1401
Bismarck, North Dakota 58502-1401



Prepared for:

Mr. Evan Barrett
Mead & Hunt, Inc.
2440 Deming Way
Middleton, WI 53562

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	Aquatic Resource Delineation Map
Appendix B	Climate Data
Appendix C	Site Photographs
	Aerial Photographs
Appendix D	Supporting Maps and Data:
	USGS 7.5-Minute Quadrangle Topographic Maps
	NWI Map
	NWI Map Overlay with WPC Wetland Delineation
	NWI Wetlands and Deepwater Map Code Diagram
	Soil Map – Cass County, North Dakota
	Hydric Soil List – All Components
Appendix E	Wetland Determination Data Forms
Appendix F	Plant List

Abbreviations and Acronyms

ARD	Aquatic Resource Delineation
CWA	Clean Water Act
Manual	United State Army Corps of Engineers 1987 Wetland Delineation Manual
NDDOT	North Dakota Department of Transportation
NDGF	North Dakota Game & Fish Department
NRCS	United States Department of Agriculture - Natural Resources Conservation Service
NWI	National Wetland Inventory
NWPL	National Wetland Plant List
NWS	National Weather Service
OHWM	ordinary high-water mark
OW	Other Waters of the United States
PEM1Cx	<i>NWI code for</i> Palustrine, Emergent, Persistent Vegetation, Seasonally Flooded, Excavated
PEM1C	<i>NWI code for</i> Palustrine, Emergent, Persistent Vegetation, Seasonally Flooded
PEMFx	<i>NWI code for</i> Palustrine, Emergent, Semi-permanently Flooded, Excavated
Regional Supplement	Regional Supplement to the United States Army Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0)
SP.	species
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WPC	Western Plains Consulting, Incorporated

Executive Summary

The on-Site determinations of the presence/absence of wetlands and Other Waters of the United States (OW) in the survey area were conducted by Lance G. Loken and Lawrence Mettler, WPC, in accordance with the USACE 1987 Wetland Delineation Manual, hereafter referred to as the Manual, and the Regional Supplement to the USACE Wetland Delineation Manual: Great Plains Region (Version 2.0), hereafter referred to as the Regional Supplement. OW were identified according to instructions provided by the NDDOT and the USACE.

The survey area was identified by Evan Barrett, Manager, Midwest Aviation Planning for Mead & Hunt, Inc., as a part of a planned expansion of the Casselton Robert Miller Regional Airport. Mr. Barrett stated that no development or disturbance is planned within the buildings to the west of the survey area identified on the **Aquatic Resource Delineation Map in Appendix A**. The survey area was comprised of relatively flat to slightly sloped land. There were tilled farmed fields encompassing the airport property that were included in the survey area. The gravel roads, 156th Ave SE and 39th St SE, intersected towards the southern portion of the survey area. There were three (3) wetland areas found within the mowed airport property between the taxiway and runway. The fourth and final wetland centered around the intersection of the two roads and the ditches and along the north end of the railroad tracks bordering the survey area. Most of the vegetation cover that was present was mowed because the survey area consisted of airport property and road ditches.

The survey area, shown as the area within the red boundary on the **Aquatic Resource Delineation Map (Appendix A)**, was approximately 250 acres in size. Four wetlands were delineated within the survey area, totaling 131,106 square feet or approximately 3.01 acres in size.

This report does not address cultural or historic properties.

1. Introduction

The lead contact person and person responsible for this project is:

Mr. Evan Barrett, Manager/ Midwest Aviation Planning
Mead & Hunt
2440 Deming Way
Middleton, WI 53562
evan.barrett@meadhunt.com

The purpose of this report is to identify and describe aquatic resources and to identify known possible sensitive plants, fish, and wildlife species in the survey area. This report facilitates efforts to:

1. Avoid or minimize impacts to aquatic resources during the design process.
2. Document aquatic resource boundary determinations for review by regulatory authorities.
3. Provide early indications of known sensitive species within the survey area.
4. Provide background information.

Evan Barrett, Manager, Mead & Hunt, Inc., requested WPC to complete an aquatic resource delineation at the Casselton Robert Miller Regional Airport and the area surrounding it. The survey area is planned to be additional development of the airport. The developer wants to avoid impacts to jurisdictional wetlands and OWs. See **Appendix A, Location Map**.

The ARD was conducted in the field on November 2nd and 3rd, 2022.

2. Location

The survey area spans the parts of Section 14, the SW Quarter of Section 13, the Northwest Quarter of Section 24, and the Northeast Quarter of the Northeast Quarter of Section 23, Township 139 North, Range 80 West in Cass County, North Dakota. It is located south of Interstate 94 and Casselton, North Dakota by approximately one mile. It is bordered on the north by agricultural land and County Highway 18 (Langer Avenue) bordered to the south by more agricultural land and Red River Valley & Western Railroad. 156th Ave SE and 39th St SE intersect within the southern portion of the survey area. See **Appendix A, Location Map** The survey area was accessed from County Highway 18 (Langer Avenue) or the intersection of 156th Ave SE and 39th St SE.

3. Methods

WPC reviewed available sources that may contain evidence or indicators of wetlands or Other Waters of the U.S. (OW) in the survey area. Off-site data sources reviewed included U.S. Fish & Wildlife Service (FWS) National Wetland Inventory (NWI) map, United States Geological Survey (USGS) Topographic Map, USDA-Natural Resources Conservation Service (NRCS) Web Soil Survey data, Google Earth aerial photographs, and climatic data posted on the U.S. Drought Monitor Website. WPC conducted a review of aerial photography to determine any

areas of interest for wetlands prior to conducting the field assessment. See the images and the comments associated with them in **Appendix C, Aerial Photographs**. WPC walked the entire survey area in the field to evaluate actual conditions, identify aquatic resource indicators, and inventory plant species.

The on-Site determinations of the presence/absence of wetlands and OWs in the survey area were conducted in accordance with the Manual and the Regional Supplement. The Routine Determinations - On-site Inspection Necessary - Areas Equal To or Less Than 5 Acres in Size procedure was followed. Field observations in the survey area were recorded on Wetland Determination Data Forms. Vegetation, soil, and hydrology data were recorded at paired survey points, one on each side of the wetland boundary. The locations of survey points, wetland boundary, and photo points were recorded with a Trimble Geo 7x GPS unit that had \pm 10-centimeter accuracy.

WPC followed instructions from a May 2014 workshop provided by USACE and North Dakota Department of Transportation (NDDOT) employees for determining the presence or absence of OW potentially subject to the Clean Water Act. OWs can include traditional navigable waters (named rivers, streams, and lakes); non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months); and deep-water habitat (greater than 2 meters) not dominated by persistent, emergent vegetation.

4.0 Existing Conditions

The entire survey area was visited after the normal wet period, i.e., in November. WPC determined the hydrologic conditions were much drier than normal at the time of the field survey, based on data obtained from the U.S. Drought Monitor Web site. Refer to **Appendix B, Climatic Data**. The agricultural land that was present within the survey area was tilled, so the soils and hydrology were the only factors that were assessed in the agricultural land. The airport property and road ditches were mowed, which presented a challenge identifying vegetation within the survey area. Western Plains Consulting was still capable of identifying hydric vegetation within these areas.

4.1 Landscape Setting

The survey area included relatively flat land with a few concave features. The concave features mainly occurred in between the airport runway and taxiway where multiple culverts were present. There were two gravel roads that intersected each other within the southern portion of the survey area. There were road ditches adjacent to these roads that were sloped in a way that allowed wetlands to occur. The natural slopes were mapped by NRCS as 0 to 1 or 0 to 2 percent slopes in the survey area. Most of the survey area had been used as agricultural land. The airport property and the road ditches had been historically mowed. The natural climax plant communities were assumed to have been tallgrass prairie because it was within the Red River Valley.

The survey area was approximately 250 acres in size. The gradient of the survey area appears to be from around 933 feet in the northwest of the survey area to approximately 923 feet in the furthest southeast reaches of the survey area. See **Appendix D, Supporting Maps and Data Topographic Map**.

The survey area included four NRCS soil map units. NRCS classified two of the soil map units as typically having 2 percent hydric inclusions and another as typically having 4 percent hydric inclusions. The Fargo silty clay, 0 to 1 percent slopes was classified as having 100 percent hydric inclusion. However, not all “hydric” soils are considered wetland soils. Fargo itself is not considered a wetland soil if drained, but it can be a wetland soil if mapped as Fargo ponded. This soil was not mapped as Fargo ponded, and the soils WPC evaluated often did not include wetland indicators. Most of this soil series within the survey area had been tilled during the on-Site visit and may be tile drained. Refer to **Appendix D, Supporting Maps and Data - Hydric Soil List – All Components**.

WPC considered the survey area to have slight habitat potential for the rusty patched bumble bee, a species listed as endangered under the Endangered Species Act.

For species listed by NDGF as Species of Conservation Priority, the survey area was considered to have significant habitat potential for the monarch butterfly, smooth green snake, and western meadowlark.

For species listed by NDGF as Species of Conservation Priority, the survey area was considered by WPC to have minor or unknown habitat potential for Swainson’s Hawk, Black-billed Cuckoo, Aquatic Resource Delineation Report
Casselton Robert Miller Regional Airport
WPC Project No. 531-01-LL

January 31, 2023

Regal Fritillary, American Kestrel, Loggerhead Shrike, plains pocket mouse, Eastern Spotted Skunk, and gray fox.

Note: WPC only provides comments about potential species use/presence in the survey area as conjecture based on a cursory review of data; the comments are insufficient for a Biological Assessment or Biological Evaluation. This report only addresses potential species presence and/or habitat in the part of the Site that is planned for development.

The entire survey area was field verified on foot.

4.2 Aquatic Resources

There were three wetlands that were part of the survey area that met all three wetland criteria in the Manual. These were wetlands 1, 2, and 4. Wetlands 1 and 2 were located on the northern half of the airport property within the runway and taxiway. Both Wetland 1 and 2 were split into 2 parts with an A and B wetland because there was a culvert that was between them. Wetland 3 did not meet the criteria for hydric soils, but it was WPC's professional opinion that with the hydric vegetation and hydrology present that the area of Wetland 3 was functioning as a wetland. Wetland 3 was located near the southern portion of the airport property. Wetland four was split into eight parts because of the use of culverts near the intersection of 156th Ave SE and 39th St SE. These culverts ultimately divided portions of the same wetland. There were also three non-wetland points that were surveyed within the survey. These survey points were documented to determine whether a wetland was present in that area and ultimately there was not any hydric soils present to indicate a wetland. The non-wetland points were all taken within the airport property and their locations can be observed in **Appendix A, Aquatic Resource Delineation Map**. The total vegetation, soil, and hydrology data collected in the field for the wetlands and non-wetland points are documented in **Appendix E, Wetland Determination Data Forms**.

For a better understanding of the Site and the aquatic resources, see **Appendix A, Aquatic Resource Delineation Map**. See **Appendix C, Site Photographs**, for visual documentation of each aquatic resource delineation. See **Appendix D - Supporting Maps and Data - NWI Map**, for USFWS' Cowardin classifications of the aquatic resources. Soils information for the survey area and wetland survey point locations are contained in **Appendix D - Supporting Maps and Data -Soil Map – Cass County, North Dakota** and **Hydric Soil List - All Components - Burleigh County, ND**. An inventory of all plant species observed in the survey area is in **Appendix F, Plant List**.

Wetland 1

The approximate location where the survey points (W-1, Upl-1) were taken can be observed in **Appendix A, Aquatic Resource Delineation Map**. There were two sections of Wetland 1 that were connected by a culvert. The location of Wetland 1A (0.01 acres) and Wetland 1B (0.08 acres) can be observed in **Appendix A, Aquatic Resource Delineation Map** as well.

Wetland Point (W-1)

The airport property where the wetland survey point (W-1) and upland survey point (Upl-1) for this wetland were maintained and mowed. Therefore, the species diversity was

limited, and identification was made difficult due to the lack of fruiting structure and the dormant season. However, WPC found the dominant species in the wetland survey area to be Rushes (*Juncus sp.*, FACW) covering 75 percent of the area. There was also Kentucky Blue Grass (*Poa pratensis*, FACU) covering about 20 percent of the area with about 5 percent of bare ground present. See **Appendix C, Photographs**, Photos #3 and 4 for a visual of W-1. Plant communities did meet the Rapid Test for hydrophytic vegetation criteria.

The soil described has a 0 to 7 inches, A horizon, which was a clay loam and was 95 percent black (2.5Y 2.5/1). There was no reaction to dilute hydrochloric acid (HCl). There were common (5%) fine distinct white (2.5Y 8/1) salt crystals present. The 7 to 16 inch horizon has 55% dark grayish brown (2.5Y 4/2) matrix with 30% dark gray (2.5Y 4/1) many fine and medium distinct iron depletions in the matrix, and common fine and medium prominent brown (7.5YR 4/4) at 15% in the matrix iron and manganese concentrations. No hydric soil indicator was identified on-Site, but WPC used “Other” for the wetland indicator status. As the hydrophytic vegetation and hydrology indicators were present, and the 7 to 16 inch horizon had 2 chroma with redox features, it is WPC’s opinion that this soil was behaving as a wetland soil.

The wetland survey point (W-1) had wetland hydrology indicators of Drainage Patterns (B10), Geomorphic Position (D2), and FAC-Neutral Test (D5) noted. No surface water, water table, or saturation was present since at the time of the survey the area was within a severe drought as indicated in the U.S Drought Monitor, see **Appendix B, Climate Data**. If this condition was not present, WPC anticipates that the field observations for hydrology would differentiate. Since hydric vegetation and hydrology was present at survey point W-1 and it was WPC professional opinion that the soils were acting as a hydric soil, the area of W-1 was considered a wetland.

Upland Point (Upl-1)

The upland point for Wetland 1 was mostly dominated by upland grasses. Kentucky Blue Grass (*Poa pratensis*, FACU) covered approximately 60 percent of the survey area followed by Smooth Brome (*Bromus inermis*, UPL) at 40 percent and a slight presence of Fox-tail Barley (*Hordeum jubatum*, FACW). Plant communities did not meet any hydrophytic vegetation criteria at the upland survey point.

The 0 to 10 inch horizon was a clay loam and had 80% of the matrix as black (2.5Y 2.5/1) and 15% dark grayish brown (2.5Y 4/2) from apparent soil mixing in the past. There were also common (5%) fine and medium distinct 2.5Y 8/1 salt crystals present. The 10 to 16 inch horizon was a silty clay loam with a matrix that was 95% olive brown (2.5Y 4/3) with common (5%) fine and medium dark yellowish brown (10YR 4/4) soft iron and manganese concentrations (redox features) present. However, the 3 chroma means this was not a wetland soil. No hydric soil indicator was identified on-Site.

The upland point (Upl-1) had no wetland hydrology indicators noted. No surface water, water table, or saturation was present since at the time of the survey the area was within a severe drought as indicated in the U.S Drought Monitor, see **Appendix B, Climate Data**. If this condition was not present, WPC anticipates that the field observations for

hydrology may have differentiated. However, since the vegetation did not meet criteria for hydrophytic vegetation and the soils were too light in color and exhibited no hydric qualities, WPC determined the area of UPL-1 was not a wetland.

Wetland 2

The approximate location where the points (W-2, Upl-2) were taken can be observed in **Appendix A, Aquatic Resource Delineation Map**. There were two sections of Wetland 2 that were connected by a culvert. The location of Wetland 2A (0.41 acres) and Wetland 2B (0.21 acres) can be observed in **Appendix A, Aquatic Resource Delineation Map** as well. There was a wetland that was identified by the NWI that was within the location of Wetland 2. The NWI wetland that is shown in **Appendix D, NWI Map** was an approximate 0.72 acres. The comparison between this wetland and Wetland 2 can be found in **Appendix D, NWI Overlay Map**. The ground truth found the wetland to actually be smaller than shown on the NWI.

Wetland Point (W-2)

The airport property where the wetland survey point (W-2) and upland survey point (Upl-2) for this wetland was maintained and mowed. Therefore, the species diversity was limited, and identification was made difficult due to the lack of fruiting structure and the dormant season. However, WPC found the dominant species in the wetland survey area to be Rushes (*Juncus sp.*, FACW) covering 55 percent of the area. Common Knotweed (*Polygonum arenastrum*, FACU) at 35 percent cover and Western Wheatgrass (*Pascopyrum smithii*, FACU) at 10 percent cover. See **Appendix C, Photographs**, Photos #5, 6, 8 for a visual of W-2 and Wetland 2A and B. Plant communities did meet the Prevalence Index for hydrophytic vegetation criteria.

The soil described has a 0 to 6 inches, A horizon, which was a clay loam and was 90 percent black (2.5Y 2.5/1). There were common (10%) fine distinct white (2.5Y 8/1) salt crystals present. The 6 to 12 inch horizon was a clay loam and had a mixed matrix from apparent past construction activity or soil mixing and was 55% dark grayish brown (2.5Y 4/2) matrix with 45% black (2.5Y 2.5/1) mixed matrix. The 12 to 16+ inch horizon was a silty clay loam and had very dark grayish brown (2.5Y 4/2) at 55% in the matrix. There were common (15%) fine and medium prominent black (7.5YR 2.5/1) manganese concentrations and many (30%) fine and medium prominent brown (7.5YR 4/4) soft iron and manganese concentrations (redox features) present. No hydric soil indicator was identified on-Site, but WPC used “Other” for the wetland indicator status. As the hydrophytic vegetation and hydrology indicators were present, and the 12 to 16+ inch horizon had 2 chroma with redox features, it is WPC’s opinion that this soil was behaving as a wetland soil.

The wetland survey point (W-2) had wetland hydrology indicators of Drainage Patterns (B10), Geomorphic Position (D2), and FAC-Neutral Test (D5) noted. No surface water, water table, or saturation was present since at the time of the survey the area was within a severe drought as indicated in the U.S Drought Monitor, see **Appendix B, Climate Data**. If this condition was not present, WPC anticipates that the field observations for hydrology would differentiate. Since hydric vegetation and hydrology was present at survey point W-2 and it was WPC professional opinion that the soils were acting as a hydric soil, the area of W-2 was considered a wetland.

Upland Point (Upl-2)

The upland point for Wetland 2 was mostly dominated by upland grasses. Kentucky Blue Grass (*Poa pratensis*, FACU) covered approximately 50 percent of the survey area followed by Smooth Brome (*Bromus inermis*, UPL) at 50 percent and a slight presence of Common Dandelion (*Taraxacum officinale*, FACU) at 10 percent. See **Appendix C, Photographs**, Photo 7 for a visual of Upl-2. Plant communities did not meet any hydrophytic vegetation criteria at the upland survey point.

The 0 to 8 inch horizon was a clay loam and had 80% of the matrix as black (2.5Y 2.5/1). There were also many (20%) fine and medium distinct 2.5Y 8/1 salt crystals present. The 8 to 12 inch horizon was a clay loam with a mixed matrix that was 55% black (2.5Y 2.5/1) and 40% dark grayish brown (2.5Y 4/2) with common (5%) fine and medium yellowish red (5YR 4/6) relic iron concentrations present. This horizon showed evidence of mixing from 8 to 12 inches, possibly from past construction activity. The 12 to 16+ horizon was a silty clay loam with a matrix of 75% olive brown (2.5Y 4/3) with many (25%) fine and medium prominent brown (5YR 4/4) soft iron and manganese concentrations that appeared to be contemporary, thus redox features. However, the 3 chroma means this was not a wetland soil. No hydric soil indicator was identified on-Site.

The upland survey point (Upl-2) had no wetland hydrology indicators noted. No surface water, water table, or saturation was present since at the time of the survey the area was within a severe drought as indicated in the U.S Drought Monitor, see **Appendix B, Climate Data**. If this condition was not present, WPC anticipates that the field observations for hydrology may have differentiated. However, since the vegetation did not meet the criteria for hydrophytic vegetation and the soils were too light in color and exhibited no hydric qualities, WPC determined the area of UPL-2 was not a wetland.

Wetland 3

The approximate location where the survey points (W-3, Upl-3) were taken can be observed in **Appendix A, Aquatic Resource Delineation Map**. The location of Wetland 3 (0.05 acres) can be observed in **Appendix A, Aquatic Resource Delineation Map** as well.

Wetland Point (W-3)

The airport property where the wetland survey point (W-3) and upland survey point (Upl-3) for this wetland were maintained and mowed. Therefore, the species diversity was limited, and identification was made difficult due to the lack of fruiting structure and the dormant season. However, WPC found the dominant species in the wetland survey area to be Rushes (*Juncus sp.*, FACW) covering 85 percent of the area with a sparse 2 percent of Kentucky Bluegrass (*Poa pratensis*, FACU). There was approximately 25 percent bare ground within the survey point radius. See **Appendix C, Photographs**, Photos #14 for a visual of Wetland 3. Plant communities did meet the Rapid Test for hydrophytic vegetation criteria.

No hydric soil indicator was identified on-Site. The soil described has a 0 to 6 inches, A horizon, which was a clay loam and was 100 % black (2.5Y 2.5/1). The 6 to 12+ inch depth (A horizon) was a silty clay loam and was 100% light olive brown (2.5Y 5/3).

However, as the hydrophytic vegetation and hydrology indicators were present, it was WPC's opinion that this soil was behaving as a wetland soil and should be considered an aquatic resource. As there were 3 chroma below 6 inches, WPC did not state "Other" for hydric soil indicator status.

The wetland survey point (W-3) had wetland hydrology indicators of Surface Cracks (B6), Geomorphic Position (D2), and FAC-Neutral Test (D5) noted. No surface water, water table, or saturation was present since at the time of the survey the area was within a severe drought as indicated in the U.S Drought Monitor, see **Appendix B, Climate Data**. If this condition was not present, WPC anticipates that the field observations for hydrology would differentiate. Since hydric vegetation and hydrology was present at survey point W-3 and was considered a wetland.

Upland Point (Upl-3)

The upland point for Wetland 3 was mostly dominated by upland grasses. Kentucky Blue Grass (*Poa pratensis*, FACU) covered approximately 50 percent of the survey area followed by Smooth Brome (*Bromus inermis*, UPL) at 50 percent and a slight presence of Common Dandelion (*Taraxacum officinale*, FACU) at 5 percent. There was approximately 5 percent bare ground within the point radius. See **Appendix C, Photographs**, Photos #15 for a visual of Upl-3. Plant communities did not meet any hydrophytic vegetation criteria at the upland survey point.

The 0 to 12 inch horizon was a clay loam and had a 90% matrix as black (2.5Y 2.5/1). There were also common (10%) fine and medium distinct 2.5Y 8/1 salt crystals present. The 12 to 15 inch horizon was a silty clay loam with a matrix that was 100 % dark grayish brown (2.5Y 4/2) with no redox features present. The 15 to 23 inch horizon was a clay loam with a matrix of 90% olive brown (2.5Y 4/3) with common (10%) fine and medium distinct light gray (2.5Y 7/1) soft lime masses. However, the 3 chroma from 15 to 23 inches means this was not a wetland soil. No hydric soil indicator was identified on-Site.

The upland survey point (Upl-3) had no wetland hydrology indicators noted. No surface water, water table, or saturation was present since at the time of the survey the area was within a severe drought as indicated in the U.S Drought Monitor, see **Appendix B, Climate Data**. If this condition was not present, WPC anticipates that the field observations for hydrology may have differentiated. However, since the vegetation did not meet the criteria for hydrophytic vegetation and the soils were too light in color and exhibited no hydric qualities, WPC determined the area of UPL-3 was not a wetland.

Wetland 4

The approximate location where the survey points (W-4, W-4E, and Upl-4) were taken can be observed in **Appendix A, Aquatic Resource Delineation Map**. There were eight sections of Wetland 4 that were connected by a culvert. The location of Wetland 4A (0.05 acres), 4B (0.07 acres), 4C (0.15 acres), 4D (0.11 acres), 4E (0.45 acres), 4F (0.01 acres), 4G (0.05 acres), and 4H (1.36 acres) can be observed in **Appendix A, Aquatic Resource Delineation Map** as well.

Wetland Point (W-4)

The wetland survey point (W-4) was within a channel that was near the railroad tracks off-Site. The upland survey point (Upl-4) and additional wetland point (W-4E) for this wetland was maintained and mowed because it was near or in the road ditch. Therefore, the species diversity was limited in Upl-4 and W-4E, and identification was made difficult due to the lack of fruiting structure and the dormant season. However, WPC found the dominant species in the wetland survey area W-4 to be Reed Canary Grass (*Phalaris arundinacea*, FACW) covering 40 percent of the area and Cattails (*Typha sp.*, OBL) covering 30 percent. There was approximately 30 percent of bare ground within the survey point radius. See **Appendix C, Photographs**, Photos #17 and 18 for a visual of the W-4 survey point area. Plant communities did meet the Rapid Test for hydrophytic vegetation criteria.

The soil described has a 0 to 4 inches, A horizon, which was a clay loam and was 100% very dark gray (2.5Y 3/1). This horizon showed evidence in the soil structure of compaction. The 4 to 7 inch horizon was a silty clay loam and had a mixed matrix from apparent past construction activity or soil mixing and was 45% very dark gray (2.5Y 3/1) matrix with 55% dark grayish brown (2.5Y 4/2) mixed matrix with no redox features present. The 7 to 13 inch horizon was a clay loam and was 90% very dark grayish brown (2.5Y 4/2) matrix. There were common (10%) fine and medium distinct light gray (2.5Y 7/2) soft lime masses present. The 13 to 24 inch horizon was a clay loam that had a 75% matrix of dark grayish brown (2.5Y 4/2), with many (25%) fine and medium distinct light gray (2.5Y 7/2) soft lime masses. No redox features were noted in this soil profile. No hydric soil indicator was identified on-Site, but WPC used “Other” for the wetland indicator status. As the hydrophytic vegetation and hydrology indicators were present, and the 7 to 13 and 13 to 24 inch horizons had 2 chroma, but with no redox features, it is WPC’s opinion that this soil was behaving as a wetland soil.

The wetland survey point (W-4) had wetland hydrology indicators of Algal Mat or Crust (B4), Drainage Patterns (B10), Geomorphic Position (D2), and FAC-Neutral Test (D5) noted. No surface water, water table, or saturation was present since at the time of the survey the area was within a severe drought as indicated in the U.S Drought Monitor, see **Appendix B, Climate Data**. If this condition was not present, WPC anticipates that the field observations for hydrology would differentiate. Since hydric vegetation and hydrology was present at survey point W-4 and it was WPC professional opinion that the soils were acting as a hydric soil, the area of W-4 was considered a wetland.

Wetland Point (W-4E)

WPC found the dominant species in the wetland survey area W-4E to be Reed Canary Grass (*Phalaris arundinacea*, FACW) covering 30 percent of the area and Rushes (*Juncus sp.*, FACW) covering 30 percent. There was approximately 20 percent of Prairie Cordgrass (*Spartina pectinata*, FACW) covering the survey point radius. See **Appendix C, Photographs**, Photos #23 and 24 for a visual of the W-4E survey point area. Plant communities did meet the Dominance Test for hydrophytic vegetation criteria.

The soil described has a 0 to 4 inches, A horizon, which was a clay loam and was 90% black (2.5Y 2.5/1). There were common (10%) fine and medium distinct white (2.5Y 8/1) salt crystals. The 4 to 8 inch horizon was a clay loam and was 100% black (2.5Y 2.5/1) matrix with no redox features present. The 8 to 14 inch horizon was a silty clay loam and had a mixed matrix that was 55% very dark grayish brown (2.5Y 4/2) and 40% black (2.5Y 8/1) matrix. There were common (5%) fine and medium prominent dark yellowish brown (10YR 4/4) soft iron and manganese concentrations (redox features) noted. The mixed matrix indicates past soil mixing, perhaps from the past road construction activities. The 14 to 30 inch horizon was a clay loam that had a 75% matrix of very dark grayish brown (2.5Y 3/2), with many (20%) fine and medium distinct light gray (2.5Y 7/2) soft lime masses, and common (5%) fine and medium prominent dark yellowish brown (10YR 4/4) soft iron and manganese concentrations (redox features) noted in the matrix. No hydric soil indicator was identified on-Site, but WPC used "Other" for the wetland indicator status. As the hydrophytic vegetation and hydrology indicators were present, and the 8 to 14 inch horizon has 1 and 2 chroma, and the 14 to 30 inch horizon had 2 chroma, both with redox features, it is WPC's opinion that this soil, along with the hydrophytic vegetation and hydrology indicators, was behaving as a wetland soil.

The wetland survey point (W-4E) had wetland hydrology indicators of Water-Stained Leaves (B9), Salt Crust (B11), Drainage Patterns (B10), and Geomorphic Position (D2) was noted. No surface water, water table, or saturation was present since at the time of the survey the area was within a severe drought as indicated in the U.S Drought Monitor, see **Appendix B, Climate Data**. If this condition was not present, WPC anticipates that the field observations for hydrology would differentiate. Since hydric vegetation and hydrology was present at survey point W-4E and it was WPC professional opinion that the soils were acting as a hydric soil, the area of W-4E was considered a wetland.

Upland Point (Upl-4)

The upland point for Wetland 4 was mostly dominated by upland grasses. Kentucky Blue Grass (*Poa pratensis*, FACU) covered approximately 35 percent of the survey area followed by Smooth Brome (*Bromus inermis*, UPL) at 35 percent and Reed Canary Grass (*Phalaris arundinacea*, FACW) at 20 percent. There was a slight presence of Foxtail Barley (*Hordeum jubatum*, FACW) at 3 percent and approximately 7 percent bare ground. Plant communities did not meet any hydrophytic vegetation criteria at the upland survey point.

The 0 to 12 inch horizon was a clay loam and had a 100% matrix as black (2.5Y 2.5/1). The 12 to 14 inch horizon was a clay loam with a matrix that was 85% black (2.5Y 2.5Y/1) with common (15%) fine and medium distinct white (2.5Y 8/1) salt crystals. The 14 to 17 inch horizon was a silty clay loam with a matrix of 90% dark grayish brown (2.5Y 4/2) with common (10%) fine and medium distinct white (2.5Y 8/1) salt crystals. The 17 to 27 inch horizon was a silty clay loam that had a 95% matrix of olive brown (2.5Y 4/3) with common (5%) fine and medium prominent brown (7.5YR 4/4) soft iron and manganese concentrations (redox features) in the matrix. However, the 3 chroma from 17 to 23 inches means this was not a wetland soil. No hydric soil indicator was identified on-Site.

The upland survey point (Upl-4) had no wetland hydrology indicators noted. No surface water, water table, or saturation was present since at the time of the survey the area was within a severe drought as indicated in the U.S Drought Monitor, see **Appendix B, Climate Data**. If this condition was not present, WPC anticipates that the field observations for hydrology may have differentiated. However, since the vegetation did not meet the criteria for hydrophytic vegetation and the soils were too light in color and exhibited no hydric qualities, WPC determined the area of UPL-4 was not a wetland.

Data for the aquatic resources in the survey area are listed in Table 1 below.

Table 1. Aquatic Resources within the Survey Area

Aquatic Resource Name	Cowardin Classification By NWI	Cowardin Classification by WPC	Location – Latitude	Location – Longitude	Aquatic Resource Size (acres)	Square Footage	
Wetland 1A	-	PEM1C	46.857363	-97.214197	0.01	534	
Wetland 1B	-	PEM1C	46.856808	-97.213186	0.08	3,698	
Wetland 2A	PEM1Cx	PEM1Cx	46.855025	-97.210206	0.41	17,693	
Wetland 2B	PEM1Cx	PEM1Cx	46.854147	-97.208900	0.21	9,112	
Wetland 3	-	PEM1C	46.850669	-97.203969	0.05	2,352	
Wetland 4A	-	PEMFx	46.846955	-97.200491	0.05	2,231	
Wetland 4B	-	PEM1Cx	46.847081	-97.199651	0.07	2,879	
Wetland 4C	-	PEM1Cx	46.847090	-97.196716	0.15	6,418	
Wetland 4D	-	PEM1Cx	46.847214	-97.193260	0.11	5,004	
Wetland 4E	-	PEM1Cx	46.847226	-97.197743	0.45	19,504	
Wetland 4F	-	PEM1Cx	46.847479	-97.200333	0.01	361	
Wetland 4G	-	PEM1Cx	46.847231	-97.200696	0.05	2,097	
Wetland 4H	-	PEMFx	46.849609	-97.204583	1.36	59,223	
					Wetland Sum	3.01	131,106
					OW Sum	0	0

Non-Wetland 1

The airport property where survey point Non-Wetland 1 was located was maintained and mowed. Therefore, the species diversity was limited, and identification was made difficult due to the lack of fruiting structure and the dormant season. However, WPC found the dominant species in the survey area to be Smooth Brome (*Bromus inermis*, UPL) covering 65 percent of the area. There was also Kentucky Blue Grass (*Poa pratensis*, FACU) covering about 45 percent of the area and Common Dandelion (*Taraxacum officinale*, FACU) at 10 percent. See **Appendix C, Photographs**, Photo #1 for a visual of the survey area of Non-Wetland 1. Plant communities did not meet any criteria for hydrophytic vegetation.

The 0 to 7 inch horizon was a clay loam and had a 100% matrix as black (2.5Y 2.5/1). The 7 to 10 inch horizon was a clay loam with a mixed matrix that was 50% black (2.5Y 2.5/1) and 50 % dark grayish brown (10YR 4/2) with no redox features present. The 10 to 12 inch horizon was a clay loam with a matrix of 100% grayish brown (2.5Y 5/2) with no redox features present. The 12 to 25 inch horizon was a clay loam that had a 100% matrix of dark grayish brown (2.5Y 4/2)

with no redox features present. However, the various 2 chroma with no redox features present, means this was not a wetland soil. No hydric soil indicator was identified on-Site.

Non-Wetland 1 had one wetland hydrology indicator of Geomorphic Position (D2) noted. No surface water, water table, or saturation was present since at the time of the survey the area was within a severe drought as indicated in the U.S Drought Monitor, see **Appendix B, Climate Data**. If this condition was not present, WPC anticipates that the field observations for hydrology may have differentiated. Since wetland hydrology indicator Geomorphic Position (D2) is a secondary indicator, there was not enough hydrology to deem this area wetland status.

Non-Wetland 2

The airport property where survey point Non-Wetland 2 was located was maintained and mowed. Therefore, the species diversity was limited, and identification was made difficult due to the lack of fruiting structure and the dormant season. However, WPC found the dominant species in the survey area to be Rushes (*Juncus sp.*, FACW) covering 70 percent of the area. There was also Red Clover (*Trifolium pratense*, FACU) covering about 20 percent of the area and Western Wheatgrass (*Pascopyrum smithii*, FACU) at 10 percent. See **Appendix C, Photographs**, Photos #9-11 for a visual of the survey area of Non-Wetland 2. Plant communities did meet the Dominance Test for hydrophytic vegetation criteria.

The 0 to 4 inch horizon was a clay loam and had a 100% matrix as very dark gray (2.5Y 3/1). The 4 to 16 inch horizon was a silty clay loam with a 70% matrix that was light olive brown (2.5Y 5/3) with many (30%) fine and medium prominent brown (7.5YR 4/4) soft iron and manganese concentrations (redox features) in the matrix. However, the 3 chroma means this was not a wetland soil. No hydric soil indicator was identified on-Site.

Non-Wetland 2 had one wetland hydrology indicator of Geomorphic Position (D2) noted. No surface water, water table, or saturation was present since at the time of the survey the area was within a severe drought as indicated in the U.S Drought Monitor, see **Appendix B, Climate Data**. If this condition was not present, WPC anticipates that the field observations for hydrology may have differentiated. Since wetland hydrology indicator Geomorphic Position (D2) is a secondary indicator, there was not enough hydrology to deem this area wetland status.

Non-Wetland 3

The airport property where survey point Non-Wetland 3 was located was maintained and mowed. Therefore, the species diversity was limited, and identification was made difficult due to the lack of fruiting structure and the dormant season. However, WPC found the dominant species in the survey area to be Rushes (*Juncus sp.*, FACW) covering 100 percent of the area with 5 percent bare ground. See **Appendix C, Photographs**, Photos #12 and 13 for a visual of the survey area of Non-Wetland 3. Plant communities did meet the Rapid Test for hydrophytic vegetation criteria.

The 0 to 10 inch horizon was a clay loam and had a 100% matrix of black (2.5Y 2.5/1). The 10 to 16 inch horizon was a silty clay loam with a 100% matrix that was light olive brown (2.5Y

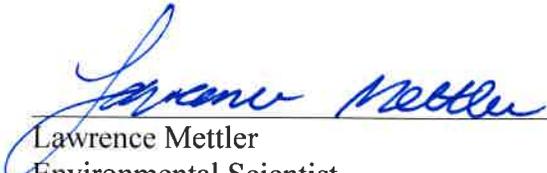
5/3). The 3 chroma means this was not a wetland soil. No hydric soil indicator was identified on-Site.

Non-Wetland 3 had one wetland hydrology indicator of Geomorphic Position (D2) noted. No surface water, water table, or saturation was present since at the time of the survey the area was within a severe drought as indicated in the U.S Drought Monitor, see **Appendix B, Climate Data**. If this condition was not present, WPC anticipates that the field observations for hydrology may have differentiated. Since wetland hydrology indicator Geomorphic Position (D2) is a secondary indicator, there was not enough hydrology to deem this area wetland status.

5.0 Signatures of Report Developers

Services performed by the scientists of WPC for this project have been conducted in a professional manner consistent with that level of care and skill ordinarily exercised by members of this profession currently practicing in this area under similar time and budget restraints. No warranty, expressed or implied, is made.

This Aquatic Resource Delineation Report was completed by WPC, Inc.'s Environmental Scientist Lawrence Mettler under the direct supervision and collaboration with WPC, Inc.'s Professional Soil Classifier, Lance G. Loken.



Lawrence Mettler
Environmental Scientist

Date 1/31/23



Lance Loken
Professional Soil Classifier #68

Date 1/31/23

6.0 Credentials of Aquatic Resource Delineators

Name: **Lawrence T. Mettler**

Education: North Dakota State University – B.S., Range Science

Relevant Work/Educational Experience: Mettler was a technician assistant with the NDSU Range Science department and conducted vegetation and soil surveys on coal mine restoration projects. Mettler also gained field experience during his wetland resource management course that extensively used the HGM model and the Army Corps of Engineers standards to assess wetlands. Soils and plant identification courses were also an intensive amount of Mettler's degree at North Dakota State University.

Name: **Lance G. Loken**

Education: North Dakota State University - M.S., Soil Science (Wetland Soils Genesis)
North Dakota State University - B.S., Earth Science

Certifications: Professional Soil Classifier # 68, State of North Dakota

Professional Membership:

- Member and Past-President, ND Chapter of the Soil & Water Conservation Society
- Member and Past-President, Professional Soil Classifiers Association of North Dakota
- Past Director - National Board, Current National Chair of Environmental Assessment Committee, Member, Environmental Information Association
- Past Director - Board, North Dakota Solid Waste & Recycling Association
- Member, ASTM, Member E-50 Committee
- Member, North Dakota Geological Society
- Director, High Plains Business Opportunities Association
- Member, Environmental Assessment Association
- Registered Professional Soil Classifier, Number 68, North Dakota Board of Registered Professional Soil Classifiers
- Governor-appointed member of the North Dakota Board of Registered Professional Soil Classifiers, Current

Training: Hydrogeomorphic Approach to Assessment of Wetland Function in Temporary and Seasonal Pothole Wetlands
NDDOT - Wetland Delineation Workshop

7.0 References

Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service. Available online: <https://www.fws.gov/wetlands/documents/classification-of-wetlands-and-deepwater-habitats-of-the-united-states.pdf>

Google Earth Website. <https://www.earthpoint.us/Townships.aspx>

Natural Resources Conservation Service. United States Department of Agriculture. Plants Database. <https://plants.sc.egov.usda.gov/home>

North Dakota Department Of Transportation, 2014. Wetland Delineation Workshop (handbook/binder)

U.S. Drought Monitor Website <https://droughtmonitor.unl.edu>

U.S. Army Corps of Engineers. 1987. US Army Corps of Engineers Wetlands Delineation Manual. Available on line at:

<https://usace.contentdm.oclc.org/digital/collection/p266001coll1/id/4532>

U.S. Army Corps of Engineers, March 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0). Available online:

<https://usace.contentdm.oclc.org/utills/getfile/collection/p266001coll1/id/7613>

U.S. Army Corps of Engineers. National Wetland Plant List. Available online:

https://wetland-plants.sec.usace.army.mil/nwpl_static/v34/home/home.html

United States Fish and Wildlife Service. National Wetlands Inventory. Available on line:

<https://www.fws.gov/wetlands/data/Mapper.html> Accessed August 2021.

United States Geological Survey <https://gishubdata-ndgov.hub.arcgis.com/datasets/ndgishub-quad-index/explore?location=46.783830%2C-100.598065%2C11.45>

Appendix A

Appendix A. Location Map



Aquatic Resource Delineation – Casselton Robert Miller Regional Airport

The Survey area was mostly located in Section 14, T139N, R52W, but also included portions of the SW Quarter of Section 13, T139N, R52W, the NW Quarter of Section 24, T139N, R52W, and the NE Quarter of the NE Quarter of Section 23, T139N, R52W. The NW corner of the Site was approximately one mile south of Interstate 94 and South of Casselton, North Dakota.

Cass County, North Dakota
Google Earth Image –March 2021

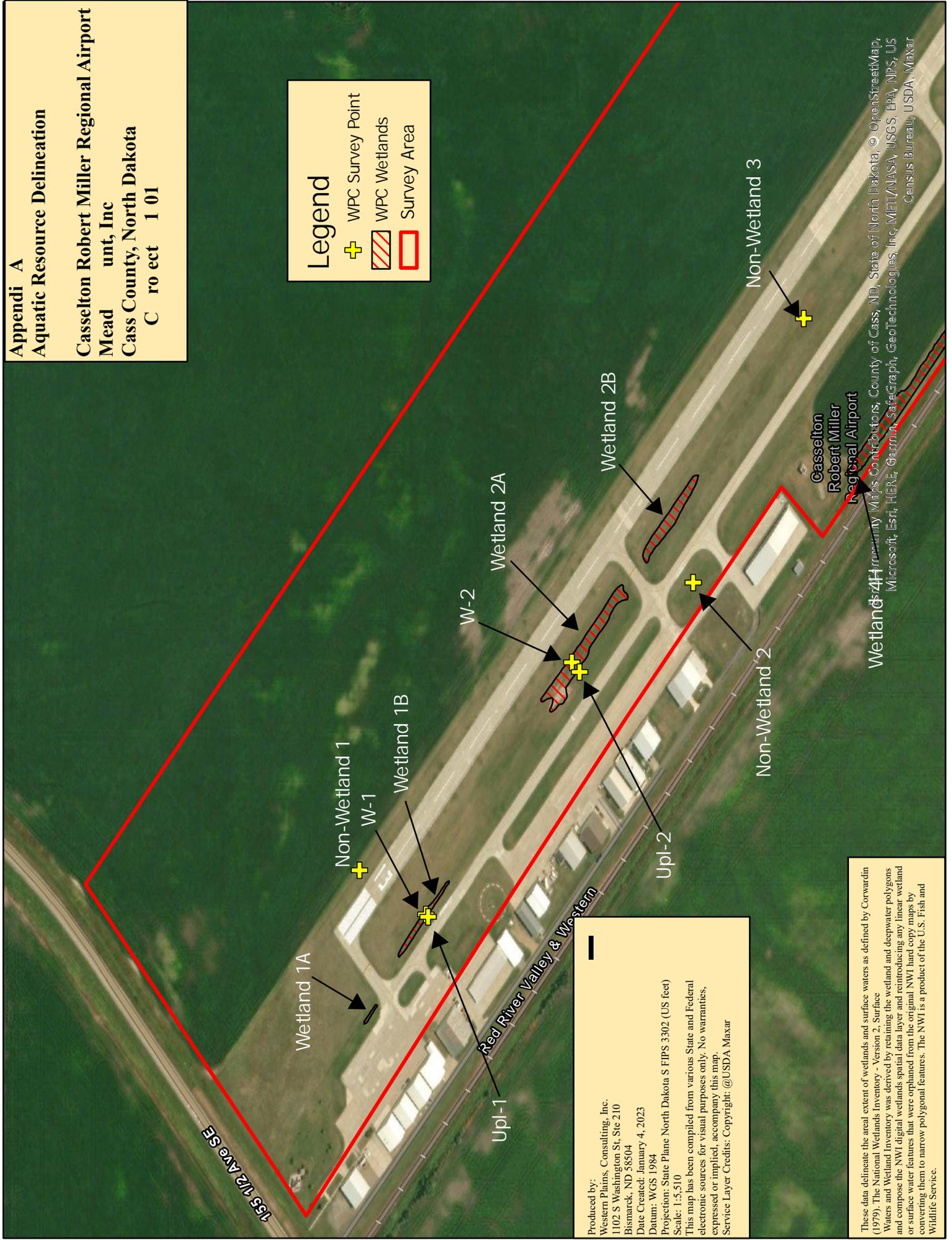


Appendix A
Aquatic Resource Delineation

Casselton Robert Miller Regional Airport
Mead County, North Dakota
Project 101

Legend

-  WPC Survey Point
-  WPC Wetlands
-  Survey Area



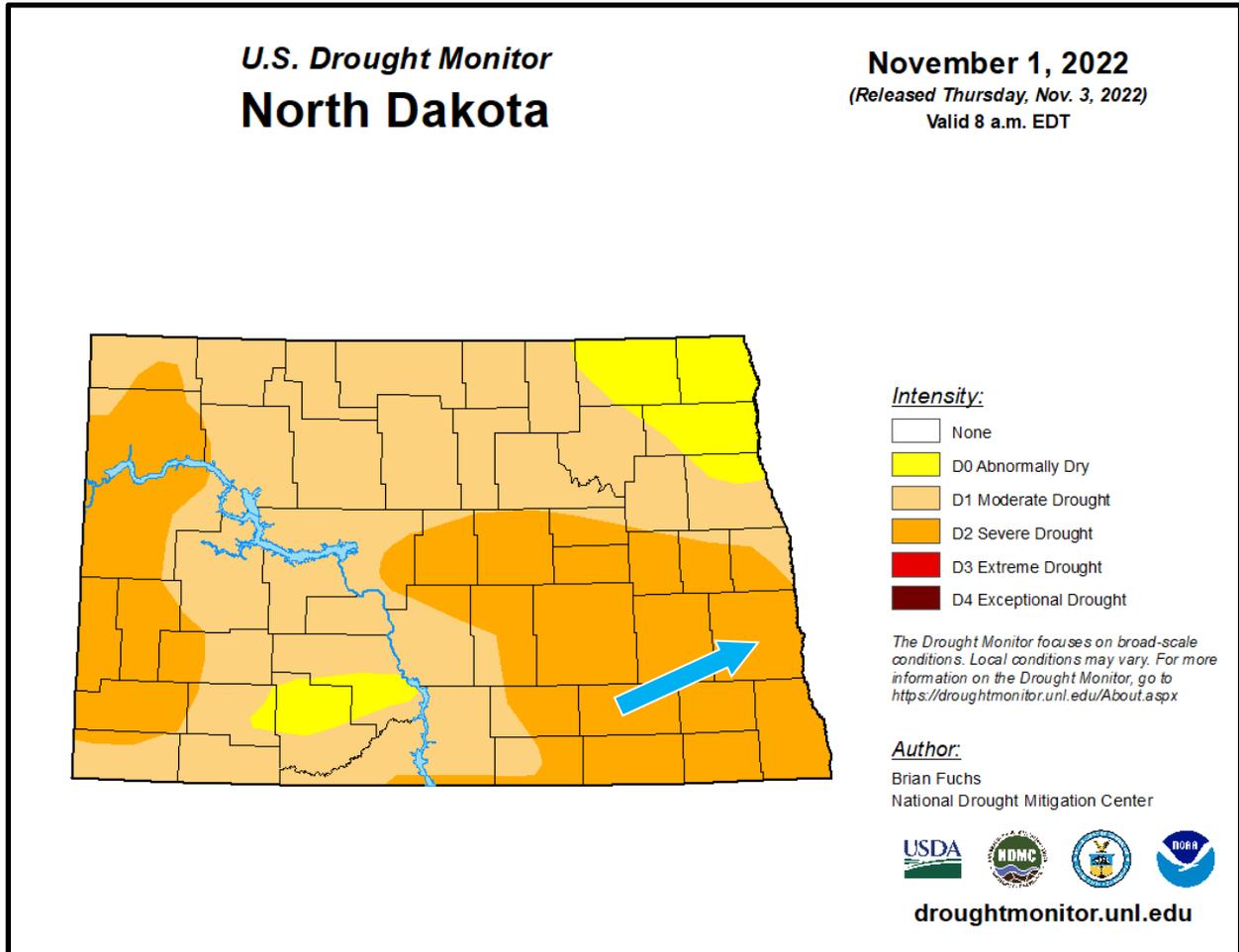
Produced by:
 Western Plains, Consulting, Inc.
 1102 S Washington St, Ste 210
 Bismarck, ND 58504
 Date Created: January 4, 2023
 Datum: WGS 1984
 Projection: State Plane North Dakota S FIPS 3302 (US feet)
 Scale: 1:5,510
 This map has been compiled from various State and Federal electronic sources for visual purposes only. No warranties, expressed or implied, accompany this map.
 Service Layer Credits: Copyright: @USDA Maxar

These data delineate the areal extent of wetlands and surface waters as defined by Corvardin (1979). The National Wetlands Inventory - Version 2, Surface Waters and Wetland Inventory was derived by retaining the wetland and deepwater polygons and compose the NWI digital wetlands spatial data layer and reintroducing any linear wetland or surface water features that were orphaned from the original NWI hard copy maps by converting them to narrow polygonal features. The NWI is a product of the U.S. Fish and Wildlife Service.

Wetland 3
 Wetland 2B
 Wetland 2A
 Wetland 2
 Wetland 1B
 Wetland 1A
 Non-Wetland 3
 Non-Wetland 2
 Non-Wetland 1
 Casselton Robert Miller Regional Airport
 105 1/2 Ave SE
 W-2
 W-1
 Upl-2
 Upl-1
 Upl-3
 WPC Survey Point
 WPC Wetlands
 Survey Area
 Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc., MET/NASA, USGS, EPA, NPS, US Census Bureau, USDA, Maxar

Appendix B

The U.S. Drought Monitor information below is self-explanatory. The map was found on Web page <https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?ND>. The blue arrow points to the survey area.



The U.S. Drought Monitor information below lists data for Cass County, ND. The data table was found on Web page <https://droughtmonitor.unl.edu/DmData/DataTables.aspx>.

U.S. Drought Monitor

Current Map | Maps | **Data** | Summary | About | Conditions & Outlooks | En Español | NADM

Data Tables Home > Data > Data Tables

The values in this table are for places represented as areas. To see the drought status of areas represented by points, please visit [this page](#).

Area type: County | Area: Cass County (ND) | Statistics type: Cumulative Percent Area

USDM 7-day Change

Percent Area in U.S. Drought Monitor Categories

Show 25 rows | Copy | CSV | Excel | PDF | Print | Search:

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4	DSCI
2022-12-13	0.00	100.00	100.00	100.00	0.00	0.00	300
2022-12-06	0.00	100.00	100.00	100.00	0.00	0.00	300
2022-11-29	0.00	100.00	100.00	100.00	0.00	0.00	300
2022-11-22	0.00	100.00	100.00	100.00	0.00	0.00	300
2022-11-15	0.00	100.00	100.00	100.00	0.00	0.00	300
2022-11-08	0.00	100.00	100.00	100.00	0.00	0.00	300
2022-11-01	0.00	100.00	100.00	100.00	0.00	0.00	300
2022-10-25	0.00	100.00	100.00	0.00	0.00	0.00	200
2022-10-18	0.00	100.00	100.00	0.00	0.00	0.00	200
2022-10-11	0.00	100.00	86.82	0.00	0.00	0.00	187
2022-10-04	0.00	100.00	0.62	0.00	0.00	0.00	101
2022-09-27	0.00	100.00	0.00	0.00	0.00	0.00	100
2022-09-20	14.66	85.34	0.00	0.00	0.00	0.00	85
2022-09-13	96.82	3.18	0.00	0.00	0.00	0.00	3

This screen capture only shows data from 9/13/2022 through 12/13/2022. The percentage of the area in Cass County, ND in category D2 (severe drought) was listed as 100 percent from around the survey date on 11/1/2022 through 12/13/2022. The drought conditions in the month prior to the survey were only within the abnormally dry or moderate drought conditions, showing a downward trend.

Category	Description	Possible Impacts	Ranges					Objective Drought Indicator Blends (Percentiles)
			Palmer Drought Severity Index (PDSI)	CPC Soil Moisture Model (Percentiles)	USGS Weekly Streamflow (Percentiles)	Standardized Precipitation Index (SPI)		
D0	Abnormally Dry	<p>Going into drought:</p> <ul style="list-style-type: none"> short-term dryness slowing planting, growth of crops or pastures <p>Coming out of drought:</p> <ul style="list-style-type: none"> some lingering water deficits pastures or crops not fully recovered 	-1.0 to -1.9	21 to 30	21 to 30	-0.5 to -0.7	21 to 30	
D1	Moderate Drought	<ul style="list-style-type: none"> Some damage to crops, pastures Streams, reservoirs, or wells low, some water shortages developing or imminent Voluntary water-use restrictions requested 	-2.0 to -2.9	11 to 20	11 to 20	-0.8 to -1.2	11 to 20	
2	Severe Drought	<ul style="list-style-type: none"> Crop or pasture losses likely Water shortages common Water restrictions imposed 	-3.0 to -3.9	6 to 10	6 to 10	-1.3 to -1.5	6 to 10	
D3	Extreme Drought	<ul style="list-style-type: none"> Major crop/pasture losses Widespread water shortages or restrictions 	-4.0 to -4.9	3 to 5	3 to 5	-1.6 to -1.9	3 to 5	
D4	Exceptional Drought	<ul style="list-style-type: none"> Exceptional and widespread crop/pasture losses Shortages of water in reservoirs, streams, and wells creating water emergencies 	-5.0 or less	0 to 2	0 to 2	-2.0 or less	0 to 2	

Appendix C



Photo 1. Non-Wetland 1 Point. Survey point for Non-Wetland Point 1 was located in the foreground of the photo near the edge of the tilled farmland on the mowed airport property. November 2, 2022 view northwest.

Photo 2. Upland 1 Point. View of the soils for the Upland point (Upl-1) for Wetland 1. The soil had salts present in the upper layer where mixing was present. The lighter layer present had a high value and chroma which characterized it as an upland soil. November 2, 2022.





Photo 3 at left. Wetland 1 Point. View of Wetland 1B toward the culvert that connects to Wetland 1A. Near the clipboard in the foreground was the Wetland Point (W-1) for Wetland 1. The presence of Rushes (*Juncus sp.*), which are commonly a wetland plant species, and a hydric soil made the classification of a wetland. November 2, 2022 view northwest.



Photo 4 at right. Wetland 1A. View of Wetland 1A which had the same characteristics as Wetland 1B and was connected by the culvert under the airport taxiway. November 2, 2022 view southeast.



Photo 5 at left. View of Wetland 2A . Wetland 2A was mowed and was located between the airport runway and taxiway. November 2, 2022 view southeast.



Photo 6 at left. Wetland 2 Point (W-2). View of where the survey point in foreground for Wetland 2 was located. Wetland 2 consisted of Rushes (*Juncus sp.*), Common Knotweed (*Polygonum arenastrum*), and Western Wheatgrass (*Pascopyrum smithii*). Hydric soils were also present indicating the wetland status for this area. November 2, 2022 view southeast.

Photo 7 at right. Upland 2 Point (Upl-2). The upland point for Wetland 2 was dominated by upland grasses and hydric soils were not present. November 2, 2022



Photo 8 at left. View of Wetland 2B. Wetland 2B was connected to Wetland 2A by a culvert located in the background (red arrow) that goes underneath the taxiway. November 2, 2022 view northwest.



Photo 9 at left. Non-Wetland 2 Point was located to the southwest of Wetland 2B to the southwest of the taxi-way. The soils in this area were not hydric because of the high value and chroma that was present in the B horizon. November 2, 2022.

Photo 10 at right. View of Non-Wetland 2. November 2, 2022 view southeast.

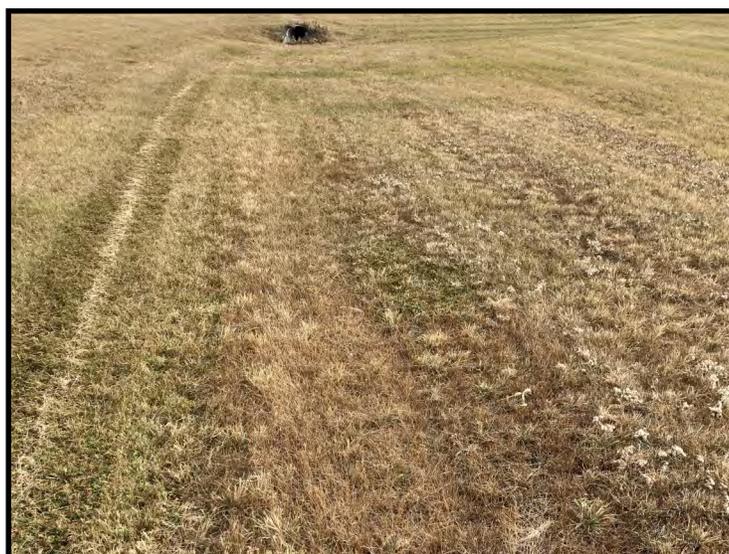


Photo 11 at left. Brightly colored soils mentioned in photo 9. Presence of the lightly colored soils indicate there was no wetland present. November 2, 2022



Photo 12 at left. Non-Wetland 3 Point. November 2, 2022. Soils from Non-Wetland 3 survey that were similar to the soils shown in photo 11. The Value and Chroma of the soils had too high of a value to be characterized as a hydric soil.

Photo 13 at right. Non-Wetland 3 point view. Area from where the survey in photo 12 was taken. Rushes (*Juncus sp.*), were present but the lack of hydric soils and strong hydrology indicated that a wetland was not present. November 2, 2022 view northwest.



Photo 14 at left. Wetland 3 point (W-3) November 2, 2022 view southwest. Wetland 3 sampling point was located near the equipment in the middle of the photo. Water appeared to have been ponding in this area after moving through the culvert in the background of the photo. Wetland vegetation, soils, and hydrology were present here.



Photo 15 at left. Upland 3 Point (Upl-3). Upland 3 point was dominated by upland grasses such as Kentucky Bluegrass (*Poa pratensis*) and Common Dandelion (*Taraxacum officinale*). Hydrology and hydric soils were not present. November 2, 2022.

Photo 16 at right. Wetland 4 Point (W-4). November 3, 2022. View of the hydric soils that were present for the Wetland 4 area.



Photo 17 at left. Stand of Cattails (*Typha sp.*) present within Wetland 4A. November 3, 2022 view southeast.



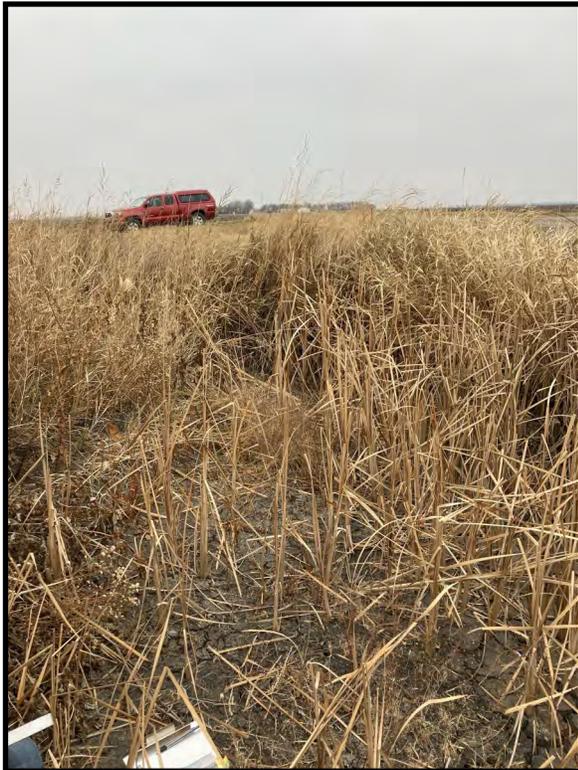


Photo 18 at left. Another view of the stand of cattails within Wetland 4A. November 3, 2022 view north.

Photo 19 at right. Upland 4 Point (Upl-4) location for the Wetland 4 area. November 3, 2022 view southeast.



Photo 20 at left. Wetland 4B on the south side of the gravel road ditch and to the north of a farm field. The geomorphology of the ditch seemed to allow ponding and water collection. November 3, 2022 view east.



Photo 21 at left. Wetland 4D had some crop remnants within most of the wetland, but the soils and hydrology of the area classified it as a wetland. November 3, 2022 view west.

Photo 22 at right. Culvert on the edge of Wetland 4E connecting it to Wetland 4D. The stand of undisturbed grass at this point consisted of Reed canary grass (*Phalaris arundinacea*) and Prairie Cordgrass (*Spartina pectinata*). Both of these grass species are wetland indicators. November 3, 2022 view south-east.



Photo 23 at left. View of Wetland 4E. This area also had an abundant amount of crop remnants within the ditch. November 3, 2022 view west.



Photo 24 at left. Wetland 4E Point. This was an additional survey point to confirm that the ditches on both sides of the road have hydric soils present. November 3, 2022.

Photo 25 at right. Wetland 4H. A dense stand of Cattails (*Typha sp.*) and Prairie Cordgrass (*Spartina pectinata*) November 3, 2022 view northwest.



Photo 26 at left. Wetland 4H. Curled Dock (*Rumex crispus*) within the same wetland area in photo 25. November 3, 2022 view southeast.





Photo 27 at left. Wetland 4H. Closer view of some Curled Dock (*Rumex crispus*) which has a facultative wetland indicator status. November 3, 2022 view west.

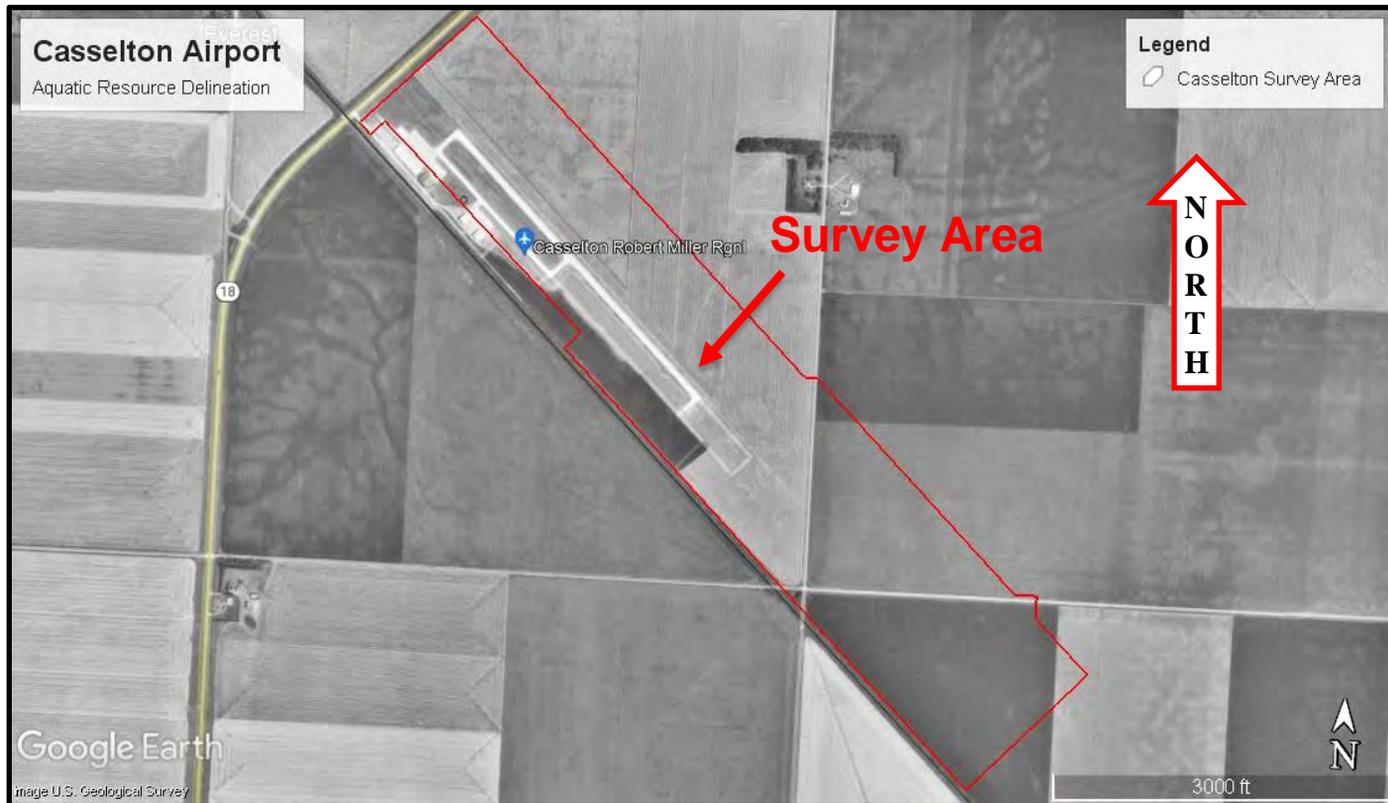
Photo 28 at right. View of Wetland 4H directly northeast of the railroad tracks (off-Site). November 3, 2022 view northwest.



Photo 29 at left. Water present within Wetland 4H. November 3, 2022

Appendix C. Aerial Photographs

1990



The Survey Area was portions of Section 14, portions of the SW Quarter of Section 13, portions of the NE Quarter of the NE Quarter of Section 23, and portions of the NW Quarter of Section 24, T.139N., R. 52W. Part of the Survey Area in Section 14 was already developed as the Casselton Airport. The rest of the survey area appears to be used for agricultural purposes. There were developed roads along the section lines. There appears to be some possible wetlands between the runway and taxiway nearest to the developed buildings. There also appears to be some indications of a wetland around the intersection of the roads developed in the survey area.

Cass County, North Dakota
Google Earth Image



Appendix C. Aerial Photographs

1997



Part of the Survey Area in Section 14 was already developed as the Casselton Airport. The airport appeared to have lengthened the runway and taxiway from the 1990 aerial photograph. The rest of the survey area appears to be used for agricultural purposes. There were developed roads along the section lines. There appears to be some indications of a wetland around the intersection of the roads developed in the survey area.

Cass County, North Dakota
Google Earth Image



Appendix C. Aerial Photographs

2003



Part of the Survey Area in Section 14 was already developed as the Casselton Airport. The rest of the survey area appears to be used for agricultural purposes. There were developed roads along the section lines. There seems to be indication of wetlands between the airport runways and taxiways.

Cass County, North Dakota
Google Earth Image



Appendix C. Aerial Photographs

2009



Part of the Survey Area in Section 14 was already developed as the Casselton Airport. The rest of the survey area appears to be used for agricultural purposes. There were developed roads along the section lines. There seems to be indication of wetlands between the airport runways and taxiways. There appears to be increased hydrology between the railroad south of the survey area and the agricultural fields that were adjacent.

Cass County, North Dakota
Google Earth Image



Appendix C. Aerial Photographs

2010



Part of the Survey Area in Section 14 was already developed as the Casselton Airport. The rest of the survey area appears to be used for agricultural purposes.

There were developed roads along the section lines. The area between the runway and taxiway appears to have multiple areas where wetlands may be present.

Cass County, North Dakota
Google Earth Image



Appendix C. Aerial Photographs 2016



Part of the Survey Area in Section 14 was already developed as the Casselton Airport. The rest of the survey area appears to be used for agricultural purposes.

There were developed roads along the section lines. The area between the runway and taxiway appears to have multiple areas where wetlands may be present, although it was less apparent than the 2010 aerial photograph.

Cass County, North Dakota
Google Earth Image



Appendix C. Aerial Photographs

2021



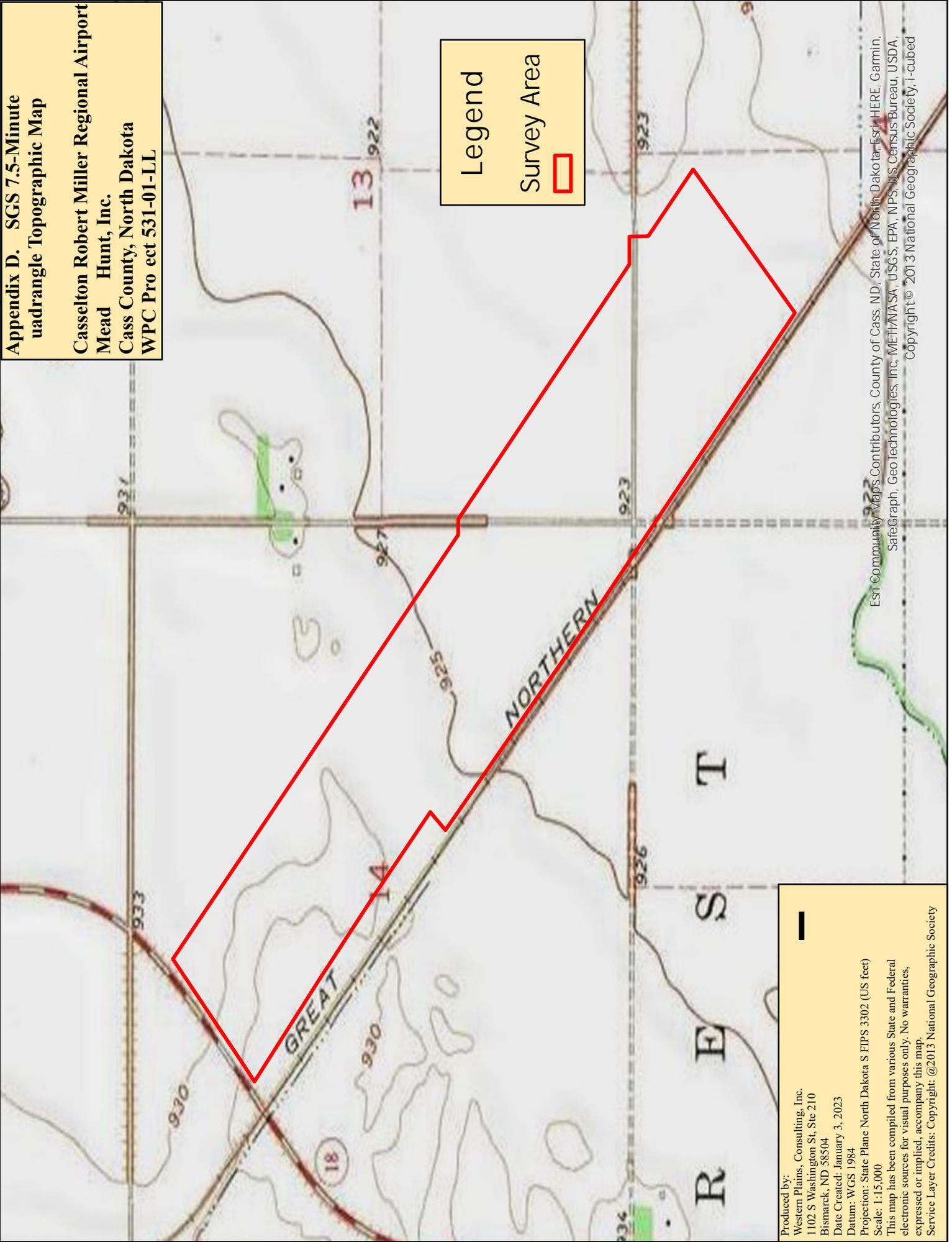
Part of the Survey Area in Section 14 was already developed as the Casselton Airport. The rest of the survey area appears to be used for agricultural purposes. There were developed roads along the section lines. Some small possible wetland areas can be noted between the runway and taxiway of the airport. There also seems to be some possible wetlands at the intersection of the developed roads in the survey area.

Cass County, North Dakota
Google Earth Image



Appendix D

**Appendix D. SGS 7.5-Minute
quadrangle Topographic Map**
**Casselton Robert Miller Regional Airport
Mead Hunt, Inc.
Cass County, North Dakota
WPC Project 531-01-LL**



Legend
Survey Area 

Produced by:
Western Plains, Consulting, Inc.
1102 S Washington St, Ste 210
Bismarck, ND 58504
Date Created: January 3, 2023
Datum: WGS 1984
Projection: State Plane North Dakota S FIPS 3302 (US feet)
Scale: 1:15,000
This map has been compiled from various State and Federal electronic sources for visual purposes only. No warranties, expressed or implied, accompany this map.
Service Layer Credits: Copyright: @2013 National Geographic Society

Esri Community Maps Contributors, County of Cass, ND, State of North Dakota, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, MET/NASA, USGS, EPA, NPS, US Census Bureau, USDA, Copyright © 2013 National Geographic Society, i-cubed

Appendix D. National Wetland Inventory Map
Casselton Robert Miller Regional Airport
Mead Hunt, Inc.
Cass, North Dakota
WPC Project 531-01-LL



Legend

- NWI Wetlands
- Survey Area

Produced by:
 Western Plains, Consulting, Inc.
 1102 S Washington St, Ste 210
 Bismarck, ND 58504
 Date Created: January 3, 2023
 Datum: WGS 1984
 Projection: State Plane North Dakota S FIPS 3302 (US feet)
 Scale: 1:11,000
 This map has been compiled from various State and Federal electronic sources for visual purposes only. No warranties, expressed or implied, accompany this map.
 Service Layer Credits: Copyright: @USDA, Maxar

These data delineate the areal extent of wetlands and surface waters as defined by Conrardin et al. (1979). The National Wetlands Inventory - Version 2, Surface Waters and Wetland Inventory was derived by retaining the wetland and deepwater polygons and composing the NWI digital wetlands spatial data layer and reintroducing any linear wetland or surface water features that were orphaned from the original NWI hard copy maps by converting them to narrow polygonal features. The NWI is a product of the U.S. Fish and Wildlife Service.

Esri Community Maps Contributors, County of Cass, ND, State of North Dakota, Esri, HERE, Garmin, SafeGraph, Geotechnologies, Inc., METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, Maxar

Appendix D. NWI Map
NWI Features Overlay on WPC-Mapped
Aquatic Resource Delineations

Casselton Robert Miller Regional Airport
Mead Hunt, Inc.
Cass County, North Dakota
WPC Project 531-01-LL



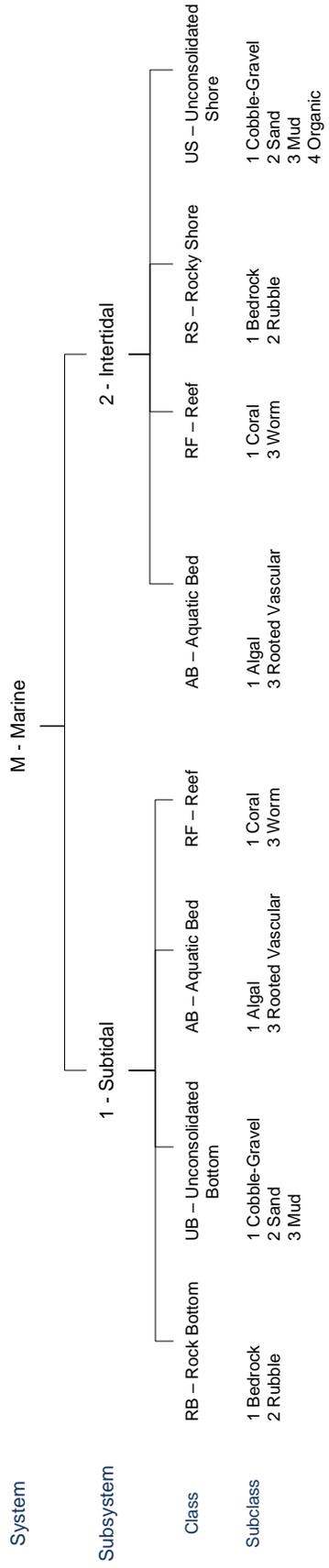
Legend

- + WPC Survey Point
- WPC Wetlands
- Survey Area
- NWI Wetlands

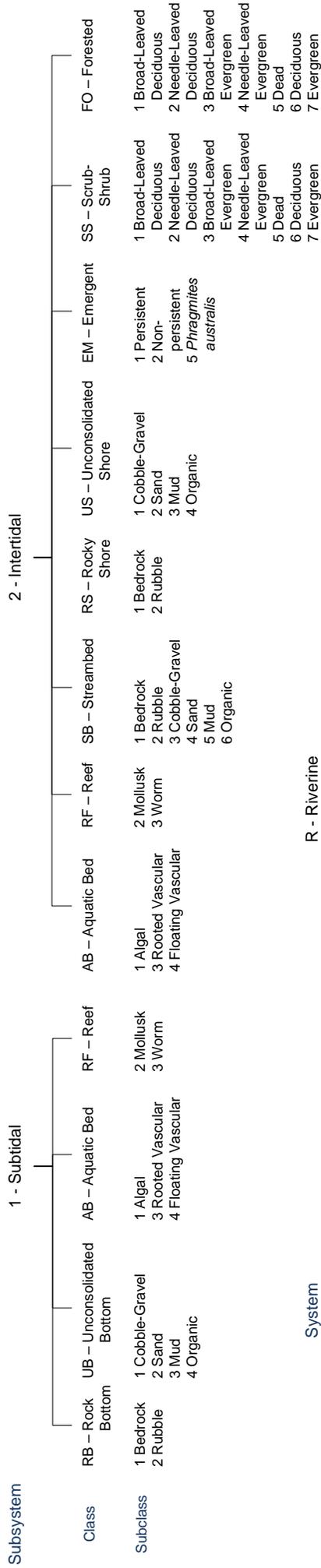
Produced by:
 Western Plains, Consulting, Inc.
 1102 S Washington St, Ste 210
 Bismarck, ND 58504
 Date Created: January 4, 2023
 Datum: WGS 1984
 Projection: State Plane North Dakota S FIPS 3302 (US feet)
 Scale: 1:5,510
 This map has been compiled from various State and Federal electronic sources for visual purposes only. No warranties, expressed or implied, accompany this map.
 Service Layer Credits: Copyright: @USDA Maxar

These data delineate the areal extent of wetlands and surface waters as defined by Corwardin (1979). The National Wetlands Inventory - Version 2, Surface Waters and Wetland Inventory was derived by retaining the wetland and deepwater polygons and compose the NWI digital wetlands spatial data layer and reintroducing any linear wetland or surface water features that were obtained from the original NWI hard copy maps by converting them to narrow polygonal features. The NWI is a product of the U.S. Fish and Wildlife Service.

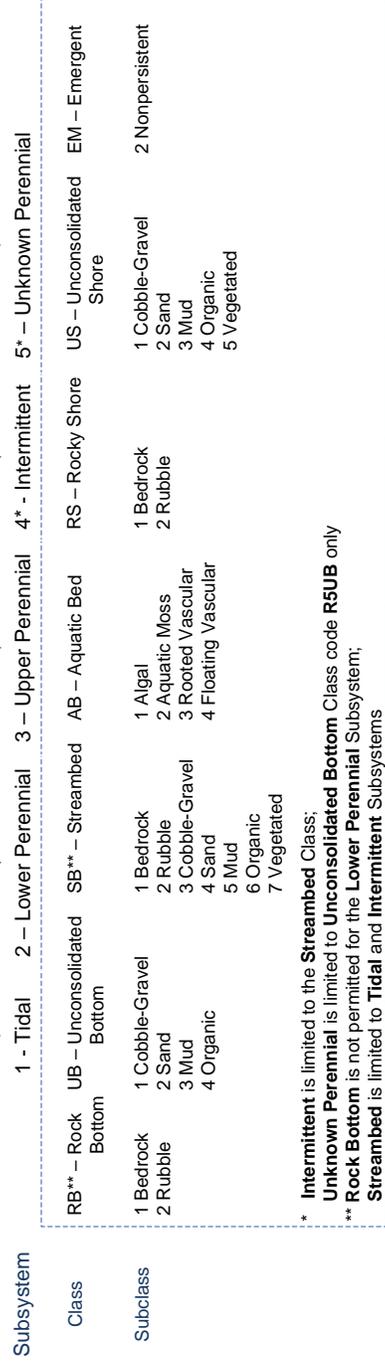
Esri, Community Maps Contributors, County of Cass, ND, State of North Dakota, © OpenStreetMap, MET/NASA, USGS, EPA, NPS, US Census Bureau, USDA, Maxar



E - Estuarine



R - Riverine



* Intermittent is limited to the Streambed Class;
 Unknown Perennial is limited to Unconsolidated Bottom Class code R5UB only
 ** Rock Bottom is not permitted for the Lower Perennial Subsystem;
 Streambed is limited to Tidal and Intermittent Subsystems

WETLANDS AND DEEPWATER HABITATS CLASSIFICATION

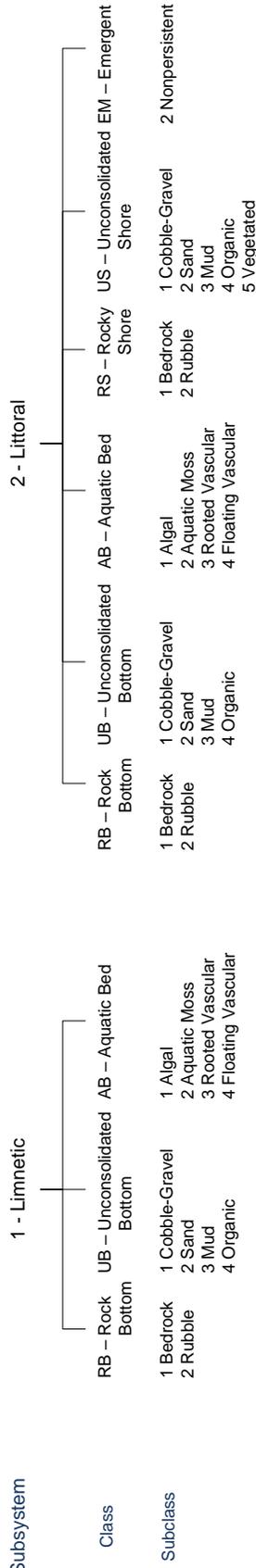
System

L - Lacustrine

Subsystem

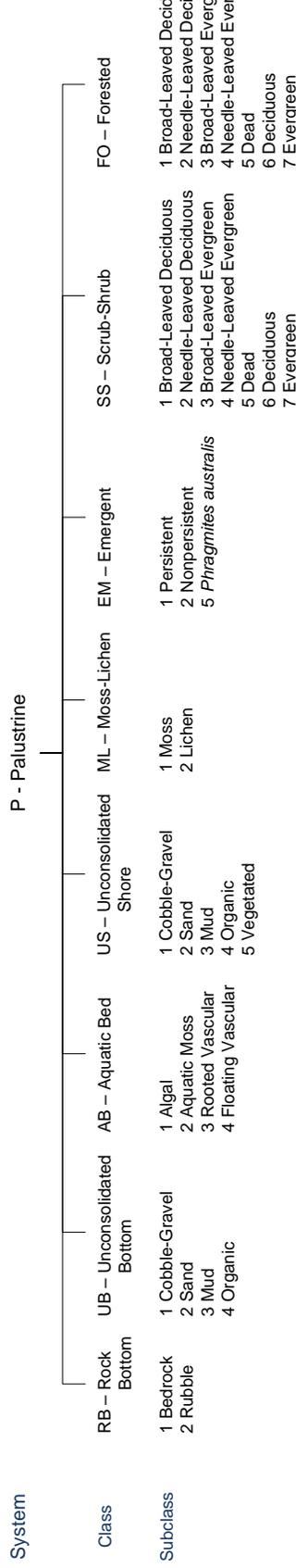
1 - Littoral

2 - Littoral



System

P - Palustrine

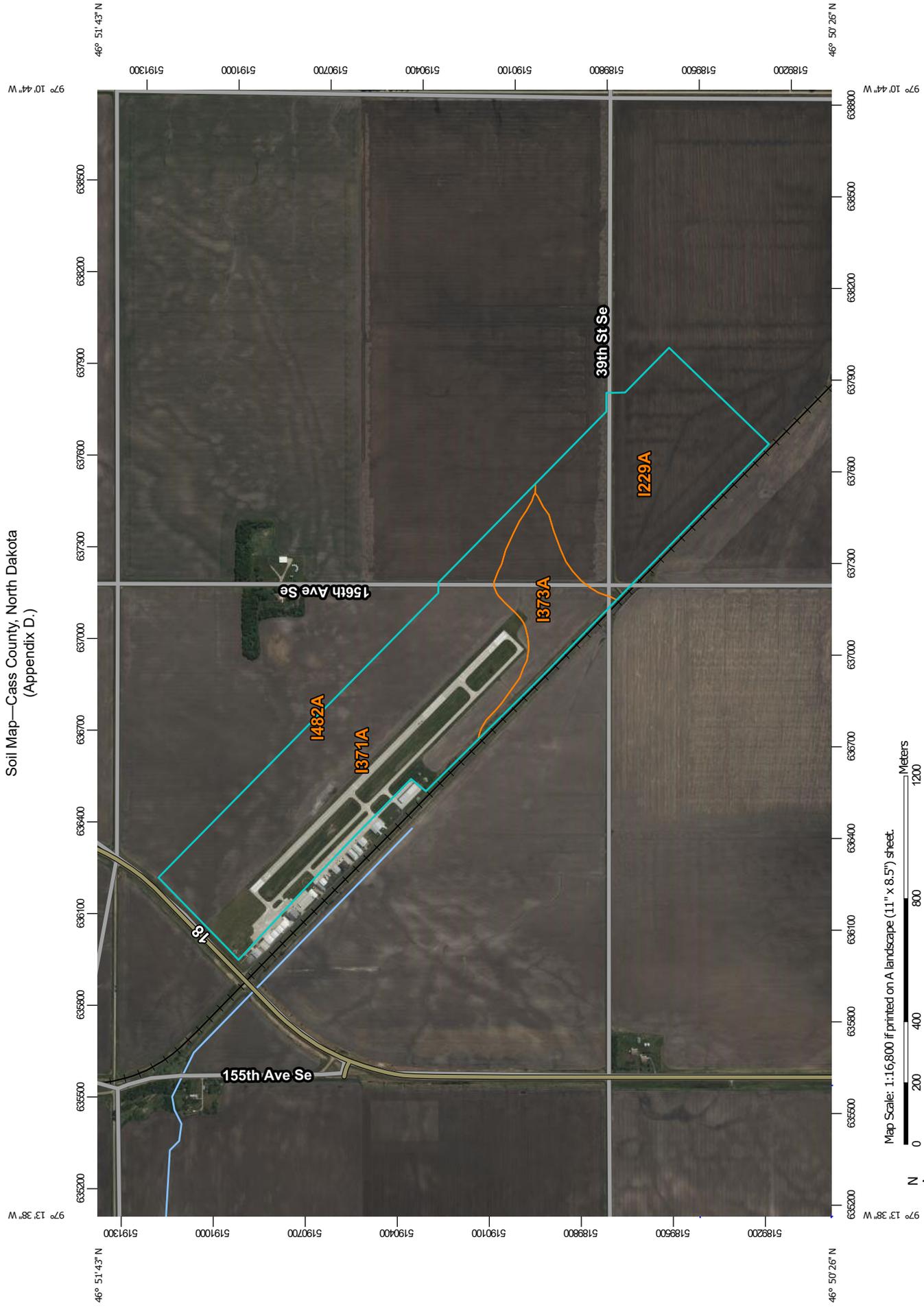


MODIFIERS

In order to more adequately describe the wetland and deepwater habitats, one or more of the water regime, water chemistry, soil, or special modifiers may be applied at the class or lower level in the hierarchy. The farmed modifier may also be applied to the ecological system.

	Water Regime		Special Modifiers	Water Chemistry		Soil
	Saltwater Tidal	Freshwater Tidal		Coastal Halinity	Inland Salinity	
A	Temporarily Flooded	L Subtidal	b Beaver	1 Hyperhaline	7 Hypersaline	g Organic
B	Saturated	M Irregularly Exposed	d Partly Drained/Ditched	2 Euhaline	8 Eusaline	n Mineral
C	Seasonally Flooded	N Regularly Flooded	f Farmed	3 Mixohaline (Brackish)	9 Mixosaline	t Circumneutral
E	Seasonally Flooded/Saturated	P Irregularly Flooded	h Diked/Impounded	4 Polyhaline	0 Fresh	i Alkaline
F	Semi-permanently Flooded	V Permanently Flooded-Tidal	r Artificial	5 Mesohaline		
G	Intermittently Exposed		s Spoil	6 Oligohaline		
H	Permanently Flooded		x Excavated	0 Fresh		
J	Intermittently Flooded					
K	Artificially Flooded					

Soil Map—Cass County, North Dakota
(Appendix D.)



Map Scale: 1:16,800 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84



MAP LEGEND

 Area of Interest (AOI)	 Spoil Area
 Soils	 Stony Spot
 Soil Map Unit Polygons	 Very Stony Spot
 Soil Map Unit Lines	 Wet Spot
 Soil Map Unit Points	 Other
 Special Point Features	 Special Line Features
 Blowout	Water Features
 Borrow Pit	 Streams and Canals
 Clay Spot	Transportation
 Closed Depression	 Rails
 Gravel Pit	 Interstate Highways
 Gravelly Spot	 US Routes
 Landfill	 Major Roads
 Lava Flow	 Local Roads
 Marsh or swamp	Background
 Mine or Quarry	 Aerial Photography
 Miscellaneous Water	
 Perennial Water	
 Rock Outcrop	
 Saline Spot	
 Sandy Spot	
 Severely Eroded Spot	
 Sinkhole	
 Slide or Slip	
 Sodic Spot	

MAP INFORMATION

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

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

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

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

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

Soil Survey Area: Cass County, North Dakota
Survey Area Data: Version 22, Sep 8, 2022

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

Date(s) aerial images were photographed: May 24, 2021—Jun 12, 2021

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
I229A	Fargo silty clay, 0 to 1 percent slopes	80.1	31.9%
I371A	Bearden-Kindred silty clay loams, 0 to 2 percent slopes	142.1	56.6%
I373A	Kindred-Bearden silty clay loams, 0 to 2 percent slopes	28.8	11.5%
I482A	Overly-Bearden silt loams, 0 to 2 percent slopes	0.1	0.0%
Totals for Area of Interest		251.1	100.0%

Report—Hydric Soil List - All Components

Hydric Soil List - All Components—ND017-Cass County, North Dakota					
Map symbol and map unit name	Component/Local Phase	Comp. pct.	Landform	Hydric status	Hydric criteria met (code)
I229A: Fargo silty clay, 0 to 1 percent slopes	Fargo	80	Flats	Yes	2,3
	Hegne	10	Flats	Yes	2,3
	Dovray	7	Drainageways	Yes	2,3
	Ryan	3	Flats	Yes	2,3
I371A: Bearden-Kindred silty clay loams, 0 to 2 percent slopes	Bearden	40	Flats	No	—
	Kindred	35	Flats	No	—
	Bearden-Slightly saline	10	Flats	No	—
	Perella	10	Depressions	Yes	2
	Colvin	5	Depressions	Yes	2
I373A: Kindred-Bearden silty clay loams, 0 to 2 percent slopes	Kindred	50	Flats	No	—
	Bearden	30	Flats	No	—
	Perella	10	Depressions	Yes	2
	Bearden-Moderately saline	5	Flats	No	—
	Overly	5	Flats	No	—
I482A: Overly-Bearden silt loams, 0 to 2 percent slopes	Overly	45	Flats	No	—
	Bearden	30	Flats	No	—
	Perella	10	Depressions	Yes	2
	Kindred	10	Flats	No	—
	Bearden-Moderately saline	5	Flats	No	—

Data Source Information

Soil Survey Area: Cass County, North Dakota

Survey Area Data: Version 22, Sep 8, 2022

Appendix E

APPENDIX E. WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Casselton Robert Miller Regional Airport City: Casselton County: Cass Sampling Date: 11/2/2022
 Applicant/Owner: Mead & Hunt, Inc. State: N.Dakota Sampling Point/Wetland ID: W-1
 Investigator(s): Lance Loken, Lawrence Mettler Section, Township, Range: SE Qtr - NW Qtr Sec. 14 T.139N R.52W
 Landform (hillslope, terrace, etc.): Plain Local Relief (concave, convex, none): concave Slope % 0-3%
 Subregion (LRR): F Lat: 46.856787 Long: -97.213146 Datum: WGS 84
 Soil Map Unit Name: Bearden-Kindred silty clay loams, 0 to 2 percent slopes NWI Classification: (see Remarks)

Are climatic / hydrologic conditions in and around the site typical for this time of year? No

Are Vegetation No ; Soil No ; or Hydrology No significantly disturbed? Are "Normal Circumstances" present? No
 Are Vegetation No ; Soil No ; or Hydrology No 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Site was in severe drought conditions according to the U.S Drought Monitor. Sample Point was taken inside of Wetland 1B which was near the north end of the runway between the runway and taxiway. The NWI did not have this wetland in the database. However, the wetland was classified as a Freshwater emergent wetland (PEM1C) in the field.	

VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
(Plot size: <u> </u>)				Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC -): <u>1</u> (A)
1. <u> </u>				Total Number of Dominant Species across all Strata: <u>2</u> (B)
2. <u> </u>				
3. <u> </u>				
4. <u> </u>				
= Total Cover				
Sapling/Shrub Stratum (Plot size: <u> </u>)				Percent of Dominant Species that are OBL, FACW, or FAC: <u>50%</u> (A/B)
1. <u> </u>				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0%</u> x 1 <u>0</u> FACW species <u>75%</u> x 2 <u>1.5</u> FAC species <u>0%</u> x 3 <u>0</u> FACU species <u>20%</u> x 4 <u>0.8</u> UPL species <u> </u> x 5 <u> </u> Column Totals: <u>0.95</u> (A) <u>2.3</u> (B) Prevalence Index = B/A = <u>2.42</u>
2. <u> </u>				
3. <u> </u>				
4. <u> </u>				
5. <u> </u>				
= Total Cover				
Herb Stratum (Plot size: <u>5' radius</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation Meets 2 - Dominance Test is > 50% 3 - Prevalence Index is ≤ 3.0 * Meets 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet). Problematic Hydrophytic Vegetation* (Explain)
1. <u>Kentucky Blue Grass(Poa pratensis)</u>	<u>20%</u>	<u>No</u>	<u>FACU</u>	
2. <u>Juncus sp.</u>	<u>75%</u>	<u>Yes</u>	<u>FACW</u>	
3. <u> </u>				
4. <u> </u>				
5. <u> </u>				
6. <u> </u>				
7. <u> </u>				
8. <u> </u>				
9. <u> </u>				
10. <u> </u>				
95% = Total Cover				
Woody Vine Stratum (Plot size: <u> </u>)				* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u> </u>				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
2. <u> </u>				
100% = Total Cover				
% Bare Ground in Herb Stratum <u>5%</u>				

Remarks: Hydric vegetation was present in the area of the sample. The area was mowed because it was part of the airport property.

APPENDIX E. WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Casselton Robert Miller Regional Airport City: Casselton County: Cass Sampling Date: 11/2/2022
 Applicant/Owner: Mead & Hunt, Inc. State: N.Dakota Sampling Point/Wetland ID: UPL-1
 Investigator(s): Lance Loken, Lawrence Mettler Section, Township, Range: SE Qtr - NW Qtr Sec. 14 T.139N R.52W
 Landform (hillslope, terrace, etc.): Plain Local Relief (concave, convex, none): none Slope % 0-3%
 Subregion (LRR): F Lat: 46.856763 Long: 97.213171 Datum: WGS 84
 Soil Map Unit Name: Bearden-Kindred silty clay loams, 0 to 2 percent slopes NWI Classification: _____

Are climatic / hydrologic conditions in and around the site typical for this time of year? No

Are Vegetation No ; Soil No ; or Hydrology No significantly disturbed? Are "Normal Circumstances" present? No
 Are Vegetation No ; Soil No ; or Hydrology No 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 <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: Site was in severe drought conditions according to the U.S Drought Monitor. Sample Point was taken outside of Wetland 1B which was near the north end of the runway between the runway and taxiway.	

VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
(Plot size: _____)				Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC -): <u>0</u> (A)
1. _____				Total Number of Dominant Species across all Strata: <u>2</u> (B)
2. _____				
3. _____				
4. _____				
= Total Cover				
Sapling/Shrub Stratum				Percent of Dominant Species that are OBL, FACW, or FAC: <u>0%</u> (A/B)
(Plot size: _____)				
1. _____				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0%</u> x 1 <u>0</u> FACW species <u>3%</u> x 2 <u>0.06</u> FAC species <u>0%</u> x 3 <u>0</u> FACU species <u>60%</u> x 4 <u>2.4</u> UPL species _____ x 5 _____ Column Totals: <u>0.63</u> (A) <u>2.46</u> (B) Prevalence Index = B/A = <u>3.90</u>
2. _____				
3. _____				
4. _____				
5. _____				
= Total Cover				
Herb Stratum				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is > 50% _____ 3 - Prevalence Index is ≤ 3.0 * _____ 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet). _____ Problematic Hydrophytic Vegetation* (Explain) _____ * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
(Plot size: <u>5' radius</u>)				
1. <u>Kentucky Blue Grass(Poa pratensis)</u>	<u>60%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Smooth Brome (Bromus inermis)</u>	<u>40%</u>	<u>Yes</u>	<u>UPL</u>	
3. <u>Hordeum jubatum(Fox-Tail Barley)</u>	<u>3%</u>	<u>No</u>	<u>FACW</u>	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
103% = Total Cover				
Woody Vine Stratum				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
(Plot size: _____)				
1. _____				
2. _____				
= Total Cover				
% Bare Ground in Herb Stratum	<u>5%</u>			
Remarks: Hydric vegetation was not present in the area of the sample. The area was mowed because it was a part of the airport, but was dominated by upland grasses.				

APPENDIX E. WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Casselton Robert Miller Regional Airport City: Casselton County: Cass Sampling Date: 11/2/2022
 Applicant/Owner: Mead & Hunt, Inc. State: N.Dakota Sampling Point/Wetland ID: W-2
 Investigator(s): Lance Loken, Lawrence Mettler Section, Township, Range: SW Qtr - NE Qtr Sec. 14 T.139N R.52W
 Landform (hillslope, terrace, etc.): Plain Local Relief (concave, convex, none): concave Slope % 0-3%
 Subregion (LRR): F Lat: 46.85523 Long: -97.210456 Datum: WGS 84
 Soil Map Unit Name: Bearden-Kindred silty clay loams, 0 to 2 percent slopes NWI Classification: (see Remarks)
 Are climatic / hydrologic conditions in and around the site typical for this time of year? No
 Are Vegetation No ; Soil No ; or Hydrology No significantly disturbed? Are "Normal Circumstances" present? No
 Are Vegetation No ; Soil No ; or Hydrology No 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Site was in severe drought conditions according to the U.S Drought Monitor. Sample Point was taken inside of Wetland 2A which was between the runway and taxiway. The NWI did have Wetland 2B in there database as a PEM1Cx. In the field it was also classified as a PEM1Cx wetland.	

VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
(Plot size: _____)				Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC -): <u>1</u> (A)
1. _____				Total Number of Dominant Species across all Strata: <u>2</u> (B)
2. _____				
3. _____				
4. _____				
= Total Cover				
Sapling/Shrub Stratum				Percent of Dominant Species that are OBL, FACW, or FAC: <u>50%</u> (A/B)
(Plot size: _____)				
1. _____				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0%</u> x 1 <u>0</u> FACW species <u>55%</u> x 2 <u>1.1</u> FAC species <u>0%</u> x 3 <u>0</u> FACU species <u>45%</u> x 4 <u>1.8</u> UPL species _____ x 5 _____ Column Totals: <u>1</u> (A) <u>2.9</u> (B) Prevalence Index = B/A = <u>2.90</u>
2. _____				
3. _____				
4. _____				
5. _____				
= Total Cover				
Herb Stratum				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 * <input checked="" type="checkbox"/> Meets 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet). <input type="checkbox"/> Problematic Hydrophytic Vegetation* (Explain) _____ * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
(Plot size: <u>5' radius</u>)				
1. <u>Juncus sp.</u>	<u>55%</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Polygonum arenastrum (Common Knotweed)</u>	<u>35%</u>	<u>Yes</u>	<u>FACU</u>	
3. <u>Western Wheatgrass (Pascopyrum smithii)</u>	<u>10%</u>	<u>No</u>	<u>FACU</u>	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
100% = Total Cover				
Woody Vine Stratum				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
(Plot size: _____)				
1. _____				
2. _____				
100% = Total Cover				
% Bare Ground in Herb Stratum				
Remarks: Hydric vegetation was present in the area of the sample. The area was mowed because it was part of the airport property.				

SOIL

Sampling Point/Wetland ID: W-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix			Redox Features				Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type*	Loc**		
0 - 6	2.5Y 2.5 / 1		90%	2.5Y 8 / 1	10%		M	CL	Salt Crystals
6 - 12	2.5Y 4 / 2		55%					CL	Mixed - construction activity
	2.5Y 2.5 / 1		45%					CL	remnants of past activity.
12 16+	2.5Y 4 / 2		55%	7.5YR 4 / 4	30%	C	M	SiCL	
				7.5YR 2.5 / 1	15%	C	M	SiCL	
-									
-									
-									

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils***:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside MLRA 72 & 73)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input checked="" type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)		
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)		

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

Restrictive Layer (if present):	Hydric Soil Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
Type: _____					
Depth (inches): _____					

Remarks: The soil appears to have been affected by the development present within the area. The soil did not clearly meet any of the established hydric soil indicators, but WPC is using "Other" as the hydric soil indicator. The 6 to 12 inch horizon shows evidence from apparent past construction mixing. The 12 to 16+ horizon with the 2 chroma and redox features does not meet any specific hydric soil indicator, but WPC considers this "Other" due to presence of hydrophytic vegetation and hydrology indicators, and WPC's opinion is that this soil is behaving as a wetland soil.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required: check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3)	(where not tilled)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
	<input checked="" type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
	(where tilled)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input checked="" type="checkbox"/> Geomorphic Position (D2)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)

Field Observations:	Wetland Hydrology Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____					
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____					
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____					
(includes capillary fringe)					

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

Remarks: Severe Drought was present as indicated in the U.S. Drought Monitor.

APPENDIX E. WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Casselton Robert Miller Regional Airport City: Casselton County: Cass Sampling Date: 11/2/2022
 Applicant/Owner: Mead & Hunt, Inc. State: N.Dakota Sampling Point/Wetland ID: UPL-2
 Investigator(s): Lance Loken, Lawrence Mettler Section, Township, Range: SW Qtr - NE Qtr Sec. 14 T.139N R.52W
 Landform (hillslope, terrace, etc.): Plain Local Relief (concave, convex, none): none Slope % 0-3%
 Subregion (LRR): F Lat: 46.855147 Long: -97.210559 Datum: WGS 84
 Soil Map Unit Name: Bearden-Kindred silty clay loams, 0 to 2 percent slopes NWI Classification: _____

Are climatic / hydrologic conditions in and around the site typical for this time of year? No

Are Vegetation No ; Soil No ; or Hydrology No significantly disturbed? Are "Normal Circumstances" present? No
 Are Vegetation No ; Soil No ; or Hydrology No 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 <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: Site was in severe drought conditions according to the U.S Drought Monitor. Sample Point was taken outside of Wetland 2A which was between the runway and taxiway.	

VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
(Plot size: _____)				Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC -): <u>0</u> (A)
1. _____				Total Number of Dominant Species across all Strata: <u>2</u> (B)
2. _____				
3. _____				
4. _____				
= Total Cover				
Sapling/Shrub Stratum				Percent of Dominant Species that are OBL, FACW, or FAC: <u>0%</u> (A/B)
(Plot size: _____)				
1. _____				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0%</u> x 1 <u>0</u> FACW species <u>0%</u> x 2 <u>0</u> FAC species <u>0%</u> x 3 <u>0</u> FACU species <u>60%</u> x 4 <u>2.4</u> UPL species _____ x 5 _____ Column Totals: <u>0.6</u> (A) <u>2.4</u> (B) Prevalence Index = B/A = <u>4.00</u>
2. _____				
3. _____				
4. _____				
5. _____				
= Total Cover				
Herb Stratum				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 * <input type="checkbox"/> 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet). <input type="checkbox"/> Problematic Hydrophytic Vegetation* (Explain) _____ * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
(Plot size: <u>5' radius</u>)				
1. <u>Kentucky Blue Grass(Poa pratensis)</u>	<u>50%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Smooth Brome (Bromus inermis)</u>	<u>50%</u>	<u>Yes</u>	<u>UPL</u>	
3. <u>Taraxacum officinale(Common Dandelion)</u>	<u>10%</u>	<u>No</u>	<u>FACU</u>	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
110% = Total Cover				
Woody Vine Stratum				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
(Plot size: _____)				
1. _____				
2. _____				
= Total Cover				
% Bare Ground in Herb Stratum				
Remarks: Hydric vegetation was not present in the area of the sample. The area was mowed because it was a part of the airport, but was dominated by upland grasses.				

SOIL

Sampling Point/Wetland ID: UPL-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type*	Loc**			
0 - 4	2.5Y 2.5 / 1	80%	2.5Y 8 / 1	20%		M	CL	Salt Crystals	
4 - 8	2.5Y 2.5 / 1	100%					CL		
8 - 12	2.5Y 2.5 / 1	55%	5YR 4 / 6	5%	C	M	SiCL	Redox was relic	
	2.5YR 4 / 2	40%							
12 - 16+	2.5Y 4 / 3	75%	5YR 4 / 4	25%	C	M	SiCL	Contemporary Redox	
-									
-									
-									

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils***:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside MLRA 72 & 73)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	*** Indicators of hydrophytic vegetations and wetland hydrology must be present, unless disturbed or problematic.	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)		

Restrictive Layer (if present):	Hydric Soil Present?	Yes	No	X
Type: _____				
Depth (inches): _____				

Remarks: Note 3 Chroma from 12 to 16 inches with redox features noted. The 3 chroma present means this was a non-wetland soil.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required: check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	(where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water Stained Leaves (B9)	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
(where not tilled)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:	Wetland Hydrology Present?	Yes	No	X
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
(includes capillary fringe)				

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

Remarks: Severe Drought was present as indicated in the U.S. Drought Monitor.

APPENDIX E. WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Casselton Robert Miller Regional Airport City: Casselton County: Cass Sampling Date: 11/2/2022
 Applicant/Owner: Mead & Hunt, Inc. State: N.Dakota Sampling Point/Wetland ID: W-3
 Investigator(s): Lance Loken, Lawrence Mettler Section, Township, Range: SE Qtr - SE Qtr Sec. 14 T.139N R.52W
 Landform (hillslope, terrace, etc.): Plain Local Relief (concave, convex, none): concave Slope % 0-3%
 Subregion (LRR): F Lat: 46.850648 Long: -97.204007 Datum: WGS 84
 Soil Map Unit Name: Bearden-Kindred silty clay loams, 0 to 2 percent slopes NWI Classification: (see Remarks)

Are climatic / hydrologic conditions in and around the site typical for this time of year? No

Are Vegetation No ; Soil No ; or Hydrology No significantly disturbed? Are "Normal Circumstances" present? No
 Are Vegetation No ; Soil No ; or Hydrology No 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Site was in severe drought conditions according to the U.S Drought Monitor. Sample Point was taken inside of Wetland 3 which was near the south end of the runway between the runway and taxiway. The NWI did not have this wetland in there database. However, the wetland was classified as a Freshwater emergent wetland (PEM1C) in the field.	

VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
(Plot size: <u> </u>)				Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC -): <u>1</u> (A)
1. <u> </u>				Total Number of Dominant Species across all Strata: <u>2</u> (B)
2. <u> </u>				
3. <u> </u>				
4. <u> </u>				
= Total Cover				
Sapling/Shrub Stratum				Percent of Dominant Species that are OBL, FACW, or FAC: <u>50%</u> (A/B)
(Plot size: <u> </u>)				
1. <u> </u>				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0%</u> x 1 <u>0</u> FACW species <u>85%</u> x 2 <u>1.7</u> FAC species <u>0%</u> x 3 <u>0</u> FACU species <u>2%</u> x 4 <u>0.08</u> UPL species <u> </u> x 5 <u> </u> Column Totals: <u>0.87</u> (A) <u>1.78</u> (B) Prevalence Index = B/A = <u>2.05</u>
2. <u> </u>				
3. <u> </u>				
4. <u> </u>				
5. <u> </u>				
= Total Cover				
Herb Stratum				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation Meets 2 - Dominance Test is > 50% 3 - Prevalence Index is ≤ 3.0 * Meets 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet). Problematic Hydrophytic Vegetation* (Explain)
(Plot size: <u>5' radius</u>)				
1. <u>Juncus sp.</u>	<u>85%</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Kentucky Blue Grass(Poa pratensis)</u>	<u>2%</u>	<u>No</u>	<u>FACU</u>	
3. <u> </u>				
4. <u> </u>				
5. <u> </u>				
6. <u> </u>				
7. <u> </u>				
8. <u> </u>				
9. <u> </u>				
10. <u> </u>				
87% = Total Cover				
Woody Vine Stratum				* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
(Plot size: <u> </u>)				
1. <u> </u>				
2. <u> </u>				
112% = Total Cover				
% Bare Ground in Herb Stratum	<u>25%</u>			

Remarks: Hydric vegetation was present in the area of the sample. The area was mowed because it was part of the airport property.

SOIL

Sampling Point/Wetland ID: W-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix			Redox Features				Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type*	Loc**		
0 - 6	2.5Y	2.5 / 1	100%					CL	
6 - 12+	2.5Y	5 / 3	100%					SiCL	

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils***:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside MLRA 72 & 73)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	*** Indicators of hydrophytic vegetations and wetland hydrology must be present, unless disturbed or problematic.	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)		

Restrictive Layer (if present):	Hydric Soil Present?	Yes	No	X
Type: _____				
Depth (inches): _____				

Remarks: Soils do not meet criteria for hydric soils. However, as vegetation and hydrology do meet criteria, it is WPC's professional opinion that this soil is behaving as a wetland and should be considered an aquatic resource.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required: check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	(where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water Stained Leaves (B9)	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
(where not tilled)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:	Wetland Hydrology Present?	Yes	X	No
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
(includes capillary fringe)				

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

Remarks: Severe Drought was present as indicated in the U.S. Drought Monitor.

APPENDIX E. WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Casselton Robert Miller Regional Airport City: Casselton County: Cass Sampling Date: 11/2/2022
 Applicant/Owner: Mead & Hunt, Inc. State: N.Dakota Sampling Point/Wetland ID: UPL-3
 Investigator(s): Lance Loken, Lawrence Mettler Section, Township, Range: SE Qtr - SE Qtr Sec. 14 T.139N R.52W
 Landform (hillslope, terrace, etc.): Plain Local Relief (concave, convex, none): none Slope % 0-3%
 Subregion (LRR): F Lat: 46.850641 Long: -97.204085 Datum: WGS 84
 Soil Map Unit Name: Bearden-Kindred silty clay loams, 0 to 2 percent slopes NWI Classification: _____
 Are climatic / hydrologic conditions in and around the site typical for this time of year? No
 Are Vegetation No ; Soil No ; or Hydrology No significantly disturbed? Are "Normal Circumstances" present? No
 Are Vegetation No ; Soil No ; or Hydrology No 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 <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: Site was in severe drought conditions according to the U.S Drought Monitor. Sample Point was taken outside of Wetland 3 which was near the south end of the runway between the runway and taxiway.	

VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
(Plot size: _____)				Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC -): <u>0</u> (A)
1. _____				Total Number of Dominant Species across all Strata: <u>2</u> (B)
2. _____				
3. _____				
4. _____				
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Percent of Dominant Species that are OBL, FACW, or FAC: <u>0%</u> (A/B)
1. _____				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0%</u> x 1 <u>0</u> FACW species <u>0%</u> x 2 <u>0</u> FAC species <u>0%</u> x 3 <u>0</u> FACU species <u>55%</u> x 4 <u>2.2</u> UPL species _____ x 5 _____ Column Totals: <u>0.55</u> (A) <u>2.2</u> (B) Prevalence Index = B/A = <u>4.00</u>
2. _____				
3. _____				
4. _____				
5. _____				
= Total Cover				
Herb Stratum (Plot size: <u>5' radius</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is > 50% _____ 3 - Prevalence Index is ≤ 3.0 * _____ 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet). _____ Problematic Hydrophytic Vegetation* (Explain) _____ * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Kentucky Blue Grass(Poa pratensis)</u>	<u>50%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Smooth Brome (Bromus inermis)</u>	<u>50%</u>	<u>Yes</u>	<u>UPL</u>	
3. <u>Taraxacum officinale(Common Dandelion)</u>	<u>5%</u>	<u>No</u>	<u>FACU</u>	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
<u>105%</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. _____				
2. _____				
<u>110%</u> = Total Cover				
% Bare Ground in Herb Stratum <u>5%</u>				
Remarks: Hydric vegetation was not present in the area of the sample. The area was mowed because it was a part of the airport, but was dominated by upland grasses.				

SOIL

Sampling Point/Wetland ID: UPL-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth (inches)	Matrix			Redox Features				Texture	Remarks	
	Color (moist)		%	Color (moist)	%	Type*	Loc**			
0 - 12	2.5Y	2.5 / 1	90%	2.5Y	8 / 1	10%		M	CL	Salt
12 - 15	2.5Y	4 / 2	100%						SiCL	
15 - 23	2.5Y	4 / 3	90%	2.5Y	7 / 1	10%		M	CL	SLM
-										
-										
-										
-										

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils***:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside MLRA 72 & 73)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	*** Indicators of hydrophytic vegetations and wetland hydrology must be present, unless disturbed or problematic.	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)		

Restrictive Layer (if present):	Hydric Soil Present?	Yes	No	X
Type: _____				
Depth (inches): _____				

Remarks: Note: 3 Chroma from 15 to 23 inches means this was a non-wetland soil. Also 2 chroma had no redox features from 12 to 15 inches, again confirming a non-wetland soil.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required: check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	(where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water Stained Leaves (B9)	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
(where not tilled)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:	Wetland Hydrology Present?	Yes	No	X
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
(includes capillary fringe)				

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

Remarks: Severe Drought was present as indicated in the U.S. Drought Monitor.

APPENDIX E. WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Casselton Robert Miller Regional Airport City: Casselton County: Cass Sampling Date: 11/3/2022
 Applicant/Owner: Mead & Hunt, Inc. State: N.Dakota Sampling Point/Wetland ID: W-4
 Investigator(s): Lance Loken, Lawrence Mettler Section, Township, Range: NW Qtr - NW Qtr Sec. 24 T.139N R.52W
 Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): concave Slope % 0-3%
 Subregion (LRR): F Lat: 46.847071 Long: -97.200369 Datum: WGS 84
 Soil Map Unit Name: Fargo silty clay, 0 to 1 percent slopes NWI Classification: (see Remarks)

Are climatic / hydrologic conditions in and around the site typical for this time of year? No

Are Vegetation No ; Soil No ; or Hydrology No significantly disturbed? Are "Normal Circumstances" present? No
 Are Vegetation No ; Soil No ; or Hydrology No 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Site was in severe drought conditions according to the U.S Drought Monitor. Sample Point was taken inside of Wetland 4A which was near the intersection of 156th Ave SE and 39th St SE. The NWI did not have this wetland in there database. However, the wetland was classified as a Freshwater emergent wetland (PEMfx) in the field.	

VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
(Plot size: _____)				Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC -): <u>2</u> (A)
1. _____				Total Number of Dominant Species across all Strata: <u>2</u> (B)
2. _____				
3. _____				
4. _____				
= Total Cover				
Sapling/Shrub Stratum				Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)
(Plot size: _____)				
1. _____				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>30%</u> x 1 <u>0.3</u> FACW species <u>40%</u> x 2 <u>0.8</u> FAC species <u>0%</u> x 3 <u>0</u> FACU species <u>0%</u> x 4 <u>0</u> UPL species _____ x 5 _____ Column Totals: <u>0.7</u> (A) <u>1.1</u> (B) Prevalence Index = B/A = <u>1.57</u>
2. _____				
3. _____				
4. _____				
5. _____				
= Total Cover				
Herb Stratum				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation Meets 2 - Dominance Test is > 50% Meets 3 - Prevalence Index is ≤ 3.0 * Meets 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet). Problematic Hydrophytic Vegetation* (Explain)
(Plot size: <u>5' radius</u>)				
1. <u>Reed Canary Grass(Phalaris arundinacea)</u>	<u>40%</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Typha sp. (Cattails)</u>	<u>30%</u>	<u>Yes</u>	<u>OBL</u>	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
70% = Total Cover				
Woody Vine Stratum				* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>
(Plot size: _____)				
1. _____				
2. _____				
100% = Total Cover				
% Bare Ground in Herb Stratum	<u>30%</u>			

Remarks: Hydric vegetation was present in the area of the sample.

SOIL

Sampling Point/Wetland ID: W-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix			Redox Features				Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type*	Loc**		
0 - 4	2.5Y 3 / 1		100%					CL	Compaction Evident
4 - 7	2.5Y 3 / 1		45%					SiCL	Mixed Layer from past construction activity
	2.5Y 4 / 2		55%						
7 - 13	2.5Y 4 / 2		90%	2.5Y 7 / 2	10%		M	CL	Soft Lime Masses
13 - 24	2.5Y 4 / 2		75%	2.5Y 7 / 2	25%		M	CL	Soft Lime Masses
-									
-									
-									

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils***:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside MLRA 72 & 73)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input checked="" type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)		
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)		

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

Restrictive Layer (if present):	Hydric Soil Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
Type: <u>Compaction evidence >7"</u>					
Depth (inches): <u>7"</u>					

Remarks: The surface soil appears to have been affected by the development present within the area. The soil did not clearly meet any of the established hydric soil indicators, but WPC is using "Other" as the hydric soil indicator. The 13 to 24 horizon had 2 chroma with no redox features, but the soil did not meet any of the hydric soil indicators. WPC considers this to be "Other", and with the hydrophytic vegetation and hydrology indicators, it is WPC's opinion that this soil is behaving as a wetland soil.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required: check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	(where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input checked="" type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water Stained Leaves (B9)	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
(where not tilled)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:	Wetland Hydrology Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____					
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____					
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____					
(includes capillary fringe)					

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

Remarks: Severe Drought was present as indicated in the U.S. Drought Monitor.

APPENDIX E. WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Casselton Robert Miller Regional Airport City: Casselton County: Cass Sampling Date: 11/3/2022
 Applicant/Owner: Mead & Hunt, Inc. State: N.Dakota Sampling Point/Wetland ID: W-4E
 Investigator(s): Lance Loken, Lawrence Mettler Section, Township, Range: SW Qtr - SW Qtr Sec. 13 T.139N R.52W
 Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): concave Slope % 0-3%
 Subregion (LRR): F Lat: 46.847231 Long: -97.198806 Datum: WGS 84
 Soil Map Unit Name: Fargo silty clay, 0 to 1 percent slopes NWI Classification: (see Remarks)

Are climatic / hydrologic conditions in and around the site typical for this time of year? No

Are Vegetation No ; Soil No ; or Hydrology No significantly disturbed? Are "Normal Circumstances" present? No
 Are Vegetation No ; Soil No ; or Hydrology No 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: Site was in severe drought conditions according to the U.S Drought Monitor. Sample Point was taken inside of Wetland 4E which was within the ditch north of 39th St SE. The NWI did not have this wetland in there database. However, the wetland was classified as a Freshwater emergent wetland (PEMFX) in the field.	

VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
(Plot size: _____)				Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC -): <u>2</u> (A)
1. _____	_____	_____	_____	Total Number of Dominant Species across all Strata: <u>2</u> (B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				
Sapling/Shrub Stratum				Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)
(Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0%</u> x 1 <u>0</u> FACW species <u>80%</u> x 2 <u>1.6</u> FAC species <u>0%</u> x 3 <u>0</u> FACU species <u>0%</u> x 4 <u>0</u> UPL species _____ x 5 _____ Column Totals: <u>0.8</u> (A) <u>1.6</u> (B) Prevalence Index = B/A = <u>2.00</u>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
Herb Stratum				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation Meets 2 - Dominance Test is > 50% Meets 3 - Prevalence Index is ≤ 3.0 * 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet). Problematic Hydrophytic Vegetation* (Explain) * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes <u>X</u> No _____
(Plot size: <u>5' radius</u>)				
1. <u>Juncus sp.</u>	<u>30%</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Reed Canary Grass(Phalaris arundinacea)</u>	<u>30%</u>	<u>Yes</u>	<u>FACW</u>	
3. <u>Spartina pectinata(Freshwater Cord Grass)</u>	<u>20%</u>	<u>No</u>	<u>FACW</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
80% = Total Cover				
Woody Vine Stratum				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
(Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
100% = Total Cover				
% Bare Ground in Herb Stratum				
Remarks: Hydric vegetation was present in the area of the sample. A large amount of crop residue was present within the mowed ditch.				

SOIL

Sampling Point/Wetland ID: W-4E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 - 4	2.5Y 2.5 / 1	90%	2.5Y 8 / 1	10%		M	CL	Salt Crystals
4 - 8	2.5Y 2.5 / 1	100%					CL	
8 - 14	2.5Y 4 / 2	55%	10YR 4 / 4	5%	C	M	SiCL	Deep mixing present
	2.5Y 2.5 / 1	40%						
14 - 30	2.5Y 3 / 2	75%	2.5Y 7 / 2	20%			CL	Soft Lime Masses
-			10YR 4 / 4	5%	C	M		
-								
-								

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils***:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside MLRA 72 & 73)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input checked="" type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)		
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)		

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

Restrictive Layer (if present):	Hydric Soil Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
Type: <u>Compaction at Surface</u>					
Depth (inches): <u>0</u>					

Remarks: The soils from 8 to 14 inches appear to have been affected by the road development present within the area. The soil did not clearly meet any of the established hydric soil indicators, but WPC is using "Other" as the hydric soil indicator. The 14 to 30 horizon had 2 chroma with redox features, but the soil did not meet any of the hydric soil indicators. WPC considers this to be "Other", and with the hydrophytic vegetation and hydrology indicators, it is WPC's opinion that this soil is behaving as a wetland soil.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required: check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3)	(where not tilled)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input checked="" type="checkbox"/> Water Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
	(where tilled)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input checked="" type="checkbox"/> Geomorphic Position (D2)
	<input type="checkbox"/> FAC-Neutral Test (D5)
	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)

Field Observations:	Wetland Hydrology Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____					
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____					
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____					
(includes capillary fringe)					

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

Remarks: Severe Drought was present as indicated in the U.S. Drought Monitor.

APPENDIX E. WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Casselton Robert Miller Regional Airport City: Casselton County: Cass Sampling Date: 11/3/2022
 Applicant/Owner: Mead & Hunt, Inc. State: N.Dakota Sampling Point/Wetland ID: UPL-4
 Investigator(s): Lance Loken, Lawrence Mettler Section, Township, Range: SW Qtr - SW Qtr Sec. 13 T.139N R.52W
 Landform (hillslope, terrace, etc.): Plain Local Relief (concave, convex, none): none Slope % 0-3%
 Subregion (LRR): F Lat: 46.847271 Long: -97.200399 Datum: WGS 84
 Soil Map Unit Name: Fargo silty clay, 0 to 1 percent slopes NWI Classification: _____

Are climatic / hydrologic conditions in and around the site typical for this time of year? No
 Are Vegetation No ; Soil No ; or Hydrology No significantly disturbed? Are "Normal Circumstances" present? No
 Are Vegetation No ; Soil No ; or Hydrology No 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 <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: Site was in severe drought conditions according to the U.S Drought Monitor. Sample Point was taken outside of Wetland 4G which was near the intersection of 156th Ave SE and 39th St SE.	

VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
(Plot size: _____)				Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC -): <u>0</u> (A)
1. _____	_____	_____	_____	Total Number of Dominant Species across all Strata: <u>2</u> (B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Percent of Dominant Species that are OBL, FACW, or FAC: <u>0%</u> (A/B)
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0%</u> x 1 <u>0</u> FACW species <u>23%</u> x 2 <u>0.46</u> FAC species <u>0%</u> x 3 <u>0</u> FACU species <u>35%</u> x 4 <u>1.4</u> UPL species _____ x 5 _____ Column Totals: <u>0.58</u> (A) <u>1.86</u> (B) Prevalence Index = B/A = <u>3.21</u>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot size: <u>5' radius</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is > 50% _____ 3 - Prevalence Index is ≤ 3.0 * _____ 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet). _____ Problematic Hydrophytic Vegetation* (Explain) _____ * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Kentucky Blue Grass(Poa pratensis)</u>	<u>35%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Smooth Brome (Bromus inermis)</u>	<u>35%</u>	<u>Yes</u>	<u>UPL</u>	
3. <u>Hordeum jubatum(Fox-Tail Barley)</u>	<u>3%</u>	<u>No</u>	<u>FACW</u>	
4. <u>Reed Canary Grass(Phalaris arundinacea)</u>	<u>20%</u>	<u>No</u>	<u>FACW</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
93% = Total Cover				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
100% = Total Cover				
% Bare Ground in Herb Stratum <u>7%</u>				

Remarks: Hydric vegetation was not present in the area of the sample. The area was partially mowed because it was near an approach and road ditch. The area was dominated by upland grasses.

SOIL

Sampling Point/Wetland ID: UPL-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 - 12	2.5Y 2.5 / 1	100%					CL	
12 - 14	2.5Y 2.5 / 1	85%	2.5Y 8 / 1	15%		M	CL	Salt Crystals
14 - 17	2.5Y 4 / 2	90%	2.5Y 8 / 1	10%		M	SiCL	Salt Crystals
17 - 27	2.5Y 4 / 3	95%	7.5YR 4 / 4	5%	C	M	SiCL	
-								
-								
-								

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils***:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside MLRA 72 & 73)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	*** Indicators of hydrophytic vegetations and wetland hydrology must be present, unless disturbed or problematic.	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)		

Restrictive Layer (if present):	Hydric Soil Present?	Yes	No	X
Type: <u>Compact middle to surface</u>				
Depth (inches): _____				

Remarks: Note: 3 Chroma 17 to 27 inches with redox features, and from 14 to 17 inches was 2 chroma with no redox features. This was a non-wetland soil.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required: check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	(where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water Stained Leaves (B9)	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
(where not tilled)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:	Wetland Hydrology Present?	Yes	No	X
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
(includes capillary fringe)				

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

Remarks: Severe Drought was present as indicated in the U.S. Drought Monitor.

APPENDIX E. WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Casselton Robert Miller Regional Airport City: Casselton County: Cass Sampling Date: 11/2/2022
 Applicant/Owner: Mead & Hunt, Inc. State: N.Dakota Sampling Point/Wetland ID: Non-W1
 Investigator(s): Lance Loken, Lawrence Mettler Section, Township, Range: SE Qtr - NW Qtr Sec. 14 T.139N R.52W
 Landform (hillslope, terrace, etc.): Plain Local Relief (concave, convex, none): concave Slope % 0-3%
 Subregion (LRR): F Lat: 46.857495 Long: -97.212674 Datum: WGS 84
 Soil Map Unit Name: Bearden-Kindred silty clay loams, 0 to 2 percent slopes NWI Classification: _____

Are climatic / hydrologic conditions in and around the site typical for this time of year? No

Are Vegetation No ; Soil No ; or Hydrology No significantly disturbed? Are "Normal Circumstances" present? No
 Are Vegetation No ; Soil No ; or Hydrology No 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 <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: Site was in severe drought conditions according to the U.S Drought Monitor. Sample Point was taken between the airport runway and the tilled farmland. Slight concave area lead to the sampling of this area for hydric soils. Normal conditions no present, drought ongoing.	

VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
(Plot size: _____)				Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC -): <u>0</u> (A)
1. _____	_____	_____	_____	Total Number of Dominant Species across all Strata: <u>2</u> (B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Percent of Dominant Species that are OBL, FACW, or FAC: <u>0%</u> (A/B)
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0%</u> x 1 <u>0</u> FACW species <u>0%</u> x 2 <u>0</u> FAC species <u>0%</u> x 3 <u>0</u> FACU species <u>55%</u> x 4 <u>2.2</u> UPL species _____ x 5 _____ Column Totals: <u>0.55</u> (A) <u>2.2</u> (B) Prevalence Index = B/A = <u>4.00</u>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot size: <u>5' radius</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is > 50% _____ 3 - Prevalence Index is ≤ 3.0 * _____ 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet). _____ Problematic Hydrophytic Vegetation* (Explain) _____ * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Smooth Brome (Bromus inermus)</u>	<u>65%</u>	<u>Yes</u>	<u>UPL</u>	
2. <u>Kentucky Blue Grass(Poa pratensis)</u>	<u>45%</u>	<u>Yes</u>	<u>FACU</u>	
3. <u>Taraxacum officinale(Common Dandelion)</u>	<u>10%</u>	<u>No</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
120% = Total Cover				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum <u>0%</u>				
Remarks: Hydric vegetation was not present in the area of the sample. The area was mowed because it was a part of the airport, but was dominated by upland grasses.				

SOIL

Sampling Point/Wetland ID: Non-W1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix			Redox Features				Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type*	Loc**		
0 - 7	2.5Y	2.5 / 1	100%					CL	
7 - 10	2.5Y	2.5 / 1	50%					CL	
-	10YR	4 / 2	50%						
10 - 12	2.5Y	5 / 2	100%					CL	
12 - 25	2.5Y	4 / 2	100%					CL	
-									
-									
-									

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils***:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside MLRA 72 & 73)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	*** Indicators of hydrophytic vegetations and wetland hydrology must be present, unless disturbed or problematic.	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)		

Restrictive Layer (if present):	Hydric Soil Present?	Yes	No	X
Type: _____				
Depth (inches): _____				

Remarks: Note: No Redox features with 2 Chroma noted in the soil profile. This was not a wetland soil.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required: check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	(where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water Stained Leaves (B9)	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
(where not tilled)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:	Wetland Hydrology Present?	Yes	No	X
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
(includes capillary fringe)				

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

Remarks: Severe Drought was present as indicated in the U.S. Drought Monitor.

APPENDIX E. WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Casselton Robert Miller Regional Airport City: Casselton County: Cass Sampling Date: 11/2/2022
 Applicant/Owner: Mead & Hunt, Inc. State: N.Dakota Sampling Point/Wetland ID: Non-W2
 Investigator(s): Lance Loken, Lawrence Mettler Section, Township, Range: NW Qtr - SE Qtr Sec. 14 T.139N R.52W
 Landform (hillslope, terrace, etc.): Plain Local Relief (concave, convex, none): concave Slope % 0-3%
 Subregion (LRR): F Lat: 46.853936° Long: -97.209605 Datum: WGS 84
 Soil Map Unit Name: Bearden-Kindred silty clay loams, 0 to 2 percent slopes NWI Classification: _____
 Are climatic / hydrologic conditions in and around the site typical for this time of year? No
 Are Vegetation No ; Soil No ; or Hydrology No significantly disturbed? Are "Normal Circumstances" present? No
 Are Vegetation No ; Soil No ; or Hydrology No 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 <u>Y</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: Site was in severe drought conditions according to the U.S Drought Monitor. Sample Point was taken to the south of the airport taxiway between two culverts.	

VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
(Plot size: _____)				Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC -): <u>#REF!</u> (A)
1. _____				Total Number of Dominant Species across all Strata: <u>2</u> (B)
2. _____				
3. _____				
4. _____				
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Percent of Dominant Species that are OBL, FACW, or FAC: <u>#REF!</u> (A/B)
1. _____				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>#REF!</u> x 1 <u>#REF!</u> FACW species <u>#REF!</u> x 2 <u>#REF!</u> FAC species <u>#REF!</u> x 3 <u>#REF!</u> FACU species <u>#REF!</u> x 4 <u>#REF!</u> UPL species _____ x 5 _____ Column Totals: <u>#REF!</u> (A) <u>#REF!</u> (B) Prevalence Index = B/A = <u>#REF!</u>
2. _____				
3. _____				
4. _____				
5. _____				
= Total Cover				
Herb Stratum (Plot size: <u>5' radius</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <u>#REF!</u> 2 - Dominance Test is > 50% <u>#REF!</u> 3 - Prevalence Index is ≤ 3.0 * <u>#REF!</u> 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet). Problematic Hydrophytic Vegetation* (Explain) * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1. <u>Juncus sp.</u>	<u>70%</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Trifolium pratense (Red Clover)</u>	<u>20%</u>	<u>No</u>	<u>FACU</u>	
3. <u>Western Wheatgrass (Pascopyrum smithii)</u>	<u>10%</u>	<u>No</u>	<u>UPL</u>	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
100% = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____				
2. _____				
= Total Cover				
% Bare Ground in Herb Stratum <u>7%</u>				
Remarks: Hydric vegetation was present because of the dominate rush species present. The area was mowed because it was a part of the airport.				

SOIL

Sampling Point/Wetland ID: Non-W2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 - 4	2.5Y 3 / 1	100%					CL	
4 - 16	2.5Y 5 / 3	70%	7.5YR 4 / 4	30%	C	M	SiCL	
-								
-								
-								
-								
-								

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils***:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside MLRA 72 & 73)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	*** Indicators of hydrophytic vegetations and wetland hydrology must be present, unless disturbed or problematic.	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)		

Restrictive Layer (if present):	Hydric Soil Present?	Yes	No	X
Type: _____				
Depth (inches): _____				

Remarks: Note: 3 Chroma present from 4 to 16 inches. Redox features were noted, however the 3 chroma makes this a non-wetland soils.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required: check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	(where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water Stained Leaves (B9)	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
(where not tilled)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:	Wetland Hydrology Present?	Yes	No	X
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
(includes capillary fringe)				

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

Remarks: Severe Drought was present as indicated in the U.S. Drought Monitor.

APPENDIX E. WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Casselton Robert Miller Regional Airport City: Casselton County: Cass Sampling Date: 11/2/2022
 Applicant/Owner: Mead & Hunt, Inc. State: N.Dakota Sampling Point/Wetland ID: Non-W3
 Investigator(s): Lance Loken, Lawrence Mettler Section, Township, Range: NW Qtr - SE Qtr Sec. 14 T.139N R.52W
 Landform (hillslope, terrace, etc.): Plain Local Relief (concave, convex, none): concave Slope % 0-3%
 Subregion (LRR): F Lat: 46.852757 Long: -97.206787 Datum: WGS 84
 Soil Map Unit Name: Bearden-Kindred silty clay loams, 0 to 2 percent slopes NWI Classification: _____
 Are climatic / hydrologic conditions in and around the site typical for this time of year? No
 Are Vegetation No ; Soil No ; or Hydrology No significantly disturbed? Are "Normal Circumstances" present? No
 Are Vegetation No ; Soil No ; or Hydrology No 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 <u>X</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: <u>Site was in severe drought conditions according to the U.S Drought Monitor. Sample Point was taken in between the taxiway and runway of the airport.</u>	

VEGETATION - Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
(Plot size: _____)				Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC -): <u>1</u> (A)
1. _____				Total Number of Dominant Species across all Strata: <u>2</u> (B)
2. _____				
3. _____				
4. _____				
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Percent of Dominant Species that are OBL, FACW, or FAC: <u>50%</u> (A/B)
1. _____				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0%</u> x 1 <u>0</u> FACW species <u>100%</u> x 2 <u>2</u> FAC species <u>0%</u> x 3 <u>0</u> FACU species <u>0%</u> x 4 <u>0</u> UPL species _____ x 5 _____ Column Totals: <u>1</u> (A) <u>2</u> (B) Prevalence Index = B/A = <u>2.00</u>
2. _____				
3. _____				
4. _____				
5. _____				
= Total Cover				
Herb Stratum (Plot size: <u>5' radius</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation Meets 2 - Dominance Test is > 50% 3 - Prevalence Index is ≤ 3.0 * 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet). Problematic Hydrophytic Vegetation* (Explain) * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1. <u>Juncus sp.</u>	<u>100%</u>	<u>Yes</u>	<u>FACW</u>	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
100% = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____				
2. _____				
105% = Total Cover				
% Bare Ground in Herb Stratum <u>5%</u>				
Remarks: <u>Rushes dominated the sample location. Area was mowed.</u>				

SOIL

Sampling Point/Wetland ID: Non-W3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 - 10	2.5Y 2.5 / 1	100%					CL	
10 - 16	2.5Y 5 / 3	100%					SiCL	No Redox
-								
-								
-								
-								
-								

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils***:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside MLRA 72 & 73)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	*** Indicators of hydrophytic vegetations and wetland hydrology must be present, unless disturbed or problematic.	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)		

Restrictive Layer (if present):	Hydric Soil Present?	Yes	No	X
Type: _____				
Depth (inches): _____				

Remarks: Note: 3 Chroma present - no Redox features were noted from 10 to 16 inches, this was a non-wetland soil.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required: check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	(where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water Stained Leaves (B9)	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
(where not tilled)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:	Wetland Hydrology Present?	Yes	No	X
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____				
(includes capillary fringe)				

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

Remarks: Severe Drought was present as indicated in the U.S. Drought Monitor.

Appendix F

Appendix F. Plant List

Casselton Robert Miller Regional Airport

*** Wetland Indicator Status (WIS) key:**

FAC =Facultative: plants that occur in a variety of habitats, including wetland and mesic to xeric non-wetland habitats but commonly occur in standing water or saturated soils.

FACU = Facultative Upland: plants that typically occur in xeric or mesic non-wetland habitats but may frequently occur in standing water or saturated soils.

FACW =Facultative Wet: plants that nearly always occur in areas of prolonged flooding or require standing water or saturated soils but may, on rare occasions, occur in non-wetlands.

OBL =Obligate: plants that always occur in standing water or in saturated soils.

UPL =Upland: plants that rarely occur in water or saturated soils.

Genus	Species	Common Name	WIS*
Bromus	inermis	smooth brome grass	UPL
Hordeum	jubatum	foxtail barley	FACW
Pascopyrum	smithii	western wheatgrass	FACU
Polygonum	arenastrum	common knotweed	FAC
Phalaris	arundunacea	reed canarygrass	FACW
Poa	pratensis	kentucky bluegrass	FACU
Spartina	pectinata	prarie cordgrass	FACW
Taraxacum	officinale	common dandelion	FACU
Trifolium	pratense	red clover	FACU
Typha	sp.	cattails	OBL

Appendix I: Wetlands Jurisdictional Determination



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
NORTH DAKOTA REGULATORY OFFICE
3319 UNIVERSITY DRIVE
BISMARCK, NORTH DAKOTA 58504-7565

May 11, 2023

NWO-1993-60001-BIS

Federal Aviation Administration - Dakota-Minnesota Airports District Office
Attn: Mr. Casey Buechler
2301 University Drive, Building 23B
Bismarck, North Dakota 58504

Dear Mr. Buechler:

We are responding to your April 18, 2023 request for an approved jurisdictional determination for the Casselton Robert Miller Regional Airport. The approximately 250-acre project site is located in Sections 13, 14, 23, and 24, Township 139 North, Range 80 West, Latitude 46.855556° North, Longitude -97.212778° West, Cass County, North Dakota.

Based on available information, we have determined that the resources identified as wetlands 4a-h **are** jurisdictional. Approximately 2.25 acres of waters of the United States, including wetlands, are present within the survey area. These waters are regulated under Section 404 of the Clean Water Act, since they are adjacent wetlands that abut a tributary system east of the project area.

We have also determined that the resources identified as wetlands 1a-b, 2a-b, and 3 in your project area are preamble waters. As such, these waters are not currently regulated by the Corps of Engineers. This disclaimer of jurisdiction is only for Section 404 of the Federal Clean Water Act. Other Federal, State, and local laws may apply to your activities.

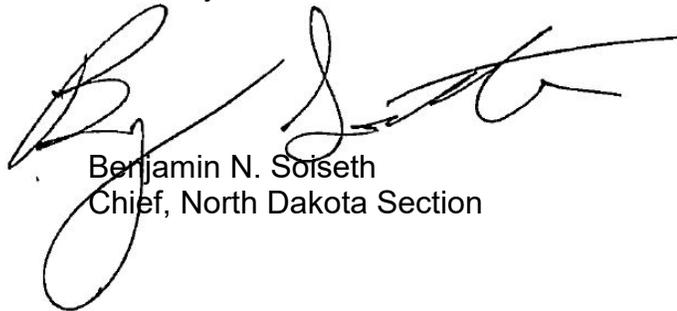
An approved (JD) has been completed for the wetland areas identified in your request and is enclosed for your information. The JD may also be viewed at our website located at: <http://www.nwo.usace.army.mil/Missions/Regulatory-Program/North-Dakota/Jurisdictional-Determination.aspx>. The JD will be available on the website within 30 days. You may also request copies of the supporting materials the Corps used in determining this JD. If you are not in agreement with the JD, you may request an administrative appeal under Corps regulations found at 33 CFR 331. The request for appeal (copy enclosed) must be received within 60 days from the date of this correspondence. If you would like more information on the jurisdictional appeal process, contact this office. It is not necessary to submit a Request for Appeal if you do not object to the JD. The JD will be valid for a period of 5 years from the date of this letter.

You should provide a copy of this letter and notice to all other affected parties, including any individual who has an identifiable and substantial legal interest in the property.

We appreciate your feedback. At your earliest convenience, please tell us how we are doing by completing the customer service survey found on our website at <https://regulatory.ops.usace.army.mil/customer-service-survey/>.

Please refer to identification number NWO-1993-60001-BIS in any correspondence concerning this project. If you have any questions, please contact Amber Inman by email at Amber.L.Inman@usace.army.mil, or telephone at (701) 255-0015, extension 2009. For more information regarding our program, please visit our website at <http://www.nwo.usace.army.mil/Missions/RegulatoryProgram/NorthDakota.aspx>.

Sincerely,



Benjamin N. Soiseth
Chief, North Dakota Section

Enclosures

Appendix J: Agency Solicitation of Views

From: [Kelli Dunn](#)
To: [Colleen Bosold](#); Sarah.Emmel@meadhunt.com.
Cc: [Kristin Nicholson](#); [Victor Meyers](#); [Austin Gruebele](#); [Jeff Cooley](#)
Subject: FW: Casselton Robert Miller Regional Airport – Runway Relocation Project - Environmental Assessment (EA) Agency Solicitation of Views
Date: Tuesday, August 6, 2024 3:28:19 PM
Attachments: [MeadHuntlogo_87950253-989c-49b2-a74f-a156c21c38dd.png](#)
[image001.png](#)
[image002.png](#)
[Casselton Robert Miller Regional Airport Proposed Project Exhibit 7-24.pdf](#)

You don't often get email from kelli.dunn@rrvw.net. [Learn why this is important](#)

Good afternoon:

Thank you for providing the Red River Valley & Western Railroad the opportunity to comment on the proposed Casselton Airport Project. It is exciting to see the growth and expansion in this area.

The RRVW does have a project proposal to add a new siding track on the southwest side of the tracks that would extend from the highway 18 south for 8,000 ft.

In general, we do not have any concerns with the airport runway expansion, and we support your effort to close both road crossings.

The questions we have include the following:

1. Will the proposed changes to the airport alter or change the drainage so that the railroad must handle more water?
2. What land is the airport purchasing around the airport? Will any of that land be on the southwest side of our tracks?
3. Will the airport be developing buildings and infrastructure on the southwest side of our railroad tracks?
4. Will the airport changes create any new business development challenges (or opportunities) that we do not have today?
5. What will be the limitations for our facility (ie: height) and other restrictions that are built near the airport?
6. Will this project eliminate us from ever developing new rail serviced customers south of Casselton?
7. What does “establishing new right-of-way easements” mean? Will it impact the railroad?

Colleen, we appreciate the notification regarding this project, and we look forward to working with you.

The airport is a great neighbor to the RRVW, and we want to work with you to expand and grow the local infrastructure of Casselton.

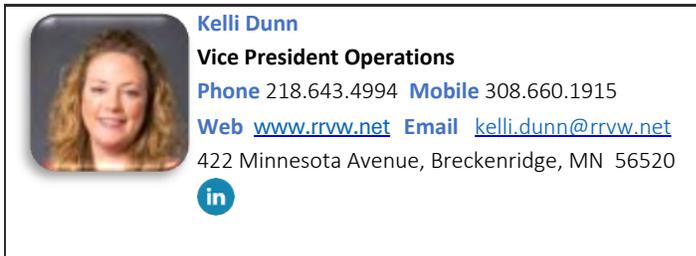
Finally, I wanted to mention that we will need to be informed if any of the construction work requires

men and equipment to be on our property or within 25 ft of the railroad track.

If that is the case, we will need to work with your team to provide them a permit to be on railroad property and possibly a flagman to keep them safe from train traffic.

We look forward to hearing back from you.

Regards,
Kelli Dunn



From: Austin Gruebele <austin.gruebele@rrvw.net>

Sent: Tuesday, July 23, 2024 8:59 AM

To: Victor Meyers <victor.meyers@rrvw.net>; Kelli Dunn <kelli.dunn@rrvw.net>; Kristin Nicholson <kristin.nicholson@rrvw.net>

Subject: Fwd: Casselton Robert Miller Regional Airport – Runway Relocation Project - Environmental Assessment (EA) Agency Solicitation of Views

I'm forwarding this email I received yesterday regarding proposed changes to the Casselton airport. Looks like they want to expand on the airport to the south along our mainline.

The two big changes I see for RRWW is the airport property extending further southeast along our ROW and closing two roads which would result in eliminating two grade crossings.

Austin Gruebele
Manager of Operations Support
701-640-4477 (Cell)
218-643-4994 (Work)
422 Minnesota Ave
Breckenridge, MN 56520

From: Colleen Bosold <Colleen.Bosold@meadhunt.com>

Sent: Monday, July 22, 2024 3:50 PM

To: bkreft@nd.gov <bkreft@nd.gov>; dglatt@nd.gov <dglatt@nd.gov>; dwrprojectreview@nd.gov <dwrprojectreview@nd.gov>; dwilke@nd.gov <dwilke@nd.gov>; jodi.delozier@nd.gov <jodi.delozier@nd.gov>; ndpsc@nd.gov <ndpsc@nd.gov>; aaron.birst@ndaco.org <aaron.birst@ndaco.org>; Bott, Wade - FPAC-NRCS, ND <wade.bott@usda.gov>; Dillin, Adam <adillin@nd.gov>; emurphy@nd.gov <emurphy@nd.gov>; benjamin.n.soiseth@usace.army.mil <benjamin.n.soiseth@usace.army.mil>; amber.linman@usace.army.mil <amber.linman@usace.army.mil>; kory_richardson@fws.gov <kory_richardson@fws.gov>; kress@wapa.gov <kress@wapa.gov>; mccoy.melissa@epa.gov <mccoy.melissa@epa.gov>; dan.hovland@usda.gov <dan.hovland@usda.gov>; lee.potter@dot.gov <lee.potter@dot.gov>; Austin Gruebele <austin.gruebele@rrvw.net>; jeremy.delgado@lumen.com <jeremy.delgado@lumen.com>; info@kwh.com <info@kwh.com>; planning@casscountynd.gov <planning@casscountynd.gov>; Hansen, Cole <HansenC@casscountynd.gov>; Soucy, Tom <soucyt@casscountynd.gov>; prochniakj@casscountynd.gov <prochniakj@casscountynd.gov>; econdev@casselton.org <econdev@casselton.org>; publicworks@casselton.org <publicworks@casselton.org>; cassaudit@casselton.org <cassaudit@casselton.org>; Caryn Weber <ETNDCW@outlook.com>; aasandk@casscountynd.gov <aasandk@casscountynd.gov>; Madriggab@casscountynd.gov <Madriggab@casscountynd.gov>

Cc: Sarah Emmel <Sarah.Emmel@meadhunt.com>; Evan Barrett <Evan.Barrett@meadhunt.com>; Josh Brelje <Josh.Brelje@meadhunt.com>; Tom Schauer <Tom.Schauer@meadhunt.com>; Probert, Thomas G (FAA) <Thomas.G.Probert@faa.gov>; Jenny, Melissa M (FAA) <Melissa.M.Jenny@faa.gov>; Colleen Bosold <Colleen.Bosold@meadhunt.com>

Subject: Casselton Robert Miller Regional Airport – Runway Relocation Project - Environmental Assessment (EA) Agency Solicitation of Views

You don't often get email from colleen.bosold@meadhunt.com. [Learn why this is important](#)

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good afternoon,

The Casselton Robert Miller Regional Airport (5N8) in Casselton, North Dakota, in cooperation with the Federal Aviation Administration (FAA), is preparing an Environmental Assessment (EA) to enhance its runway and parallel taxiway. The Airport has contracted with Mead & Hunt to assist with the preparation of the EA. In accordance with the National Environmental Policy Act (NEPA), the EA will evaluate potential physical, environmental, and social impacts of the proposed action.

While working on an Airport Master Plan in 2020, 5N8 found deficiencies in the Taxilane Object Free

Areas resulting in congestion and circulation limitations for aircraft. These, along with the runway's deteriorating pavement conditions, led the Airport to determine that Runway 13/31 needs improvements to:

Meet near- and long-term user needs and FAA airport design standards.

Accommodate current and projected aviation activity.

Allow for operations during inclement weather (under instrument meteorological conditions, when pilots rely on onboard instruments to operate aircraft).

Maintain compatible land use.

The proposed action consists of:

Constructing a new runway shifted 400 feet to the northeast to relieve circulation constraints and address deficiencies and 520 feet to the southeast to provide a clear runway protection zone for Runway 13.

Extending the runway by 1,600 feet to the southeast for an ultimate length of 5,500 feet.

Converting 3,380 feet of the existing runway to a parallel taxiway and extending the taxiway by 2,120 feet.

Acquiring approximately 240 acres of land surrounding the Airport in fee-simple and releasing aviation easements where no longer needed.

Relocating approximately 800 feet of 39th Street SE and approximately 1,850 feet of 156th Avenue SE, closing portions of both roads, and extinguishing existing and establishing new right-of-way easements.

Installing new lighting and navigational aids.

Updating approach procedures to ¾-mile visibility minimums for Runway 31, increasing the size of the corresponding runway protection zone.

The attached exhibit shows the proposed improvements.

The EA will consider all social, economic, and environmental effects in the development of this project. We invite you to provide initial comments regarding this proposed action and share information on any proposed projects your organization is considering near the Airport. Please send your comments for us to consider in the evaluation of this project by August 12, 2024, to:

Colleen Bosold

Colleen.Bosold@meadhunt.com

Or mail to:

Mead & Hunt, Inc.

Attn: Colleen Bosold
7900 International Drive, Suite 980
Bloomington, MN 55425

If you have questions regarding the project, please contact the project manager, Sarah Emmel, at 952-641-8805, or by email at Sarah.Emmel@meadhunt.com.

Sincerely,

Colleen Bosold
Community Engagement Coordinator
MEAD & HUNT, Inc.

Colleen Bosold (She, Her, Hers)

Planner & Community Engagement Coordinator | Aviation
Direct: 952-641-8826 | [Transfer Files](#)

Mead&Hunt

[LinkedIn](#) | [Facebook](#) | [Instagram](#) | [My LinkedIn](#)

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EEO COMPLIANCE: “This contractor and subcontractor shall abide by the requirements of 41 CFR §§ 60-1.4(a), 60-300.5(a) and 60-741.5(a). These regulations prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities, and prohibit discrimination against all individuals based on their race, color, religion, sex, or national origin. Moreover, these regulations require that covered prime contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, gender, sexual orientation, national origin, protected veteran status or disability.”

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August 8, 2024

Colleen Bosold
Community Engagement Coordinator
Mead & Hunt, Inc.
7900 International Dr., Suite 980
Bloomington, MN 55425

Re: Casselton Airport Runway Project in Cass County

Dear Ms. Bosold:

The North Dakota Department of Environmental Quality (Department) has reviewed the information concerning the above-referenced project received at the Department on July 22, 2024, with respect to possible environmental impacts.

1. Necessary measures should be taken to minimize fugitive dust emissions created during construction activities. Any complaints that may arise should be dealt with in an efficient and effective manner.
2. Care is to be taken during construction activity near any water of the state to minimize adverse effects on a water body. This includes minimal disturbance of stream beds and banks to prevent excess siltation, and the replacement and revegetation of any disturbed area as soon as possible after work has been completed. Caution must also be taken to prevent spills of oil and grease that may reach the receiving water from equipment maintenance and/or the handling of fuels on the site. Guidelines for minimizing degradation to waterways during construction are attached.
3. Projects disturbing one or more acres are required to have a permit to discharge stormwater runoff until the site is stabilized by the re-establishment of vegetation or other permanent cover. Further information on the stormwater permit may be obtained from the Department's website or by calling the Division of Water Quality at 701-328-5210. Also, cities may impose additional requirements and/or specific best management practices for construction affecting their storm drainage system. Check with the local officials to be sure any local stormwater management considerations are addressed.
4. All solid waste materials must be managed and transported in accordance with the state's solid and hazardous waste rules. Appropriate efforts to reduce, reuse and/or recycle waste materials are strongly encouraged. As appropriate, segregation of inert waste from non-inert waste can generally reduce the cost of waste management. Further information on waste management and recycling is available from the Department's Division of Waste Management at 701-328-5166.

4201 Normandy Street | Bismarck ND 58503-1324 | Fax 701-328-5200 | deq.nd.gov

Director's Office
701-328-5150

Division of
Air Quality
701-328-5188

Division of
Municipal Facilities
701-328-5211

Division of
Waste Management
701-328-5166

Division of
Water Quality
701-328-5210

Division of Chemistry
701-328-6140
2635 East Main Ave
Bismarck ND 58501

These comments are based on the information provided about the project in the above-referenced submittal. The U.S. Army Corps of Engineers may require a water quality certification from this Department for the project if the project is subject to their Section 404 permitting process. Any additional information which may be required by the U.S. Army Corps of Engineers under the process will be considered by this Department in our determination regarding the issuance of such a certification.

The Department owns no land in or adjacent to the proposed improvements, nor does it have any projects scheduled in the area. In addition, we believe the proposed activities are consistent with the State Implementation Plan for the Control of Air Pollution for the State of North Dakota.

If you have any questions regarding our comments, please feel free to contact this office.

Sincerely,



L. David Glatt, P.E., Director
North Dakota Department of Environmental Quality

LDG:ll
Attach.

Construction and Environmental Disturbance Requirements

The following are the minimum requirements of the North Dakota Department of Environmental Quality (Department) for projects that involve construction and environmental disturbance in or near waters of the State of North Dakota. They ensure that minimal environmental degradation occurs as a result of construction or related work which has the potential to affect waters of the state. All projects must be constructed to minimize the loss of soil, vegetative cover, and pollutants (chemical or biological) from a site.

Soils

Prevent the erosion and sediment loss using erosion and sediment controls. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, and land resources must be prohibited against compaction, vegetation loss and unnecessary damage.

Surface Waters

All construction must be managed to minimize impacts to aquatic systems. Follow safe storage and handling procedures to prevent the contamination of water from fuel spills, lubricants, and chemicals. Stream bank and stream bed disturbances must be contained to minimize silt movement, nutrient upsurges, plant dislocations, and any physical chemicals, or biological disruption. The use of pesticides or herbicides in or near surface waters is allowed under the Department's pesticide application permit with notification to the Department.

Fill Material

Any fill material placed below the ordinary high-water mark must be free of topsoil, decomposable materials, and persistent synthetic organic compounds, including, but not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing of fill material. All temporary fills must be removed. Debris and solid waste must be properly disposed or recycled. Impacted areas must be restored to near original condition.

From: [Yrkoski, Kyle](#)
To: [Colleen Bosold](#)
Subject: Casselton Robert Miller Regional Airport – Runway Relocation Project
Date: Thursday, August 8, 2024 8:36:29 AM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[Casselton Regional Airport.docx](#)
[DR_6270.pdf](#)
[Casselton Robert Miller Regional Airport Proposed Project Exhibit 7-24.pdf](#)
[Casselton Robert Miller Regional Airport – Runway Relocation Project .docx](#)

You don't often get email from kyrkoski@nd.gov. [Learn why this is important](#)

Hi Colleen,
Attached is our response for this project.
Please let me know that you received this.

Thanks

Kyle Yrkoski
Planner III, Planning & Education Division

701.328.4970(d) 701.328.3696(f) kyrkoski@nd.gov www.dwr.nd.gov



701.328.2750 • dwr@nd.gov • 1200 Memorial Highway • Bismarck, ND 58504



August 7, 2024

Colleen Bosold
Community Engagement Coordinator
Mead & Hunt, Inc
7900 International Drive, Suite 980
Bloomington, MN 55425
Colleen.Bosold@meadhunt.com

Dear Ms. Bosold:

This is in response to your request for a review of the environmental impacts associated with the Casselton Robert Miller Regional Airport (5N8) in Casselton, North Dakota runway and parallel taxiway enhancement.

The proposed project has been reviewed by Department of Water Resources (DWR), and the following comments are provided:

-The Department of Water Resources (DWR) and Water Resource Districts are responsible for regulating drainage in North Dakota. Consequently, the DWR requests to be notified regarding a proposed project's impacts, if any, to water resources, such as watercourses (i.e. streams or rivers), drains (existing or proposed), or wetlands (i.e. ponds, sloughs, lakes, or any series thereof), as the construction, alteration, modification, improvement, or impact to those may require a drainage permit(s) from the DWR. Specifically, a permitted surface drain, Surface Drain Permit No. 6270 (see attached), was identified to be within the proposed project area, in the SW ¼ of Section 13, Township 139 North, Range 52 West, Cass County. The DWR requests to be notified of any alterations, modifications, or improvements to this drain as a drainage permit may be required.

-Initial review indicates the project does not require a conditional or temporary permit for water appropriation. However, if surface water or groundwater will be diverted for construction of any future projects identified in the plan, a water permit will be required per North Dakota Century Code § 61-04-02. Please consult with the DWR Water Appropriation Division if you have any questions at (701) 328-2754 or appropinfo@nd.gov.

-There are no FEMA National Flood Insurance Program (NFIP) floodplains identified or mapped where the proposed project is to take place. No permits relative to the NFIP are likely required based on the current Flood Insurance Rate Map and State minimum standards. However, flood risk has been identified through the North Dakota Risk Assessment Mapservice and Base Level Engineering (BLE) (ndram.dwr.nd.gov). In the absence of FEMA NFIP data, BLE is often considered best available data and is recommended to be considered in the design process. The State of North Dakota has no formal NFIP permitting authority as all NFIP permitting decisions are considered by impacted NFIP participating communities, the community with zoning authority for the area in question. Please work directly with the local floodplain administrators of the zoning authorities impacted.

Thank you for the opportunity to provide review comments. Should you have further questions, please contact me at 701-328-4970 or kyrkoski@nd.gov

Sincerely,

A handwritten signature in black ink that reads "Kyle Yrkoski". The signature is written in a cursive style with a large initial "K" and a long, sweeping underline.

Kyle Yrkoski
Planner III

KY:dm/1570

SURFACE DRAIN PERMIT NO. 6270

WATER RESOURCE DISTRICT PERMIT NO. _____

This permit authorizes the permittee to drain a pond, slough, lake, sheetwater, or any series thereof, according to North Dakota Century Code (N.D.C.C.) § 61-32-03 and North Dakota Administrative Code (N.D.A.C.) ch. 89-02-01.

Name of Permittee: **Sinner Bros. & Pat Bresnahan
PO Box 549
Casselton, ND 58012**

Water Resource District: **Maple River Water Resource District (District)**

Feature to Be Drained: **Other**

Purpose of Drainage: **Agricultural Drainage**

Location of Drain (Department of Water Resources Location Map Attached):

Drain Alignment: **SE 1/4 of Section 13, Township 139 North, Range 052 West, Cass County**

Drain Outlet Location:

Stream: **Swan Creek**

Basin: **Devils Lake-Sheyenne**

Is the proposed drainage of statewide or interdistrict significance?: **NO**

Design Data:

Type of project:	Modification
Contributing watershed area (approximate):	500 Acres
Assessment Drain?:	False
If YES, Name of Drain:	
Type of modification(s) (if applicable):	Deepening
Drainage Method:	Gravity

Drainage Method Information:

Gravity Type:	Ditch
Length of Drain:	4000 Feet
Maximum Cut:	0.5 Feet
Bottom Width:	6 Feet
Side Slopes:	4:1 (Existing - estimated)

CONDITIONS TO SURFACE DRAIN PERMIT NO. 6270

1. According to N.D.A.C. § 89-02-01-09.11, the project and the rights granted under the permit are subject to modification to protect the public health, safety, and welfare.
2. According to N.D.A.C. § 89-02-01-09.11, construction must be completed within two years from the final approval date or the permit is void. The two-year period does not begin until any appeal is complete.
3. According to N.D.A.C. § 89-02-01-09.11, the Department of Water Resources or water resource district may attach other conditions to the permit if necessary. **If applicable, any other permit conditions adopted by the water resource district will be attached on separate sheets.**
4. This permit applies to the specific project and project location described and depicted in the permit application.
5. The Permittee, project owner, project sponsor, landowner, and any associated parties may be liable for all activity conducted and all effects caused by the construction, modification, and operation of the project as described in the application and this permit. Consequently, the receipt of this permit does not relieve the Permittee, project owner, project sponsor, landowner, or any associated parties from liability resulting from the construction, modification, or operation of the project approved under this permit.
6. If prior to or during construction items of substantial archeological value are discovered or a deposit of such items are disturbed, the Permittee shall cease construction activities in the area so affected. The Department of Water Resources must be promptly notified of the discovery and construction must not resume until the Department of Water Resources gives written permission.
7. The Permittee is responsible for obtaining any other local, state, or federal permits or approvals that may be necessary prior to construction.

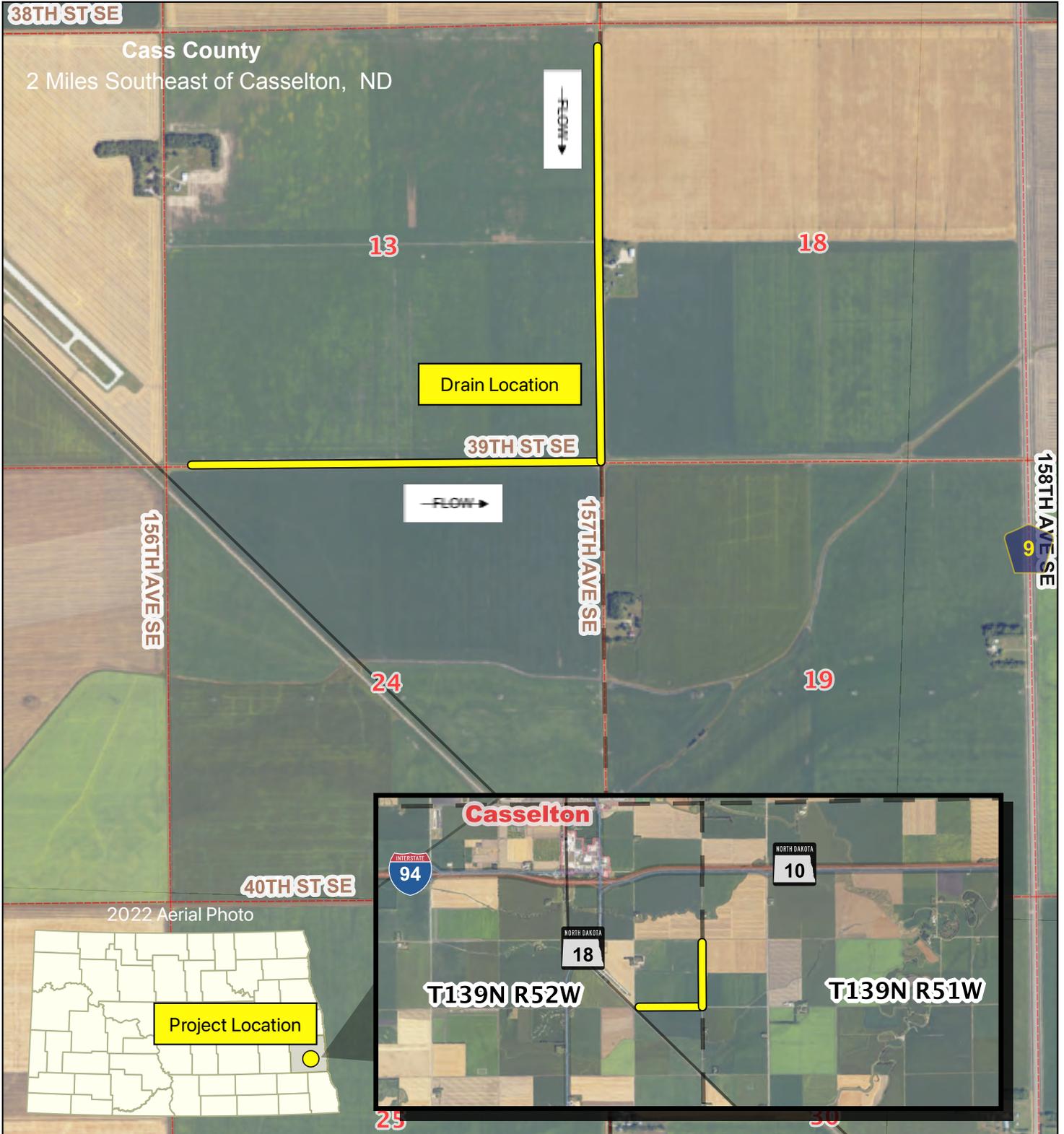
I, the undersigned, am approving this application for surface drainage according to N.D.C.C. § 61-32-03 on behalf of the water resource district I represent. I acknowledge that the water resource district has reviewed this application as required by N.D.C.C. § 61-32-03 and N.D.A.C. § 89-02-01.09.1 and that the water resource district has considered the evaluation factors listed in N.D.A.C. § 89-02-01-09.2. I acknowledge that I may attach conditions to this permit and must notify the applicant of his or her responsibilities to comply with the conditions stated in this permit.

Signature: M. H. Hennings
Chair or Secretary of Water Resource District

Approval Date: April 4, 2024

NOTES:

- This approved permit must be forwarded to the Department of Water Resources for record keeping.
- The water resource district may attach additional conditions to this permit approval if necessary.
- This permit document is not final until signed and dated by a water resource district representative.



Drain Permit Application No. 6270
Sinner Bros. & Pat Bresnahan
Drains



Section 13, T139N, R52W, Cass County

Date: 9/11/2023
Prepared by: CWN

EVALUATION OF SURFACE DRAIN APPLICATIONS

According to North Dakota Administrative Code (N.D.A.C.) Section 89-02-01-09.1, water resource districts are required to consider several factors listed in N.D.A.C. Section 89-02-01-09.2 when evaluating an application to drain. This evaluation sheet is provided as a courtesy to your water resource district to ensure the factors below are considered in your review of this application.

89-02-01-09.2. Evaluation of applications – Factors considered. All applications to drain must consider the following factors:

1. The water volume proposed to be drained and its impact upon the watercourse into which it will be drained.

See attached responses to items 1-8.

2. Adverse effects that may occur to downstream landowners. This factor is limited to the project's hydrologic effects, such as erosion, flood duration, sustained flow impacts, and downstream water control device operation impacts.

3. The engineering design and other physical aspects of the drain.

4. The project's impact on flooding problems in the project watershed.

5. The project's impact on ponds, sloughs, streams, or lakes having recognized fish and wildlife values.

6. The project's impact on agricultural lands.

7. Whether easements are required.

8. Other factors unique to the project.

APPLICATION FOR SURFACE DRAIN No. 6270

North Dakota Administrative Code Section 89-02-01-09.2 Evaluation of Applications – Factors Considered

Water Resource District: Maple River Water Resource District
Assessment Drain? No **If Yes, Name:**

1. The water volume proposed to be drained and its impact upon the watercourse into which it will be drained.

The project outlets into the upstream end of a culvert in the Southeast corner of Section 13, the culvert crossing under 157th Ave SE and the downstream channel underwent an improvement in 2022 that lowered the culvert and channel inverts. The watershed contributing to the culvert remains unchanged under the project conditions and conveys approximately 43 cfs during a 10-year design event. As the project does not propose any changes or increases to the watershed or the crossing sizes, a notable change in volume conveyance capacity is not anticipated. Therefore, the proposed project will not have significant impacts on downstream watercourses.

2. Adverse effects that may occur to downstream landowners. This factor is limited to the project's hydrologic effects, such as erosion, flood duration, sustained flows impacts, and downstream water control device operation impacts.

The proposed changes along the project extents will not materially change the hydrologic characteristics of the area. Flows out of watershed are not expected to increase and downstream watercourses, the Durbin-Everst Channel that outlets into Swan Creek, have adequate conveyance capacities.

3. The engineering design and other physical aspects of the drain.

The project consists of a regrade and cleanout of the existing roadside channel. The natural drainage channel consists of roughly a 6 ft bottom width and 4H:1V side slopes with a channel slope of 0.04%. The project's purpose is to maintain positive drainage along the extents and remove high spots to prevent water from pooling along the channel.

4. The project's impact on flooding problems in the project watershed.

The current channel has an inconsistent slope with high spots that hold water during large storm events, the purpose of the project is to maintain positive drainage along the project extents and to improve conveyance of sheet flow for the purpose of agricultural production and protection of property. Thus, the project will reduce flooding impacts in the project watershed which will result in positive benefits to the project watershed.

5. The project's impact on ponds, sloughs, streams, or lakes having recognized fish and wildlife values.

There are no ponds, sloughs, streams, or lakes along the project extents. The project does not have significant impacts on aquatic or wildlife resources.

6. The project's impact on agricultural lands.

The main purpose of the project is to provide improved drainage for agricultural land. The drainage provided by the project will have a positive impact on agricultural lands.

7. Whether easements are required.

The permittee is also the owner of the property and therefore additional easements are not necessary to complete construction of the project.

8. Other factors unique to the project.

None.

February 14, 2024

Carol Harbeke Lewis, Secretary
Maple River Water Resource District
Cass County Highway Department
1201 Main Ave W,
West Fargo, ND 58078

RE: Surface Drain Permit Application No. 6270

Dear Ms. Carol Harbeke Lewis:

The Department of Water Resources (DWR) has reviewed the enclosed Surface Drain Application No. 6270 (Application), submitted by Sinner Bros. & Pat Bresnahan. The surface drain is located within the Section 13, Township 139 North, Range 52 West, Everest Township, Cass County.

The DWR initially determined the Application “may be” drainage of statewide or interdistrict significance. Consequently, a solicitation of views (SOV) regarding the Application was sent according to REG-2020-3 section 3.1.3.8. The SOV and all comments received are enclosed.

Upon review, the DWR has determined that the proposed drainage under this Application is **not** drainage of statewide or interdistrict significance (see technical memorandum and project map enclosed). Therefore, the DWR is referring the Application to the Maple River Water Resource District (District) for review as required under North Dakota Century Code § 61-32-03 and North Dakota Administrative Code (N.D.A.C.) § 89-02-01-08.

As required under N.D.A.C. ch. 89-02-01, the District must consider the factors in the “Evaluation of Surface Drain Applications” (enclosed). The “Permit for Surface Drain” and its attached conditions (enclosed) must be signed and dated as part of an approved permit. **N.D.A.C. § 89-02-01-09.1(2)(c) requires that written notice of the District’s decision on the Application, whether approved or denied, be provided to all parties of record, anyone who has requested in writing to be notified, and the DWR.** If the District should have any information that the project has changed or would cause additional drainage, such information must be forwarded to the DWR for review prior to the District’s action on the Application.

Please contact me at gllarson@nd.gov or 701-328-4958 if you have any questions concerning this correspondence.

Sincerely,



/1063

Enclosures: Draft permit document – Surface Drain Permit No. 6270
DWR Permit No. 6270 Map
Evaluation of Surface Drain Applications (N.D.A.C. Section 89-02-01- 09.2)
ND DEQ Construction and Environmental Disturbance Requirements
Other Potential, Local, State, and Federal Water Regulations document
DWR Technical Memorandum - Statewide Determination
DWR Solicitation of Views (Exhibit 1)
Solicitation of Views Responses (Exhibit 2)
Surface Drain Application No. 6270 Materials

Cc (Emailed only): NRCS - State Office - Jennifer Vetter and Christi Fisher
NRCS - Barnes, Traill, Steele or Cass County CDU - Bobbie Ostrom
USACE - Regulatory Office
N.D. DWR, Planning Division - Beth Nangare and Abigail Franklund
N.D. DWR, Water Development Division - Sindhuja S.Pillai-Grinolds
N.D. Dept. of Environmental Quality, Division of Water Quality - Peter Wax
N.D. Dept. of Game and Fish - Bruce Kreft
Durbin Township - Keith Gohdes
Everest Township - Caryn Weber

OTHER POTENTIAL LOCAL, STATE, AND FEDERAL WATER REGULATIONS AND CONSIDERATIONS

The North Dakota Department of Water Resources (DWR) manages several areas of regulatory requirements regarding North Dakota's water resources. However, the DWR's regulatory requirements are only a subset of the regulatory requirements or considerations a project may have with respect to water resources regulation and management. Below is a list developed by the DWR of known regulatory considerations for water resource projects. This list is not intended to be all-inclusive and is only provided as general guidance.

STATE AGENCIES

Department of Water Resources (DWR)

- Construction permitting for dams, dikes, and other water control devices
 - Drainage permitting for surface drainage projects
 - Permitting for projects within the ordinary high water mark of North Dakota's navigable rivers and lakes (i.e., sovereign lands)
 - Water use permitting for consumptive and other water uses
- » Contact DWR at (701) 328-2750 or dwr@nd.gov
- » Website: <https://www.dwr.nd.gov/>

North Dakota Department of Environmental Quality (DEQ)

- 401 permitting and other water quality regulations and considerations
- » Contact DEQ's Water Quality Division at (701) 328-5210 or deq@nd.gov
- » Website: <https://deq.nd.gov/WQ/>

North Dakota Department of Transportation (NDDOT)

- Authority and permitting for water or drainage related activities within NDDOT rights-of-way
- » Website: <https://www.dot.nd.gov/district/index.htm>

North Dakota Game and Fish (NDG&F)

- Invasive species and threatened and endangered species considerations
- » Contact NDG&F's Conservation and Communications Division at (701) 328-6311
- » Website: <https://gf.nd.gov/wildlife>

LOCAL ENTITIES OR POLITICAL SUBDIVISIONS

Water Resource Districts' Authorities Over Water Management

- » Website: https://www.dwr.nd.gov/info_edu/water_links/nd_resource_boards.html

Floodplain Management Regulations and Permitting

- » Website: https://www.dwr.nd.gov/reg_approp/FloodplainManagement/

Zoning Regulations and Permitting by Political Subdivisions (i.e., county, township, city)

Road Right-of-Way Regulations and Permissions by Political Subdivisions

FEDERAL AGENCIES

U.S. Army Corps of Engineers North Dakota Regulatory Office (USACE ND)

- 404 permitting and authorizations for placement of fill in Waters of the United States
- » Contact USACE ND at (701) 255-0015 or CENWO-OD-RND@usace.army.mil
- » Website: <https://www.nwo.usace.army.mil/Missions/Regulatory-Program/North-Dakota/>

U.S. Fish and Wildlife Service (USFWS)

- Wetland easement regulations and considerations
 - Federally listed Threatened and Endangered species considerations
- » Contact USFWS at (701) 250-4481 or ndfieldoffice@fws.gov
- » Website: <https://www.fws.gov/northdakotafieldoffice/>

National Resource Conservation Service (NRCS)

- Farm program compliance regulations and considerations
- » Contact NRCS State office at (701) 530-2000
- » Local NRCS: <https://www.nrcs.usda.gov/wps/portal/nrcs/main/nd/contact/local/>
- » Website: <https://www.nrcs.usda.gov/wps/portal/nrcs/site/nd/home/>

Construction and Environmental Disturbance Requirements

The following are the minimum requirements of the North Dakota Department of Environmental Quality for projects that involve construction or environmental disturbance in or near waters of the State of North Dakota. They ensure that minimal environmental degradation occurs as a result of construction or related work which has the potential to affect waters of the state. All projects must be constructed to minimize the loss of soil, vegetative cover, and pollutants (chemical or biological) from a site.

Soils

Prevent the erosion of soil and sediment loss using erosion and sediment controls. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, and land resources must be protected against compaction, vegetation loss, and unnecessary damage.

Surface Waters

All construction must be managed to minimize impacts to aquatic systems. Follow safe storage and handling procedures to prevent the contamination of water from fuel spills, lubricants, and chemicals. Stream bank and stream bed disturbances must be controlled to minimize silt movement, nutrient upsurges, plant dislocations, and any physical, chemical, or biological disruption. The use of pesticides or herbicides in or near surface waters is allowed under the Department's pesticide application permit with notification to the Department.

Fill Material

Any fill material placed below the ordinary high-water mark must be free of topsoil, decomposable materials, and persistent synthetic organic compounds; including, but not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing of fill materials. All temporary fill must be removed. Debris and solid wastes must be properly disposed or recycled. Impacted areas must be restored to near original condition.

TECHNICAL MEMORANDUM

DATE: **February 13, 2024**

TO: Matt Lindsay, P.E., Engineering and Permitting Section Manager

FROM: Garrett Larson, Water Resource Engineer

SUBJECT: **Application for Surface Drain No. 6270 Sinner Bros. & Pat Bresnahan**

In accordance with Department of Water Resources (DWR) Policy No. REG-2020-3, Section 3.1.3.8., the DWR sent a solicitation of views (SOV) to several entities, regarding Surface Drain Application No. 6270 submitted by Sinner Bros. & Bresnahan and Pat Bresnahan received by the DWR on September 8, 2023 (see Certificate of Service for SOV, Exhibit 1, and DWR Technical Memo, Exhibit 2).

In response to the SOV, Maple River Water Resource District, Everest Township DEQ, and DWR Planning Division provided the following comments (see Exhibit 3 for copies of SOV responses received by the DWR):

- The Maple River WRD commented, “The Maple River Water Resource District does not have any comments at this time and will review in detail and process the permit if the state finds the project “not of statewide or interdistrict significance.”
- Everest Township commented, “I am writing in response to the Solicitation of Views for Drain Application No. 6270, the Sinner-Bresnahan Drain proposed in Everest Township, Cass County, North Dakota. As the application is being processed and reviewed by applicable water resource agencies or districts, Everest Township has no objection to the project proceeding as proposed.
- The DEQ commented, “A construction activity that disturbs an acre or more (cumulatively) is required to obtain a Construction General Permit from the department...”
- The DWR Planning Division commented, “... we have not received a cost-share application for the subject project.”

Based on review of the project and SOV responses received, **I recommend the Application be determined not to be drainage of statewide or interdistrict significance.** Additionally, I have **not** found any rationale to attach any special conditions to the draft permit that would otherwise mitigate the necessity, benefit, or purpose for classifying the application as drainage of statewide or interdistrict significance.

SIDE SLOPES

According to the Application, the side slopes of the drain will not be changed once the project is complete. An estimate of the existing side slopes was found using QGIS and LiDAR data. The LiDAR

data used was the James River QL2, which is available on the DWR MapServices website. Based on this data, the estimated existing side slopes are 4:1.

DWR RECOMMENDATIONS

Although this Application has been determined not to be drainage of statewide or interdistrict significance, the DWR routinely provides recommendations to water resource districts, whether providing specific recommendations according to N.D.A.C. § 89-02-01-08, or providing general recommendations, regarding permit applications received. Therefore, I recommend the District take into consideration the following when reviewing this Application:

- I recommend the District contact the DEQ concerning their comments on the proposed project. (see Exhibit 4)
- I recommend the District contact the USACE concerning their comments on the proposed project.



Garrett Larson, Water Resource Engineer

IN THE MATTER OF:

Surface Drain Application No. 6270
SOLICITATION OF VIEWS

CERTIFICATE OF SERVICE

On November 16, 2023, I served the SOLICITATION OF VIEWS for Application for Surface Drain No. 6270 by email to the following recipients:

Maple River Water Resource District
Carol Harbeke Lewis
LewisC@casscountynynd.gov

Everest Township
Caryn Weber
ETNDCW@outlook.com

N.D. Department of Water Resources
Water Development Division
Sindhuja S.Pillai-Grinolds
spillai@nd.gov

N.D. Department of Water Resources
Planning Division
Beth Nangare: bngangare@nd.gov
Abigail Franklund: afranklund@nd.gov

N.D. Department of Game and Fish
Bruce Kreft
bkreft@nd.gov

U.S. Army Corps of Engineers
N.D. Regulatory Office
cenwo-od-rnd@usace.army.mil

N.D. Department of Environmental Quality
Peter Wax
pwax@nd.gov

U.S. Department of Agriculture
National Resources Conservation Service
N.D. State Office
Jennifer Vetter: jennifer.vetter@nd.usda.gov
Christi Fisher: christi.fisher@nd.usda.gov
CDU
Barnes, Traill, Steele, or Cass County
Bobbie Ostrom: bobbie.ostrom@usday.gov

Durbin Township
Keith Gohdes
kgohdes67@gmail.com

1. Electronic copies of this solicitation of views, including a cover letter, technical memorandum, map, and the application materials received, were emailed to all applicable parties per DWR Policy No. REG-2020-3.
2. Electronic copies of all application documents are available for download via the link provided in the solicitation of views email. The link will expire in 30 days.



Department of Water Resources
1200 Memorial Highway
Bismarck, ND 58504

TECHNICAL MEMORANDUM

DATE: **November 16, 2023**

TO: Matt Lindsay, P.E., Engineering and Permitting Section Manager

FROM: Garrett Larson, Water Resource Engineer

SUBJECT: **Application for Surface Drain No. 6270
Sinner Bros. & Pat Bresnahan**

The Department of Water Resources (DWR) received the following surface drain application:

Application Number: 6270

Application Received Date: September 8, 2023

Applicant: Sinner Bros. & Bresnahan, Pat Bresnahan

Project Location: Section 13, T139N, R52W, Cass County

New Drain Construction or Modification to Existing Drain: Modification of Existing Drain

Purpose of Drainage: Agricultural/Flood Relief

Feature to be Drained: Sheetwater/Overland Flow

PROJECT BACKGROUND

The purpose of the project is to improve ditches along township roads 39th St SE and 157th Ave SE. The improvements to the ditches include increasing grade and deepening on the north side of the ditch along 39th St SE and the west side of the ditch along 157th Ave SE. The ditches then drain into a culvert that runs underneath 157th Ave SE. The sheetwater then will drain into the Durbin – Everest Channel.

PERMIT REQUIREMENT REVIEW

Is the contributing watershed area to the proposed drain 80 acres or more?

YES, this was determined with the methods described below.

How was the watershed area determined?

Using USGS StreamStats version 4.16.1.

What water feature(s) are proposed to be drained, per OSE Policy No. REG-2020-2?

- A ditch or pipe constructed, installed, or operated to drain by gravity a pond, slough, lake, or sheetwater, or any series thereof. (Section 3.3.1.1.) The project will drain sheetwater from the agriculture fields to multiply ditches.

STATEWIDE OR INTERDISTRICT SIGNIFICANCE REVIEW

The DWR performed its drainage of statewide or interdistrict significance review according to DWR Policy No. REG-2020-3 (REG-2020-3). Upon review of REG-2020-3, the drainage proposed under this Application does the following:

- Drainage affecting public infrastructure, such as roads, highways, or stream crossings. (Section 3.1.3.7) The project will add addition sheet water drainage to the township road culvert running east to west located on the north side of the intersection of 157th Ave SE and 39th St SE. The project will also impact the Everest Township road right-of-way.

Therefore, the proposed drainage under this Application MAY BE drainage of statewide or interdistrict significance. The Application will be processed according to REG-2020-3.

AF Franklund, Abigail V.
Re: Solicitation of Views - Surface Drain Permit Application No. 6270
To: Esonok, Courtney M. Cc: Menges, Ruth M.

10/20/21 10:58 AM
[Details](#)

Courtney,
No application for cost-share funding has been received for the subject project.

Abigail Franklund
Cost-Share Program Manager

701.328.4952 • afranklund@nd.gov • www.dwr.nd.gov

NORTH Dakota | Water Resources
Be Legendary.

701.328.2750 • dwr.nd.gov • 1200 Memorial Highway • Bismarck, ND 58504

Wax, Peter N.
RE: Solicitation of Views - Surface Drain Permit Application No. 6270
To: Evoniuk, Chantrel M.

Transmitted & Received

RE: DWR Permit Application No. 6270

Dear Ms. Evoniuk:

The ND Department of Environmental Quality (DEQ) appreciates the opportunity to comment on drains of potential statewide or interdistrict significance.

The following comments are based on supporting the quality of water as defined in the Standards of Quality of Water Quality of the State, North Dakota Administrative Code Chapter 33.1-16-02.1 (WQ-Standards) as intended under the ND Century Code 28-61-04. Any human activity that introduces a pollutant to waters of the state above the water quality criteria is a violation of the WQ standards. It is the owner of the project(s) responsibility to not violate the WQ Standards.

Comments:

- A construction activity that disturbs an acre or more (cumulatively) is required to obtain a Construction General Permit from the department and follow all requirements. https://deq.nd.gov/WQ2_NDPDES_Permits/7_Stormwater/stw.aspx.
- All equipment working in the drain that leaks of oil, fuel or coolant should be removed from the channel/drain until repaired, and
- Construction activities should be conducted to minimize the loss of soil, vegetative cover, and pollutants (chemical or biological) from a site.

Following are the minimum requirements of the North Dakota Department of Environmental Quality for projects that involve construction or environmental disturbance in or near waters of the State of North Dakota.

Soils

Prevent the erosion of soil and sediment loss using erosion and sediment controls. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, and land resources must be protected against compaction, vegetation loss, and unnecessary damage.

Surface Waters

All construction must be managed to minimize impacts to aquatic systems. Follow safe storage and handling procedures to prevent the contamination of water from fuel spills, lubricants, and chemicals. Stream bank and stream bed disturbances must be controlled to minimize silt movement, nutrient upsurges, plant dislocations, and any physical, chemicals, or biological disruption. The use of pesticides or herbicides in or near surface waters is allowed under the Department's pesticide application permit with notification to the Department.

Fill Material

Any fill material placed below the ordinary high-water mark must be free of topsoil, decomposable materials, and persistent synthetic organic compounds; including, but not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing of fill materials. All temporary fill must be removed. Debris and solid wastes must be properly disposed or recycled. Impacted areas must be restored to near original condition.

Peter N. Wax
Special Projects
Division of Water Quality

701.323.5268 • owq@dnr.nd.gov • dnr.nd.gov

CL Lewis, Carol
RE: Solicitation of Views - Surface Drain Permit Application No. 6270
To: Eversuk, Courtney M.

Thursday, 22. 2023 at 11:42 AM

***** CAUTION: This email originated from an outside source. Do not click links or open attachments unless you know they are safe.*****

Courtney,

The Maple River Water Resource District does not have any comments at this time and will review in detail and process the permit if the state finds the project "not of statewide or interdistrict significance."

Carol

Caryn Weber

Surface Drain Permit Application No. 6270 - Sinner-Bresnahan Drain
To: dnr.dsp@nd.gov

You don't often get email from em66@outlook.com. [Learn why this is important](#)

***** CAUTION: This email originated from an outside source. Do not click links or open attachments unless you know they are safe. *****

Dear Permitting Agency:

I am writing in response to the Solicitation of Views for Drain Application No. 6270, the Sinner-Bresnahan Drain proposed in Everest Township, Cass County, North Dakota.

As the application is being processed and reviewed by applicable water resource agencies or districts, Everest Township has no objection to the project proceeding as proposed.

Sincerely,

Caryn Weber
Everest Township, Chairman

15484 38th St SE
Durbin, ND 58559
701-373-1533



APPLICATION FOR SURFACE DRAIN
 NORTH DAKOTA DEPARTMENT OF WATER RESOURCES
 REGULATORY DIVISION
 SFN 2830 (2/2023)

Number
6270

(DWR USE ONLY)

Number

(WRD USE ONLY)

DEPARTMENT OF
WATER RESOURCES
USE ONLY

DATE RECEIVED

This application must be submitted to the North Dakota Department of Water Resources by mail to 1200 Memorial Highway, Bismarck, ND 58504-5262, by fax to (701) 328-3696, or by email to dwrregpermits@nd.gov. To be complete, this application must include the additional information listed in the instructions on page 3. For emergency drain permit applications, see instructions on page 4.

If you need any assistance, please contact the Regulatory Division at (701) 328-4956.

**** Additional Sheets May Be Attached If Necessary. ****

Water Resource District In Which Majority Of Project Watershed Is Located Maple River Water Resource District				
Location Of Drain (drain center line) (use separate sheet(s) if necessary)				
$\frac{1}{4}$ SW	Section 13	Township 139-N	Range 52-W	County Cass
$\frac{1}{4}$ SE	Section 13	Township 139-N	Range 52-W	County Cass
$\frac{1}{4}$ NE	Section 13	Township 139-N	Range 52-W	County Cass
Drain Outlet Location And Information				
$\frac{1}{4}$ SE	Section 13	Township 139-N	Range 52-W	County Cass
Where Does The Drain Outlet Discharge?				
<input checked="" type="checkbox"/> Road Ditch <input type="checkbox"/> Stream, River, Coulee, etc. <input type="checkbox"/> Assessment Drain <input type="checkbox"/> Private Drain <input type="checkbox"/> Pond, Slough, Or Lake <input type="checkbox"/> Other (please explain) _____				
Name Of Drain Or Water Body Where Drain Outlets (If applicable) Durbin-Everest Channel=Approximately 3/4 mile to the east.				
Purpose Of Drainage (mark all that apply)				
<input checked="" type="checkbox"/> Agricultural Drainage <input checked="" type="checkbox"/> Flood Relief <input type="checkbox"/> Emergency <input type="checkbox"/> Other (please explain) _____				
Feature To Be Drained (mark all that apply)				
<input type="checkbox"/> Pond, Slough, Lake, Or Any Series Thereof <input checked="" type="checkbox"/> Sheetwater/Overland Flow <input checked="" type="checkbox"/> Other (please explain) Improve ditch drainage, increase grade.				
If Draining A Pond, Slough, Lake Or Any Series Thereof, How Far Down Will You Drain Them?				
<input type="checkbox"/> Completely <input type="checkbox"/> Partially				
Design Data				
<input type="checkbox"/> New Drain Construction <input checked="" type="checkbox"/> Modification Of Existing Drain				
Approximate Watershed Area Contributing To Drain, if known (acres) 450-500 est.				
Is This An Assessment Drain?		If Yes, Please List Name Of Drain		
<input type="checkbox"/> Yes <input type="checkbox"/> No				
Type Of Modification To Existing Drain (If applicable)				
<input checked="" type="checkbox"/> Deepening <input type="checkbox"/> Widening <input type="checkbox"/> Extending <input type="checkbox"/> Rerouting <input type="checkbox"/> Other (please explain) _____				
Who Designed The Drain?				
<input checked="" type="checkbox"/> Self <input type="checkbox"/> Engineering Firm/Agency _____ <input checked="" type="checkbox"/> Other (please explain) SD Drain Software				

(continued on page 2)

Additional Project Details, Design Information, and Comments

Deepening township ditch to improve drainage. Many areas of field that have standing water after big rain events where water backs in but doesn't leave. Please see attached documents for more information.

Drainage Method

Gravity (See Section A) Pumping (See Section B) Placement Of Fill (See Section C)

(A) Gravity (if checked above)

Gravity Type (please fill appropriate fields below)

Ditch Pipe

Ditch		Length Of Drain (feet)	Maximum Cut (D) (feet)
		Approximately 4,000 ft.	0.5 ft. (6 inches)
		Bottom Width (B) (feet)	Side Slopes (S:1 foot)
		6 Feet	Won't change, see attached.

Pipe Diameter (feet)	Pipe Slope (feet per foot)
----------------------	----------------------------

(B) Pumping (if checked above)

Pumping Rate (gallons per minute)	Pumping Rate (cubic feet per second)
Pump Style <input type="checkbox"/> Movable <input type="checkbox"/> Fixed or Stationary	Pump Type <input type="checkbox"/> Submersible <input type="checkbox"/> Other _____

(C) Placement Of Fill (if checked above)

Fill Volume (cubic yards)

Other Information

Will The Drain Incorporate A Control Structure? Yes No

If Yes, Please Explain

Anticipated Construction Start Date ASAP	Anticipated Construction Completion Date ASAP plus 2 days weather permitting
---	---

Applicant's Certification

I, the undersigned, am applying for a permit as required under North Dakota Century Code (N.D.C.C.) § 61-32-03. I understand that I must comply with N.D.C.C. § 61-32-03 and North Dakota Administrative Code art. 89-02, and that I must adhere to any conditions required by the Water Resource District and Department of Water Resources as part of an approved permit for this application. Additionally, I acknowledge that my project is accurately described and depicted in this application as I intend to construct it. My signature below acknowledges that I have read and agree to these statements.

Affiliation To Proposed Drain
 Landowner Renter/Tenant Water Resource District/Agency Other _____

Applicant Name (if not an individual, please list organization name)

Sinner Bros. & Bresnahan Pat Bresnahan

Address PO Box 549	City Casselton	State ND	ZIP Code 58012
-----------------------	-------------------	-------------	-------------------

Telephone Number 701-347-3105	Cell Phone Number 701-361-9635	Email Address stpatrick@sb-b.com
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Applicant Signature
SB+B by *Patricia A. Bresnahan* Date
9-7-23

Landowner Name (print) (if not the applicant)
Sinner Bresnahan Land Partnership, LLP

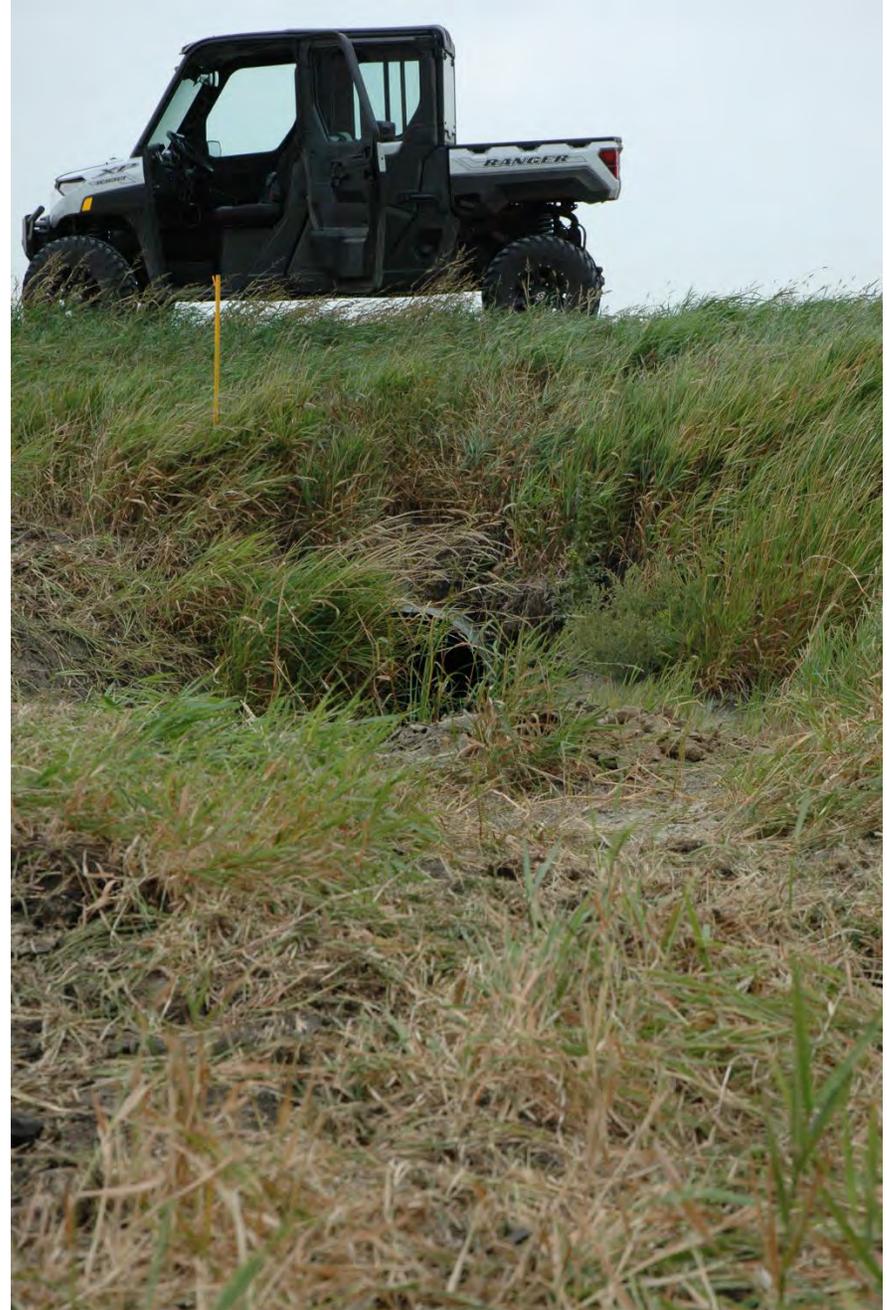
Landowner Signature (if not the applicant)
P. Sinner Date
9-7-23

This photo was taken $\frac{3}{4}$ of a mile east of the previously lowered culvert where the ditch empties into the Durbin-Everest Channel. This $\frac{3}{4}$ mile ditch was lowered from the culvert east to the Durbin-Everest Channel with a track-hoe by a commercial contractor. This previous work was done with approval from Durbin Township, Everest Township, adjacent farm operators and adjacent landowners.

There was adequate drop from the west side of this section to the Durbin Everest Channel to allow for these changes. Water volume was not impacted as culvert size was not changed.



These photograph shows the previously lowered culvert. Again, this culvert goes between Everest and Durbin Township, it was lowered because it's elevation restricted drainage. Both townships and adjacent interested parties were in approval. There was no change in culvert size, it was lowered approximately 8 inches.



These photos show the ditches west of the culvert and to the north of the culvert. These are the ditches that need to be lowered. We will not change the ditch slope on the road side of the ditches. The bottom of the ditch will be shifted a slight amount away from the road and the field side of the ditch will be reshaped to accommodate this change. Below shows the west ditch viewed from the culvert. We have cleaned the wash soil out of the bottom of the ditch and began reshaping the field side of the ditch. While cleaning the wash soil and surveying it is estimated that maximum depth change will be 6 inches and some areas needing very little soil removed. The east end of this ditch will have the bulk of the soil to be removed. This will get us closer to a 0.04% grade and should prevent standing water in the ditch.



The photo below shows the ditch going north from culvert. This ditch is lower and does not need as much dirt removed. The intent would be to re-survey and take out high spots and prevent water from sitting in the ditch. While it may need to be lowered, the amount is less than 3-4 inches.

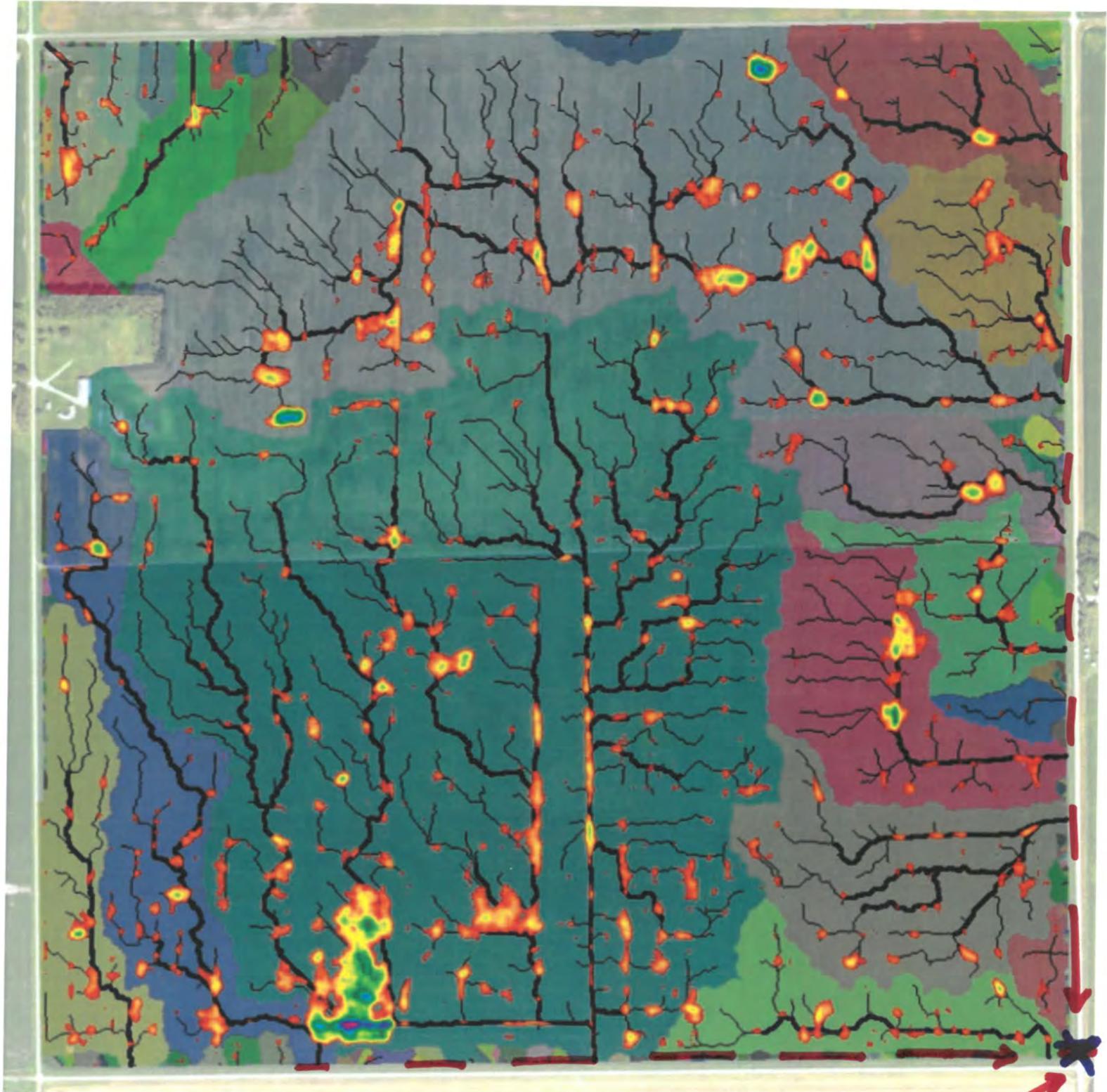


*green, cleaned/lowared 2 years ago *yellow = culvert + lowered 2 years ago

Blue = Durbin-Everest Channel

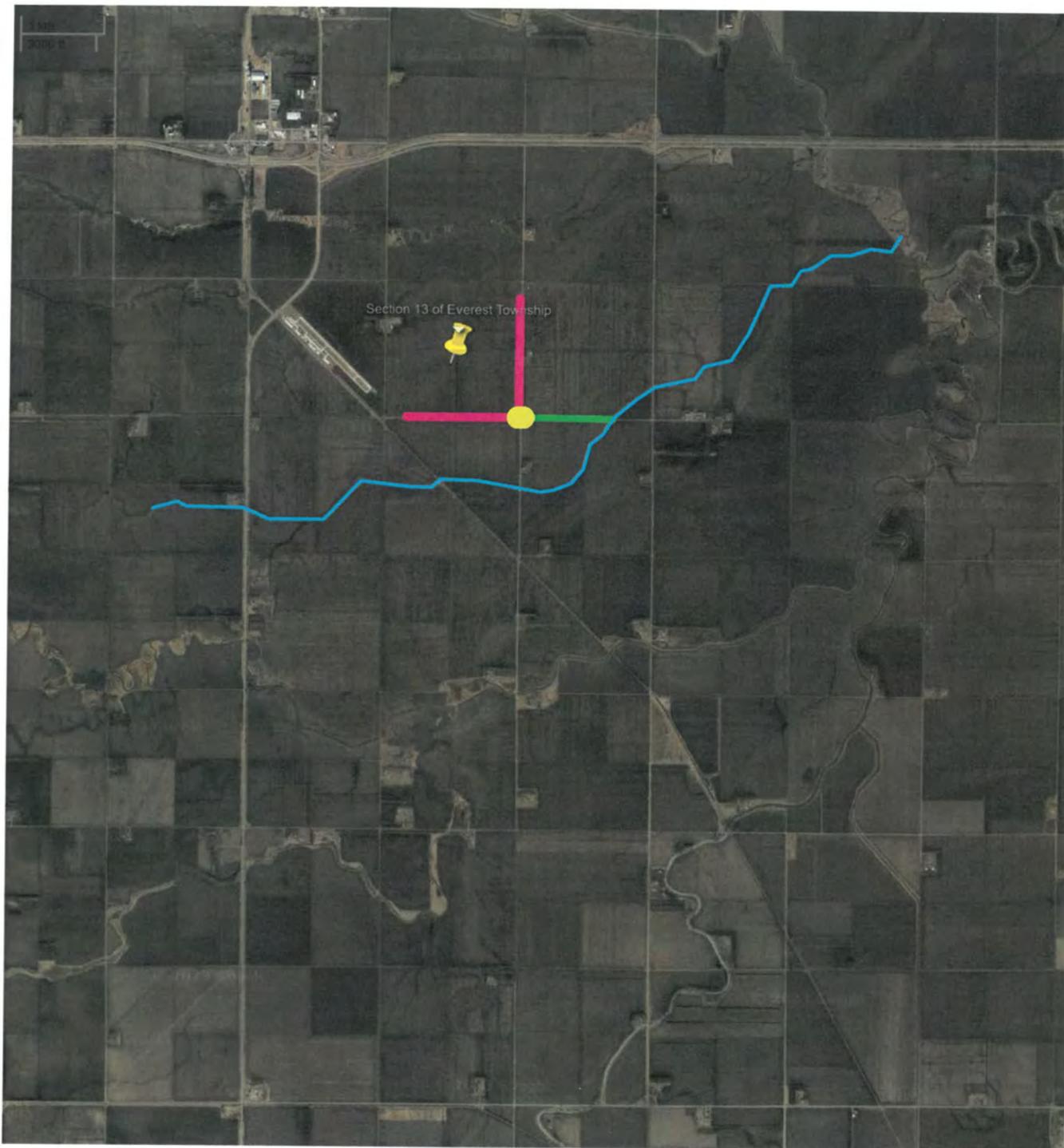
Pink = Project area





- exit culvert.
- Culvert lowered 2 years ago





Imagery ©2023, Report a map error (<https://www.google.com/maps/@46.8368276,-97.0933914,13z/data=!3m1!1e3!10m1!1e1!12b1?source=apiv3&rapsrc=apiv3>)

Airbus, CNES /

Airbus, Landsat /

Copernicus,

Maxar

AgTerra Technologies,

USDA/FPAC/GEO



Checking Project... Done

Getting Line 1741 Done

US&gl=US&mapclient=apiv3)

46.849156° N 97.075195° W

© AgTerra Technologies, Inc.

Appendix K: Community Engagement

Meeting Presentations and Minutes

Meeting	Date
Casselton Regional Airport Authority	May 2025
Everest Township Roadway Alternatives	3/31/2025
City of Casselton – Economic Development Committee	1/24/2025
Everest Township Open House	12/16/2024
Everest Township Chair	10/3/2024



Casselton Regional Airport

City of Casselton – January 24, 2025

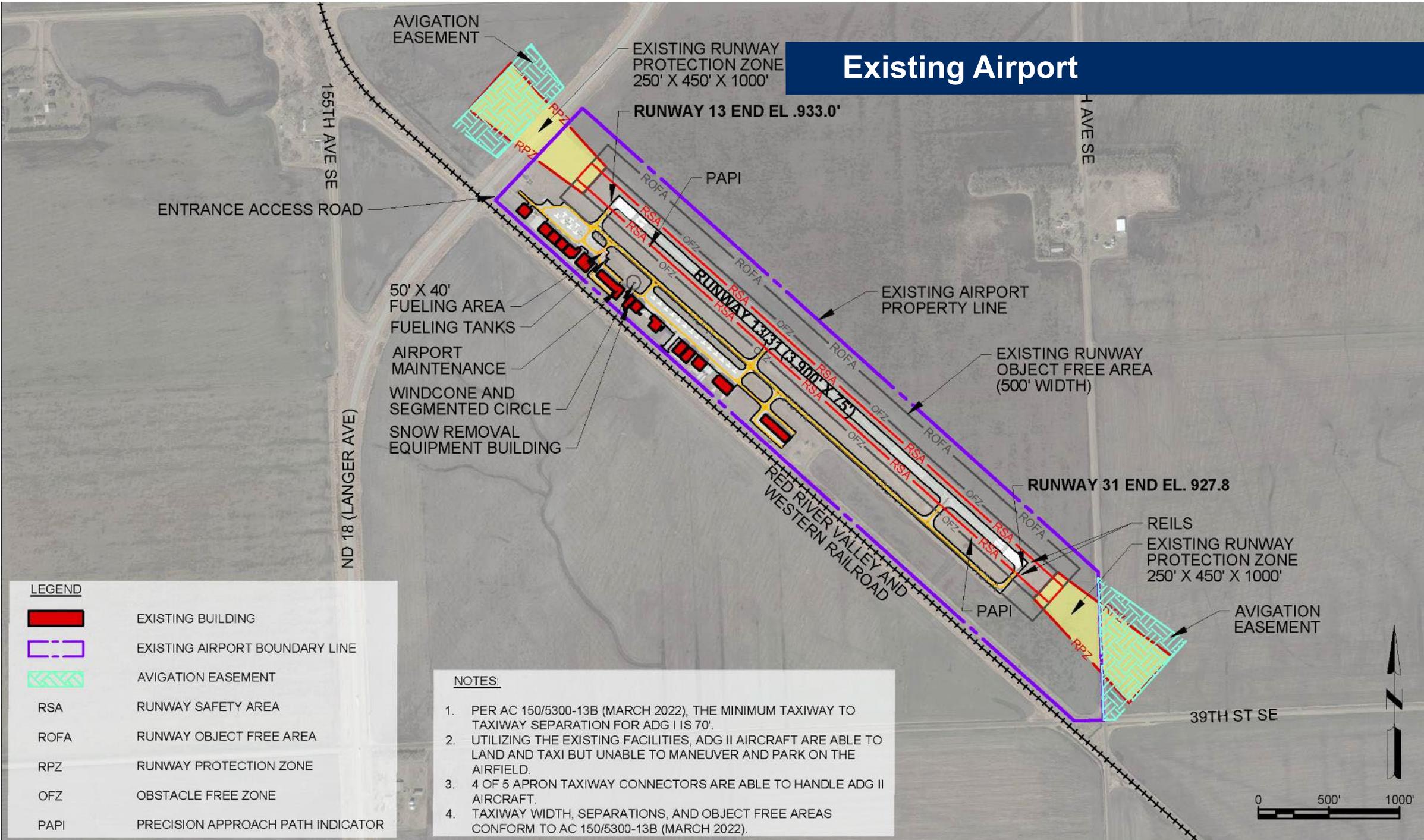


Who is the Casselton airport

- Made up of the city of Casselton and 7 townships
- Many active businesses
- 46 Based Aircraft
 - Recreational aircraft
 - Business aircraft
- Numerous transient operations
- Very active airport
 - Second only to Mandan in activity of similar airports
- This airport has been supported well by the community for over 40 years



Existing Airport



AVIGATION EASEMENT

156TH AVE SE

ENTRANCE ACCESS ROAD

ND 18 (LANGER AVE)

50' X 40' FUELING AREA

FUELING TANKS

AIRPORT MAINTENANCE

WINDCONE AND SEGMENTED CIRCLE

SNOW REMOVAL EQUIPMENT BUILDING

EXISTING RUNWAY PROTECTION ZONE 250' X 450' X 1000'

RUNWAY 13 END EL .933.0'

EXISTING AIRPORT PROPERTY LINE

EXISTING RUNWAY OBJECT FREE AREA (500' WIDTH)

RUNWAY 31 END EL. 927.8

REILS

EXISTING RUNWAY PROTECTION ZONE 250' X 450' X 1000'

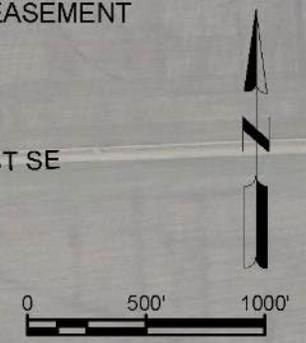
AVIGATION EASEMENT

39TH ST SE

LEGEND

	EXISTING BUILDING
	EXISTING AIRPORT BOUNDARY LINE
	AVIGATION EASEMENT
RSA	RUNWAY SAFETY AREA
ROFA	RUNWAY OBJECT FREE AREA
RPZ	RUNWAY PROTECTION ZONE
OFZ	OBSTACLE FREE ZONE
PAPI	PRECISION APPROACH PATH INDICATOR

- NOTES:**
1. PER AC 150/5300-13B (MARCH 2022), THE MINIMUM TAXIWAY TO TAXIWAY SEPARATION FOR ADG II IS 70'.
 2. UTILIZING THE EXISTING FACILITIES, ADG II AIRCRAFT ARE ABLE TO LAND AND TAXI BUT UNABLE TO MANEUVER AND PARK ON THE AIRFIELD.
 3. 4 OF 5 APRON TAXIWAY CONNECTORS ARE ABLE TO HANDLE ADG II AIRCRAFT.
 4. TAXIWAY WIDTH, SEPARATIONS, AND OBJECT FREE AREAS CONFORM TO AC 150/5300-13B (MARCH 2022).



Current Activity at the Airport

- Ag sprayers (based at Casselton)
- Local businesses (based at Casselton)
- Recreation (based at Casselton)
- Small corporate jets Government (transient)
- Parts arriving for Casselton businesses (transient)
- Diversions for fog from Fargo, including small cargo (transient)

Environmental Assessment Process

- **The Airport hired Mead & Hunt to draft an Environmental Assessment for the preferred alternative from the 2020 Master Plan.**
- **An EA takes a deeper look at:**
 - justification for the project
 - potential impacts of a project
 - feedback from the community
- **Considers certain environmental categories as directed by FAA guidance**

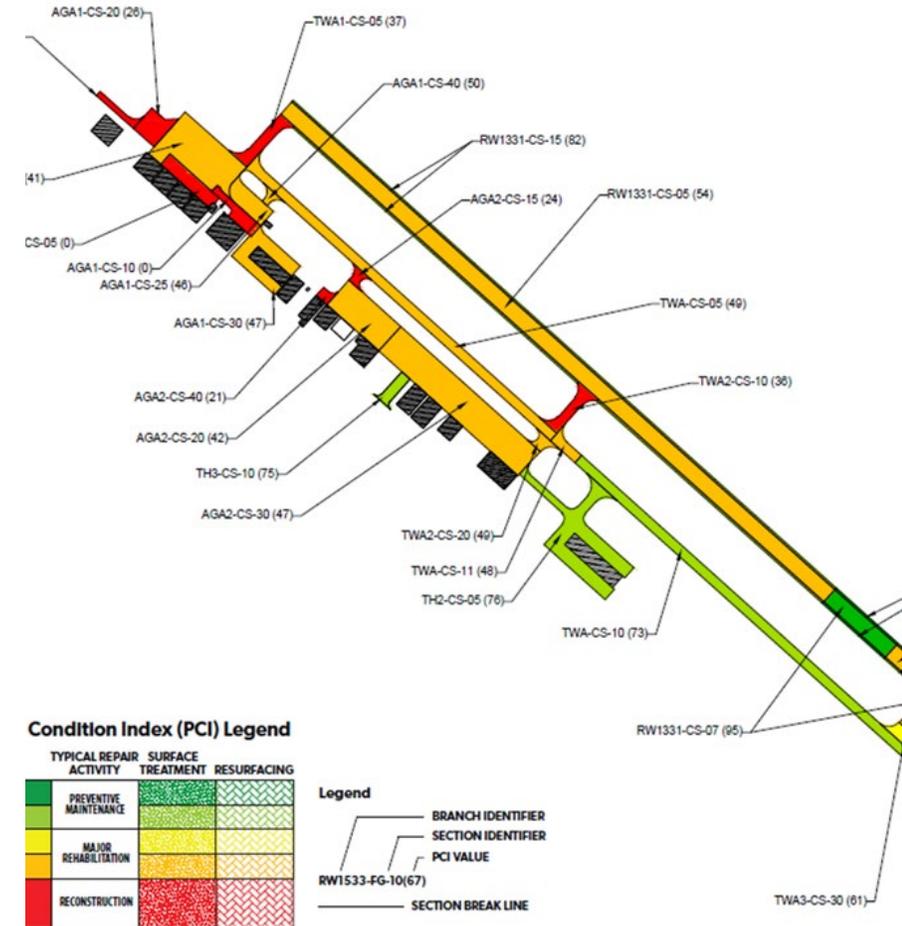
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- The majority of Airport pavement is over 30 years old
- Although multiple rehabilitation projects have occurred since construction, pavement throughout the Airport is now in poor condition and nearing the end of its service life.
- A runway rehabilitation done in 2023 will maintain the surface in usable condition until the runway project

Because reconstruction of the runway and parallel taxiway is necessary, improvements should be designed to meet standards for existing and projected users.



Faulting on Taxiway Connector



2021 PCI Map of Airport Pavements

Airport Users and Standards



Critical Aircraft:

The aircraft with regular use at an airport that has the most demanding operational characteristics. This is defined by the two aircraft classifications described below.

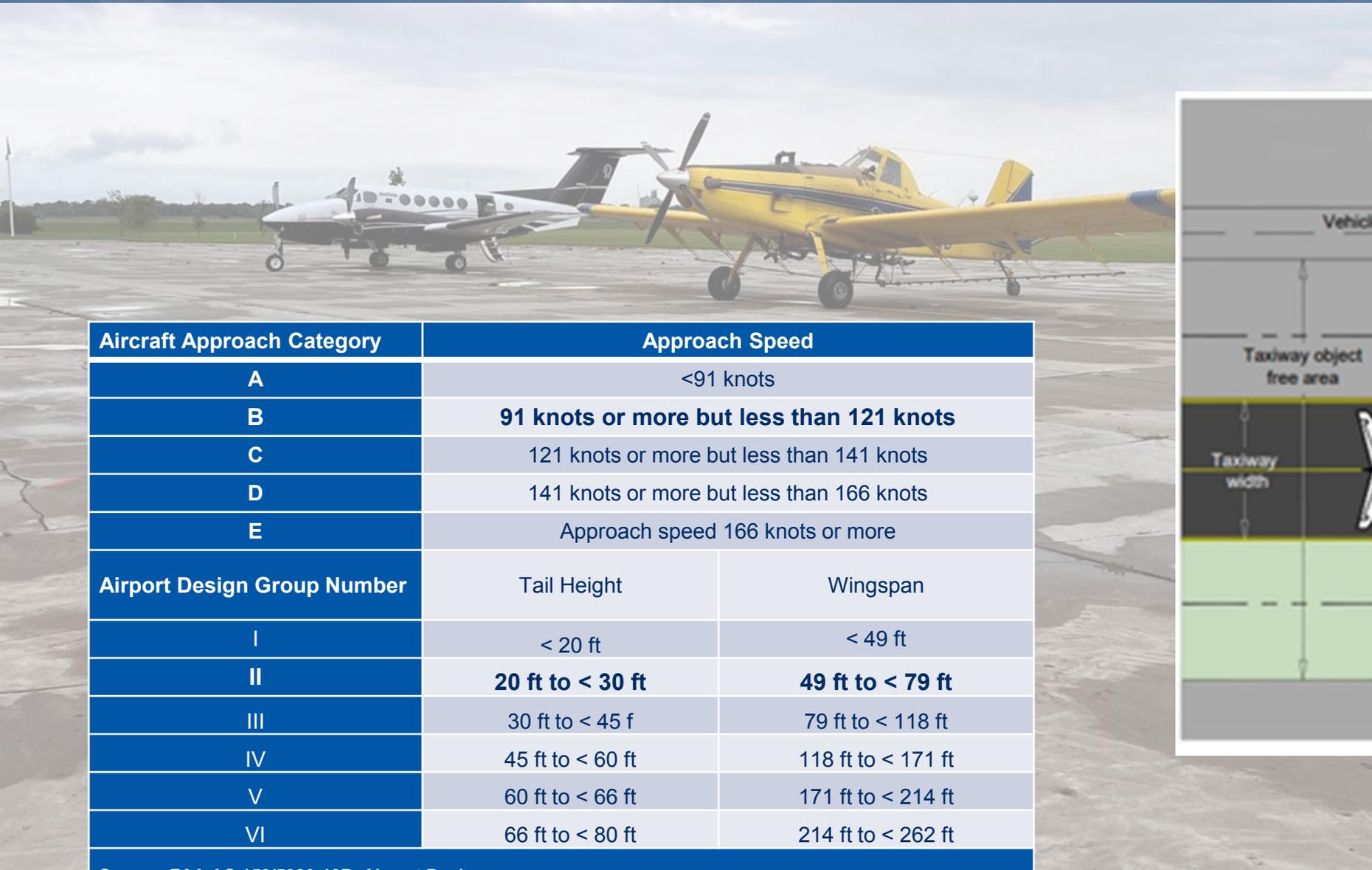
Aircraft Approach Category (AAC):

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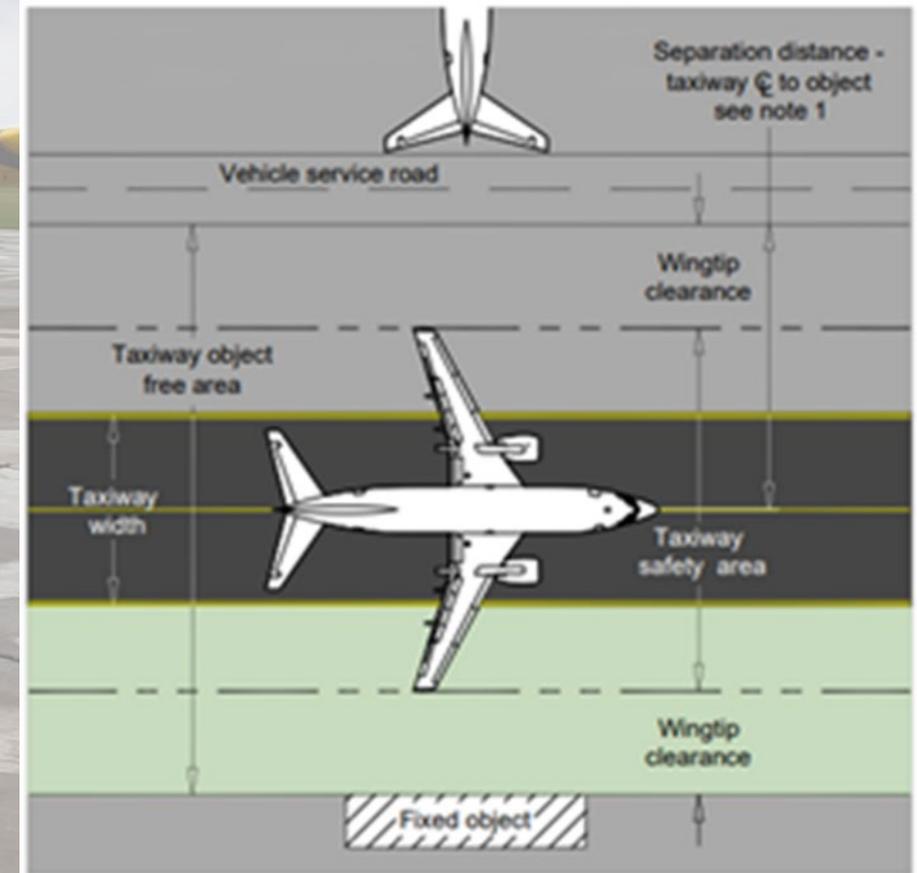
Airplane Design Group (ADG):

This second standard is based on the wingspan and tail height of the critical aircraft

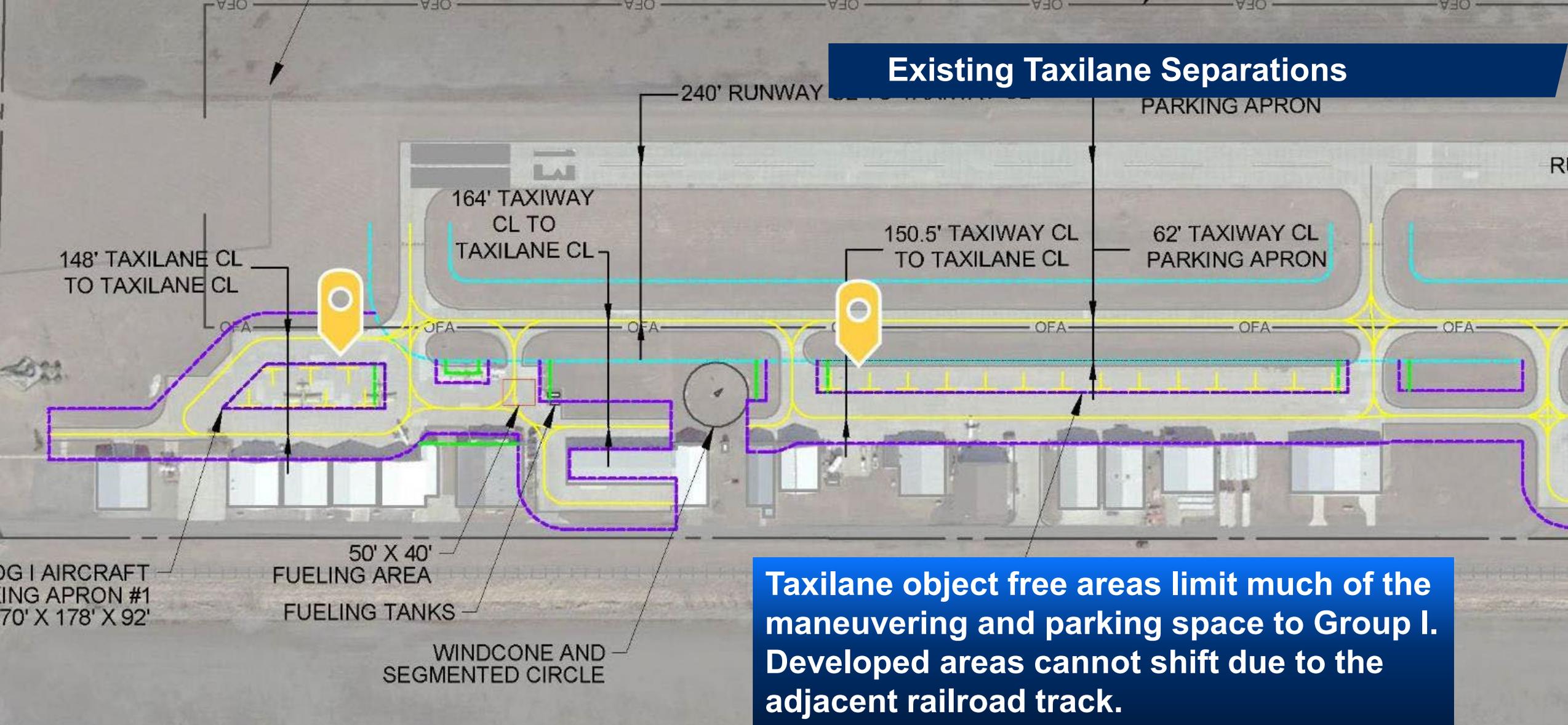
Airport Users and Standards



Aircraft Approach Category	Approach Speed	
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B	91 knots or more but less than 121 knots	
C	121 knots or more but less than 141 knots	
D	141 knots or more but less than 166 knots	
E	Approach speed 166 knots or more	
Airport Design Group Number	Tail Height	Wingspan
I	< 20 ft	< 49 ft
II	20 ft to < 30 ft	49 ft to < 79 ft
III	30 ft to < 45 f	79 ft to < 118 ft
IV	45 ft to < 60 ft	118 ft to < 171 ft
V	60 ft to < 66 ft	171 ft to < 214 ft
VI	66 ft to < 80 ft	214 ft to < 262 ft



Existing Taxilane Separations



Taxilane object free areas limit much of the maneuvering and parking space to Group I. Developed areas cannot shift due to the adjacent railroad track.

ND

- TAXILANE/TAXIWAY CENTERLINE
- ADG I TAXIWAY/TAXILANE OBJECT FREE AREA (79' WIDTH)

NOTES:

- PER AC 150/5300-13B (MARCH 2022), THE MINIMUM TAXIWAY TO TAXIWAY SEPARATION FOR ADG I IS 70'.
- UTILIZING THE EXISTING FACILITIES, ADG II AIRCRAFT ARE ABLE TO

Future Airport Users

Aircraft Type	Maximum Takeoff Weight (MTOW)	Wingspan
Beech King Air 300	14,000 lbs.	58 feet
Air Tractor 802	16,000 lbs.	59 feet
Cessna Citation II	14,800 lbs.	52 feet
Cessna CJ4	17,110 lbs.	51 feet
Embraer Phenom 300	17,968 lbs.	52 feet

Larger ag sprayers and many corporate users remain in the B-II category, but maximum takeoff weights are heavier than the current (small) designation, which is up to 12,500 lbs.

Air Tractor 802



Cessna Citation XL

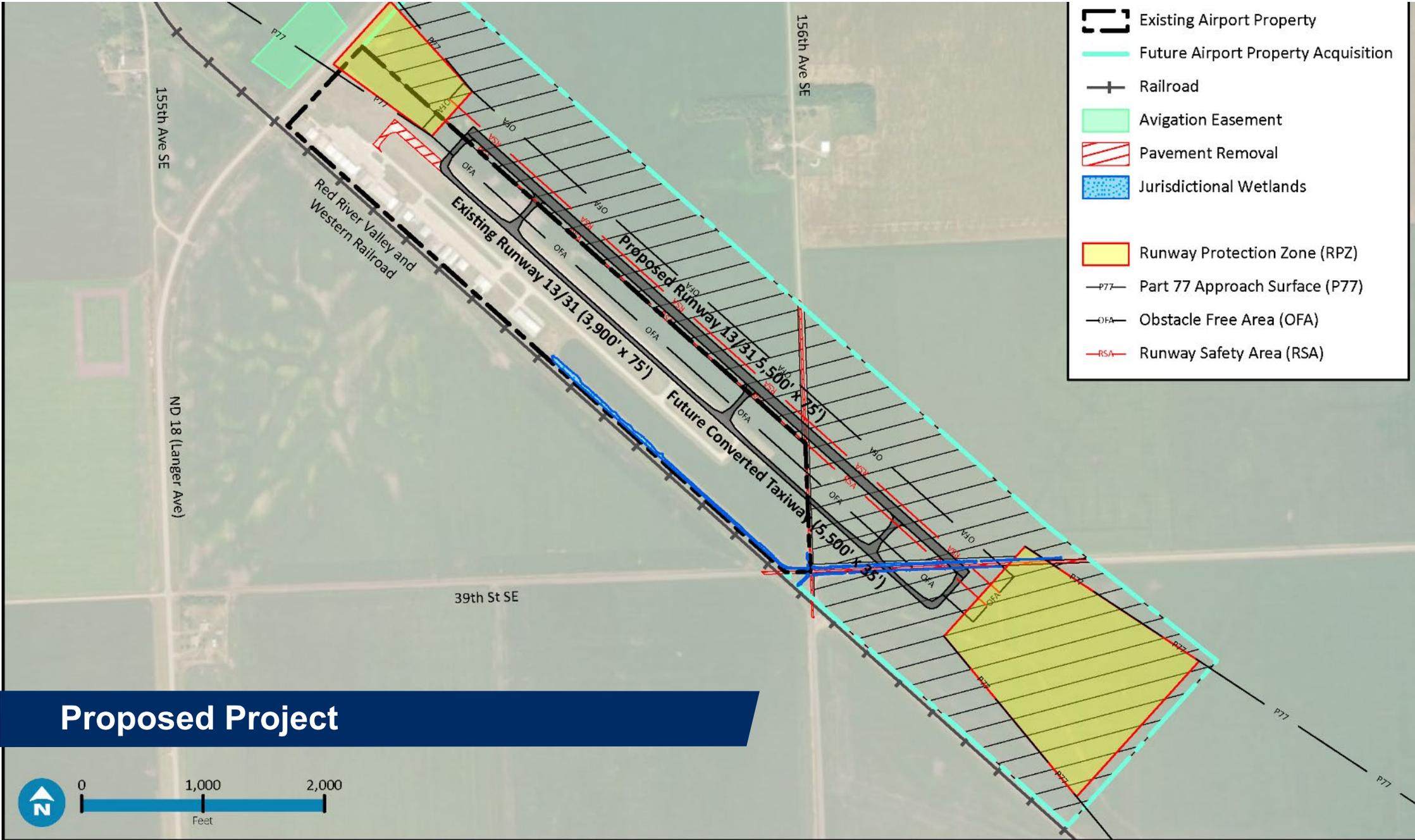


Runway Length

Runway 13/31 is currently 3,900 feet long, which aligns with FAA recommendations for runways serving aircraft with a Maximum Takeoff Weight of 12,500 pounds or less with fewer than 10 passenger seats

Guidance for future critical aircraft

Airport and Runway Data	
Airport Elevation	933 feet MSL
Mean Daily Maximum Temperature of Hottest Month	82.3°F
Maximum Difference in Runway Centerline Elevation	5 feet (+50 feet)
Runway Condition	Wet and Slippery Runways
Aircraft Classification	Recommended Runway Length
<i>Large Airplanes more than 12,500 Pounds but less than 60,000 Pounds</i>	
75 percent of fleet at 90 percent useful load (Wet)	7,000 feet
75 percent of fleet at 90 percent useful load (Dry)	6,400 feet
75 percent of fleet at 60 percent useful load (Wet)	5,500 feet
75 percent of fleet at 60 percent useful load (Dry)	4,800 feet



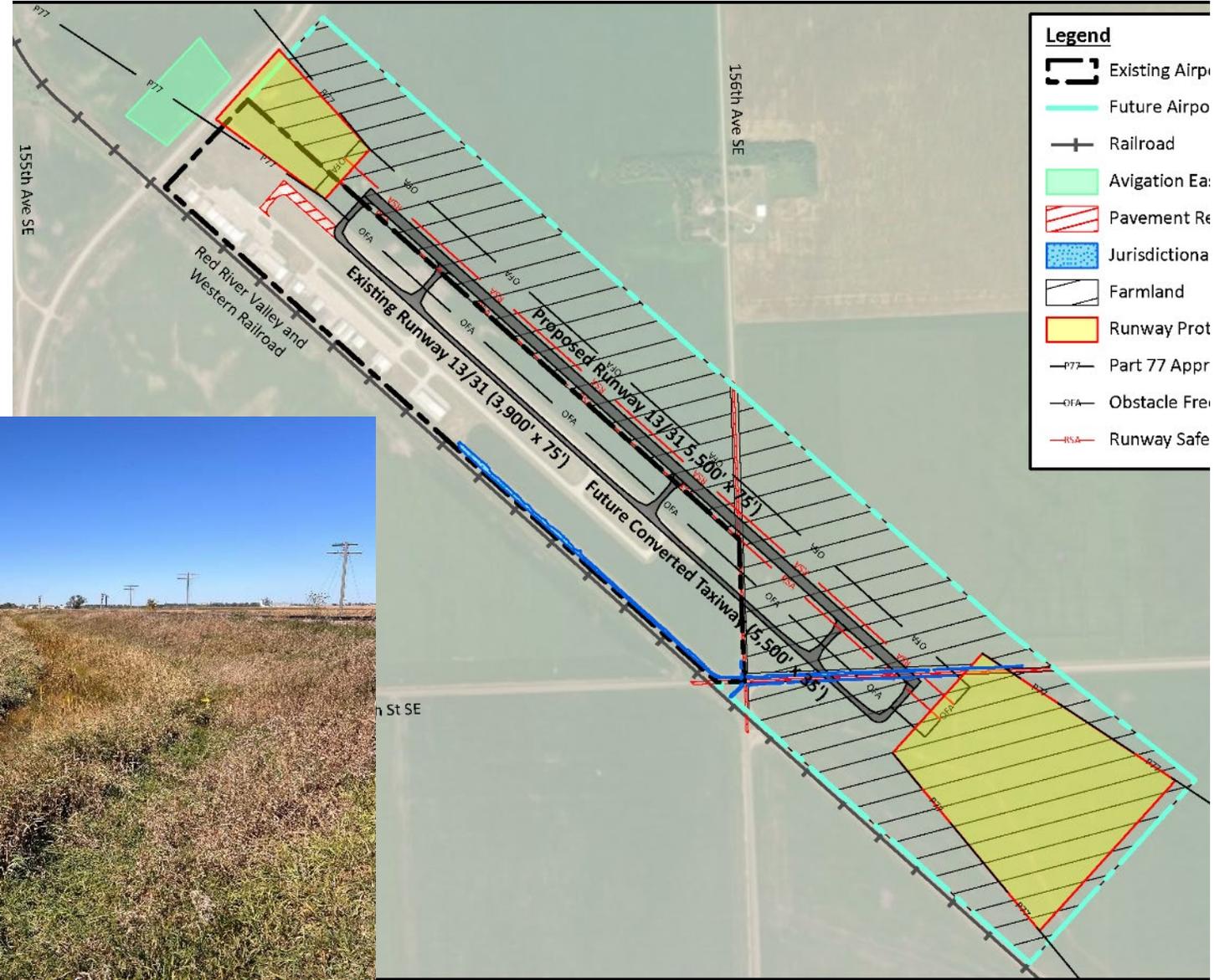
Proposed Project



Sources: Maxar, USGS National Land Cover Database (NLCD) - 2021 Data

Environmental Considerations

- Field access/farmland conversion
- Drainage/wetlands
- Roadway connections



Funding Availability

- Project cost estimates
 - Reconstruction as-is: \$16.1mm
 - Extended runway: \$25mm
- Federal funding
 - FAA has already started to fund this with funding assistance for the Environmental assessment
 - They do not fund early work on a project unless they are planning to continue to fund the project
- State funding
 - State funding has already begun as well with the Environmental assessment
 - ND Aeronautics Department works closely with airports and FAA
- Local funding
 - Typically 5-10 %
 - Could be more for large projects depending upon state funding availability

Contact

Matt Hovdenes 218-790-2765

rightwayag@outlook.com

Questions

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Meeting Summary – Everest Township Roadways

Date: March 31, 2025

Location: Virtual

Project: 5N8 Airport Environmental Assessment (EA)

Discussion Overview

Roadway Alternatives and Aircraft Classification

- No specific comments were provided on individual roadway alternatives.
- Discussion confirmed that the project consideration is limited to accommodating Group II aircraft.
- It was noted that state legislative funding is largely based on certified roadway miles. As a result, any loss of roadway miles is a key concern when evaluating project options and budgeting.

Decision-Making

- It was clarified that an upcoming vote would address whether to proceed with a project in general, rather than selecting a specific roadway alternative, runway length, or design option.
- Township representatives indicated that they are not yet prepared to make a formal decision regarding roadway alternatives.

Drainage and Water Resources

- Questions were raised regarding water flow on the south side of 39th Street.
- It was noted that potential impacts to drainage and water flow will be better understood once a roadway alternative is selected.
- Project representatives acknowledged the importance of maintaining existing drainage patterns and stated that the project would not worsen current conditions.
- While detailed drainage plans cannot be prepared prior to identifying a preferred alternative, drainage considerations will remain a priority in subsequent design phases.

Railroad Coordination

- Coordination with the railroad is ongoing. The railroad has indicated that it is aware of the airport project and will provide additional information at a later date.

Property Acquisition and Landowner Coordination

- No purchase agreements are currently in place.
- The typical process described involves preparing an initial EA prior to initiating formal negotiations with landowners.
- It was noted that coordination efforts are intended to proceed in a manner that supports landowner comfort with potential transactions. If landowners are unwilling to sell, alternative approaches and their implications for future landowner relations may need to be considered.

Next Steps

- A potential decision regarding whether to proceed with a project may occur later in the week.
- An Airport Authority meeting is scheduled for the following day, during which a township representative is expected to be present and participate in the vote.



Casselton Regional Airport Runway Improvements Project Roadway Alternatives

Everest Township— March 31, 2025

Agenda



Introductions

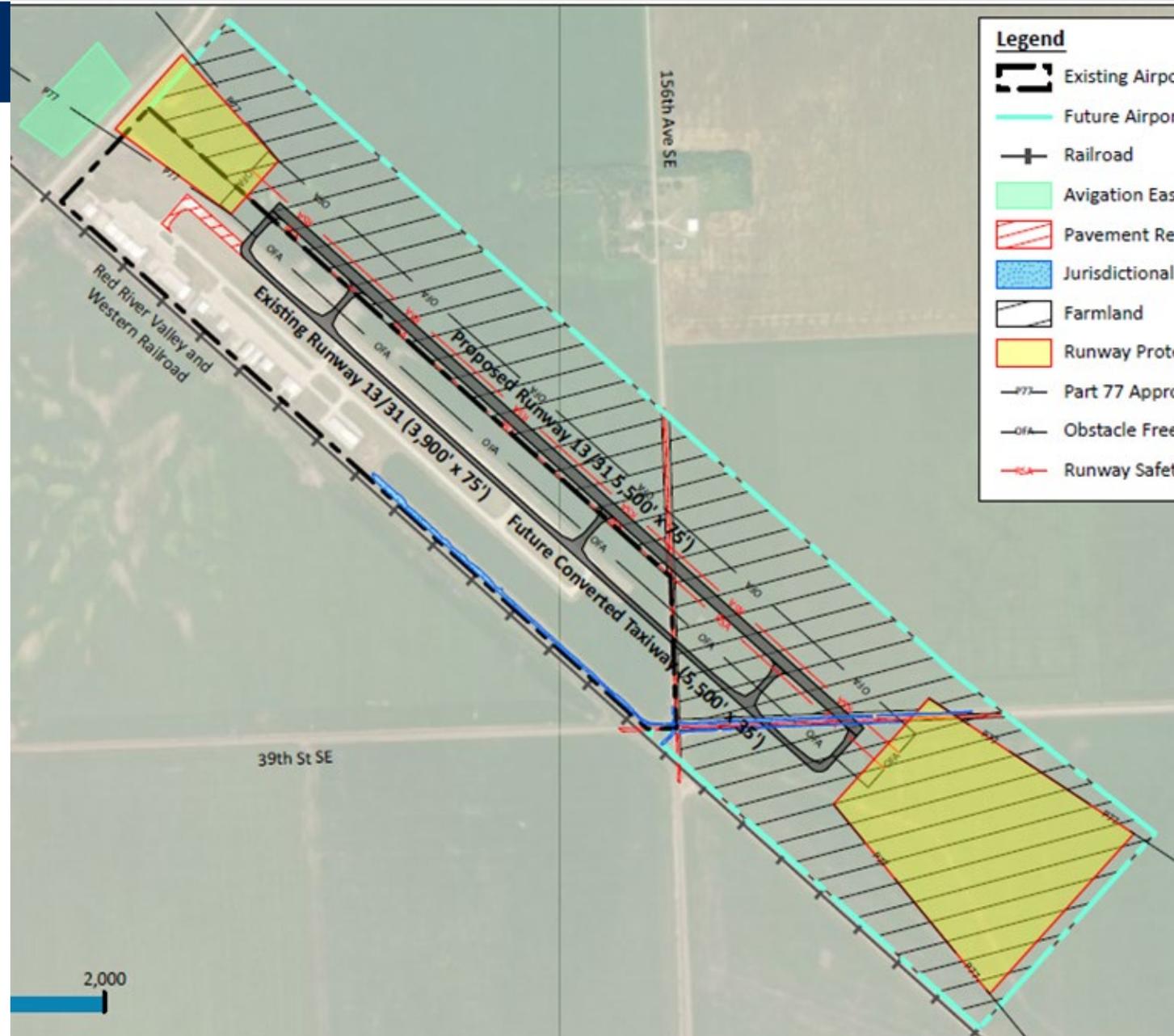
Overview of the Casselton
Regional Airport Project

Considerations for Roadway
Alternatives

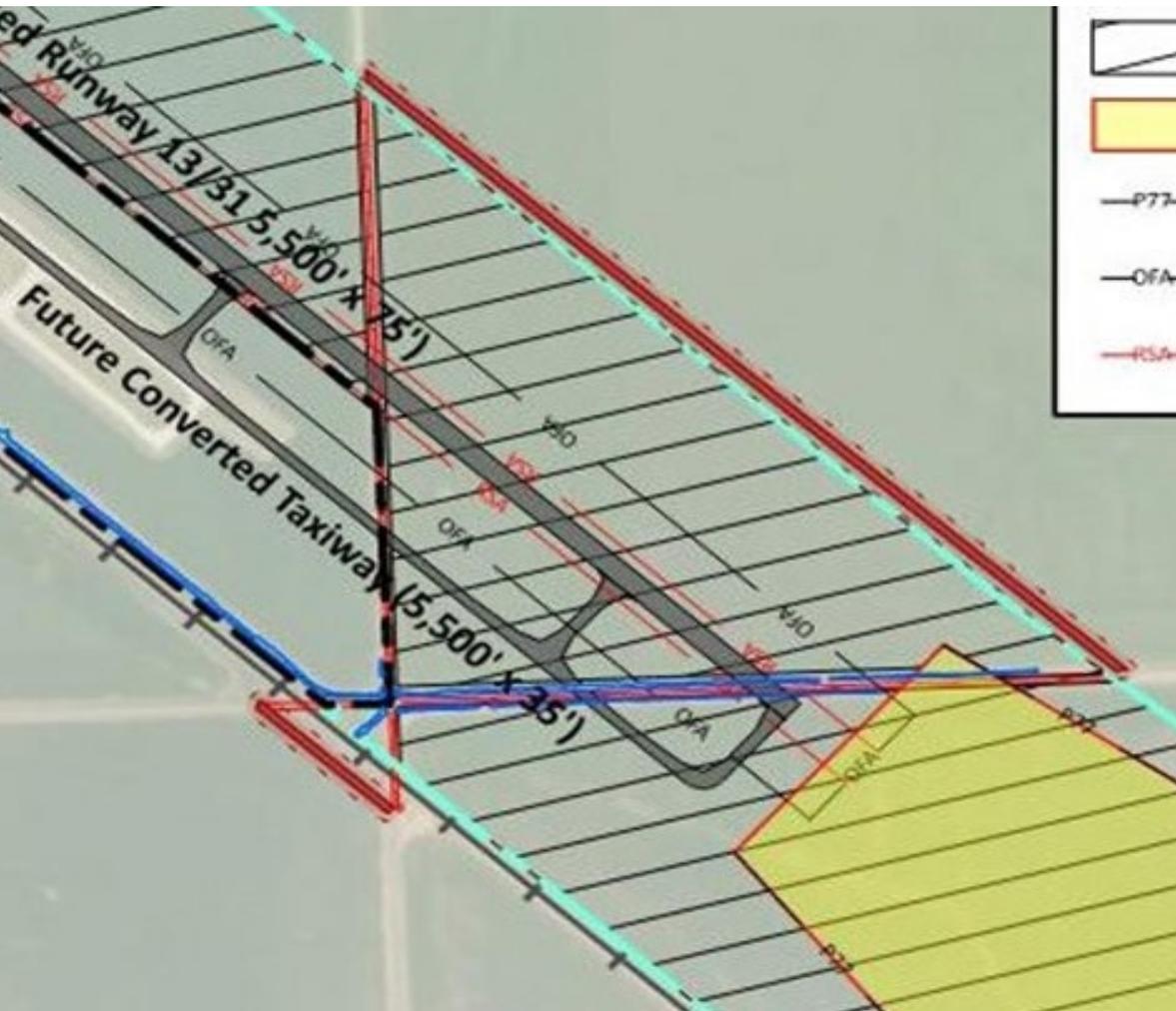
Roadway Alternatives
Comparison

Project Background

- Proposed project to relocate runway and parallel taxiway
 - Pavement at end of service life
 - Bring runway up to FAA standards for Group II aircraft
 - Shift runway away from Highway 18 and Railroad



Project Background



Runway shift and extension requires roadway alterations to

156th Ave SE and 39th St SE

Part of the environmental process (NEPA) is hearing from the affected community and landowners regarding impacts and working to minimize or mitigate as part of the project, where feasible.

Assume longest studied runway length: 5,500 feet

Roadway Alternatives

Project currently considering five roadway alternatives

Major considerations for alternatives

- Cost
- Farming Impacts
- Drainage (Wetlands)
- Ease of travel
- Road mileage funding

Alternative 1 – Road Closure

Benefits

- Least Costly:
 < \$10,000
- Preserves controlled access to most farmland
- Minimizes wetland / drainage disruption

Drawbacks

- Interrupts N-S and E-W connection
- Reduces overall road miles in Everest Township
 ~1mi



Alternative 2 – Improve 39th Street SE

Benefits

- Moderate cost: ~\$500,000
- Preserves controlled access to most farmland
- Improves farm access in wet conditions
- Minimizes wetland/drainage disruption

Drawbacks

- Interrupts N-S and E-W connection
- Reduces overall road miles in Everest Township ~1mi



Alternative 3 – Improve and Relocate 39th Street SE

Benefits

- Preserves access to most farmland
- Improves access in wet conditions
- Maintains E-W connection

Drawbacks

- Potential drainage / wetland impacts
- Interrupts N-S connection
- Requires coordination with FAA, may not be approved
- May constrain future runway performance



Alternative 3A – Improve and Relocate 39th Street SE

Benefits

- Preserves access to most farmland
- Improves access in wet conditions
- Maintains E-W connection
- Accounts for future Approach Category C Runway Safety Area if needed in future

Drawbacks

- Potential drainage / wetland impacts
- Interrupts N-S connection
- Requires coordination with FAA, may not be approved



Alternative 4 – Full Road Relocation

Benefits

- Maintains all road connectivity
- Farmland is accessible

Drawbacks

- Most costly: ~\$3.5 million
- Potential drainage impacts
- Breaks up farm fields
- Adds travel time



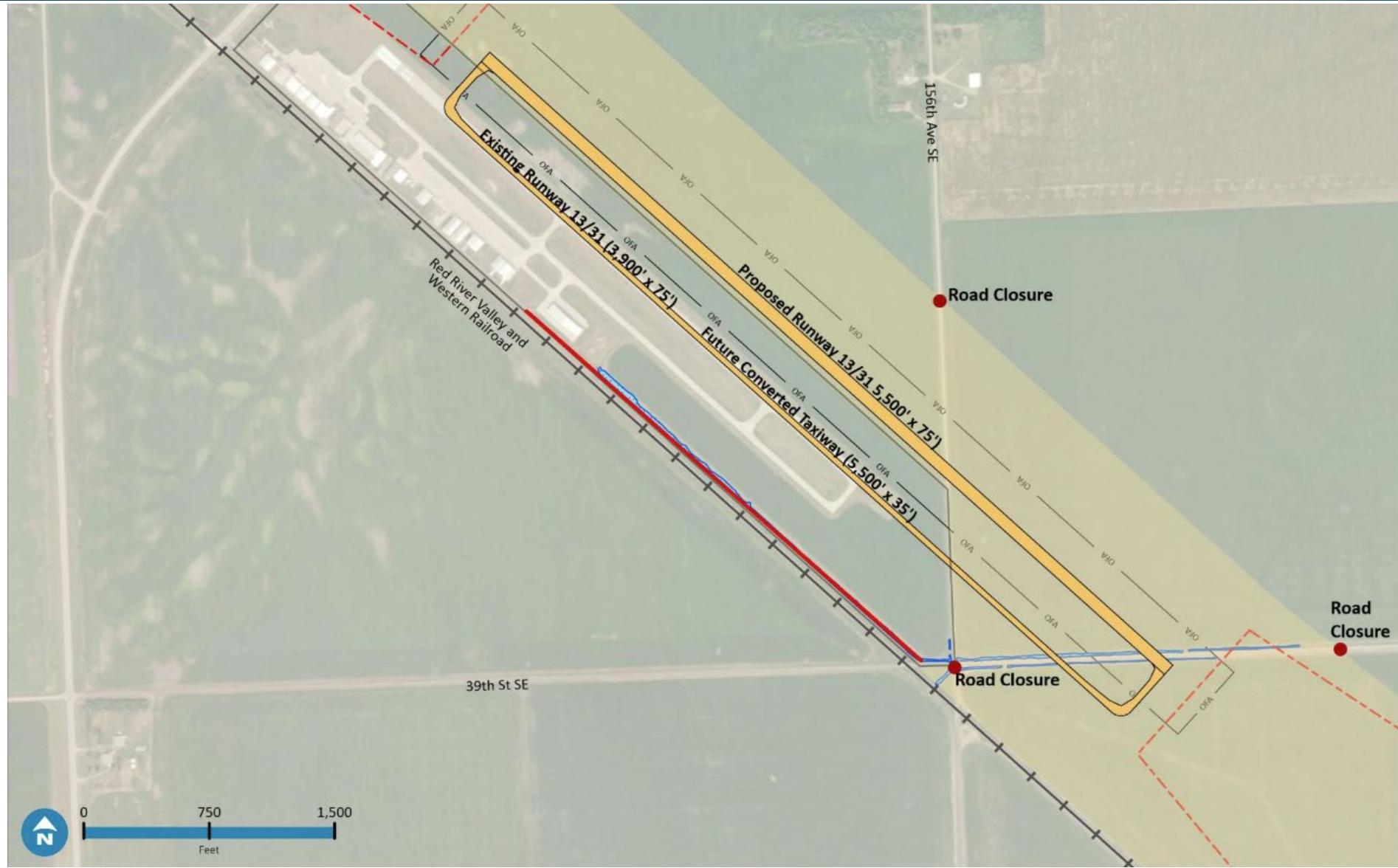
Alternative 5 – On-Airport Access Road

Benefits

- Moderate cost: ~ \$1.5 million
- Allows farm access in wet conditions

Drawbacks

- Interrupts N-S and E-W connection
- Constrains future airport development
- Increased wetlands effort, potentially substantial impacts
- Reduces overall road miles in Everest Township



Alternatives Summary

	Alternative 1	Alternative 2	Alternative 3A	Alternative 3B	Alternative 4	Alternative 5
Pro/Con Summary	<p>Pro: Cost, impacts</p> <p>Con: Connectivity</p>	<p>Pro: Cost, farm access when wet</p> <p>Con: Connectivity</p>	<p>Pro: E/W connectivity</p> <p>Con: FAA coord, future airport dev, potential impacts</p>	<p>Pro: E/W Connectivity, future airport dev</p> <p>Con: FAA coord, potential impacts</p>	<p>Pro: Connectivity</p> <p>Con: Cost, travel time, drainage impacts</p>	<p>Pro: Farm access when wet</p> <p>Con: Connectivity, airport constraints, drainage impacts</p>
Rough Cost	<\$10,000	~\$500,000	~\$1.4 million	~\$1.7 million	~3.5 million	~\$1.5 million
Changes in road length (+/-)	-1 mi	-1 mi	-0.5 mi	-0.25 mi	+ 0.75 mi	-1 mi
E-W Connectivity?	No	No	Yes	Yes	Yes	No

Questions

Contact Sarah Emmel Tvedten

Sarah.Emmel@meadhunt.com

952-641-8805



Proposed Runway Project

Casselton Regional Airport



Who is the Casselton airport?

- **Authority made up of the city of Casselton and 7 townships**
- **46 based aircraft: Business and recreational use**
- **Second only to Mandan in level of activity for similar airports in ND**
- **Supported well by the community for over 40 years**

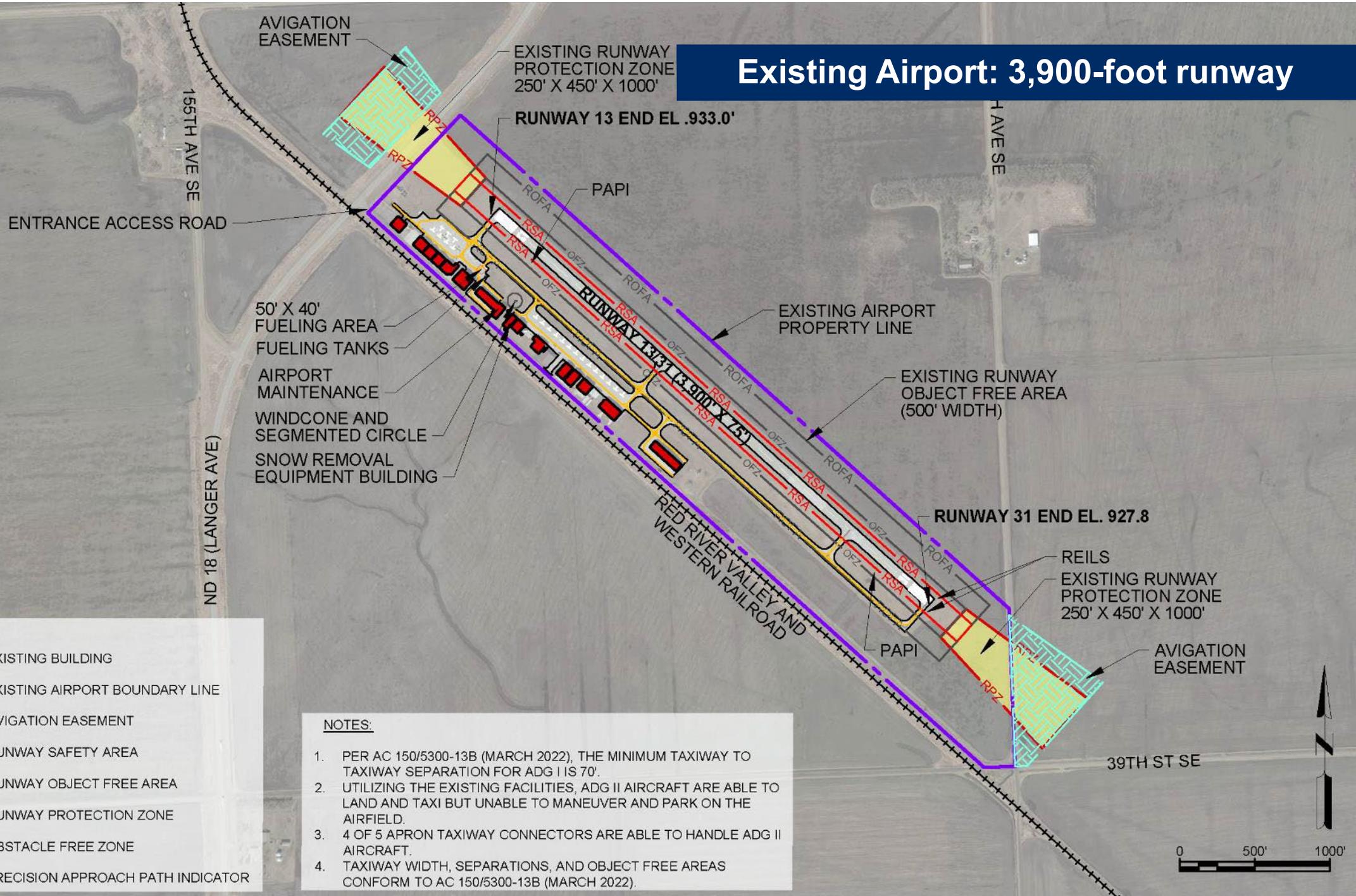
Types of Activity at the Airport

- Ag sprayers (based)
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- State government (transient)
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- Diversions for fog from Fargo, including small cargo (transient)



Existing Airport: 3,900-foot runway



AVIGATION EASEMENT

EXISTING RUNWAY PROTECTION ZONE 250' X 450' X 1000'

RUNWAY 13 END EL .933.0'

156TH AVE SE
ENTRANCE ACCESS ROAD

50' X 40' FUELING AREA
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AIRPORT MAINTENANCE
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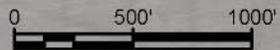
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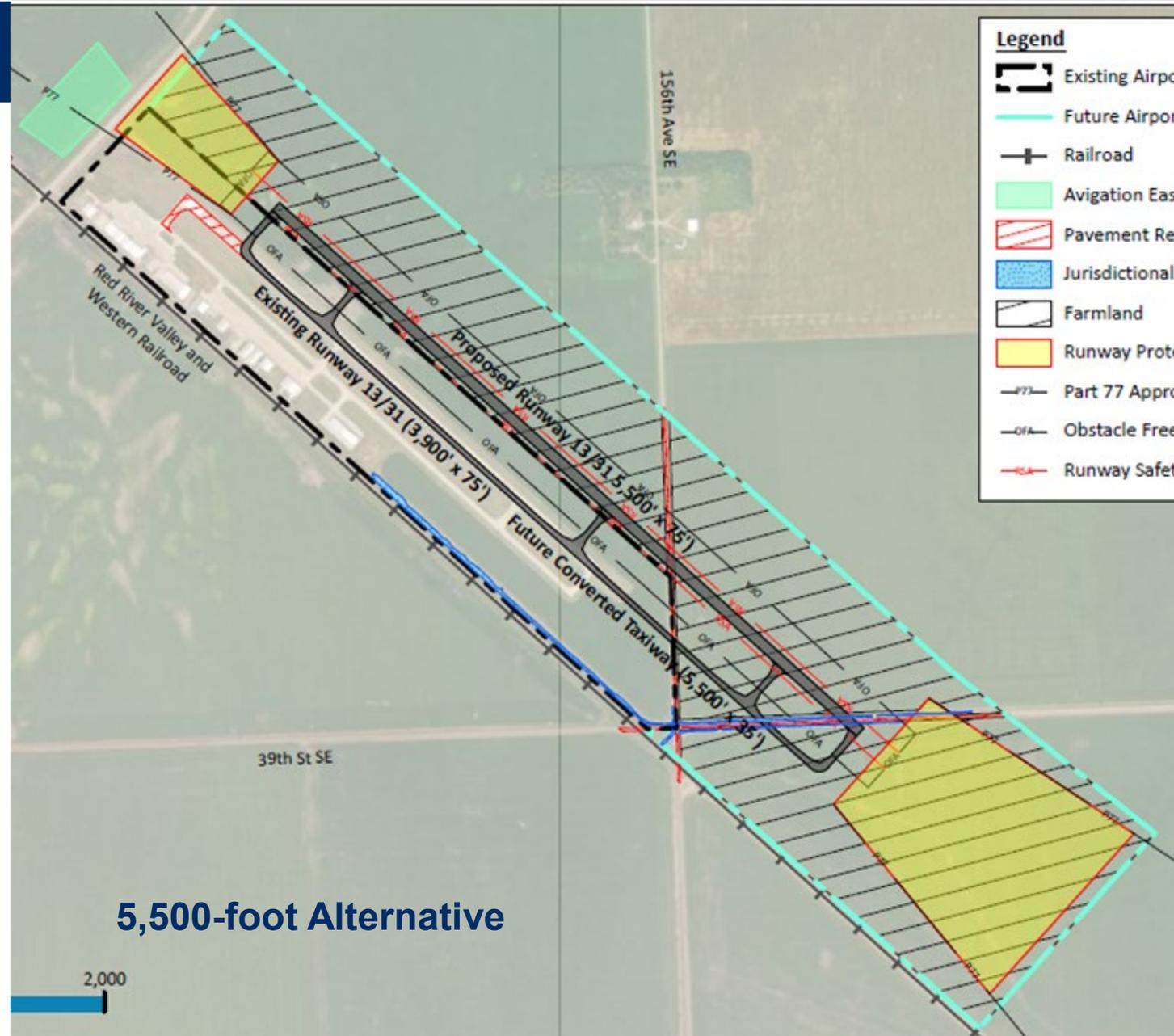
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Proposed Project

- Proposed project to relocate and extend runway and parallel taxiway
 - Bring runway up to FAA standards for Group II aircraft
 - Shift runway away from Highway 18 and Railroad
 - Extension could better serve local and regional business community



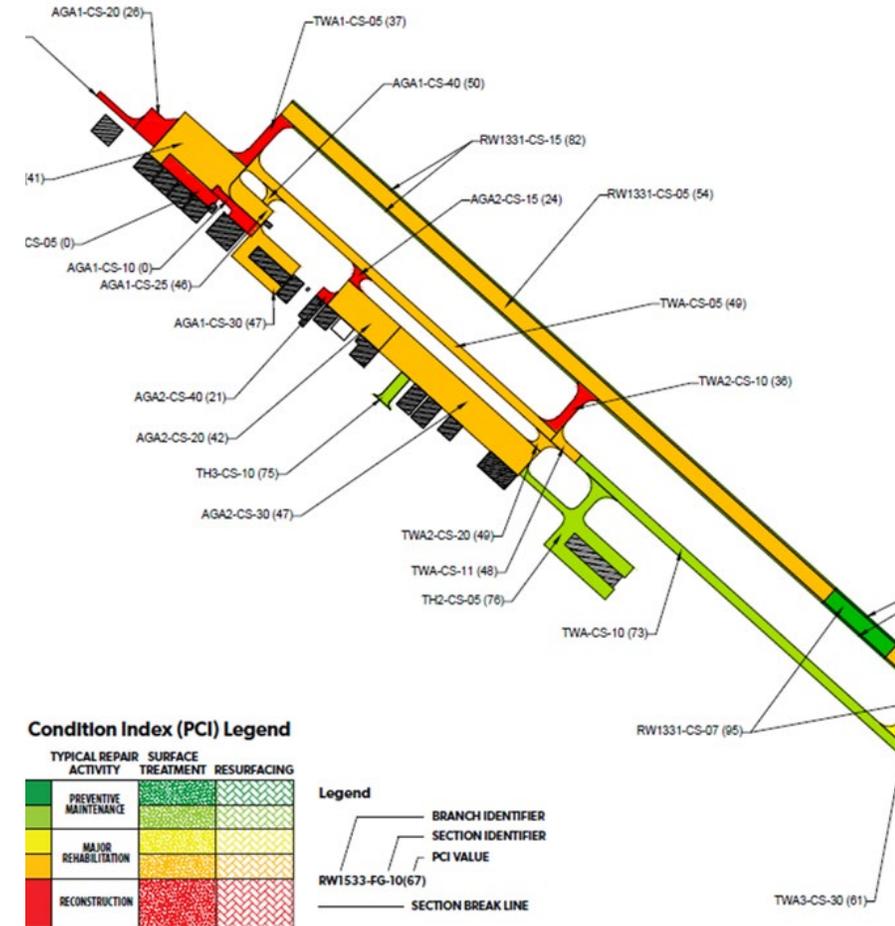
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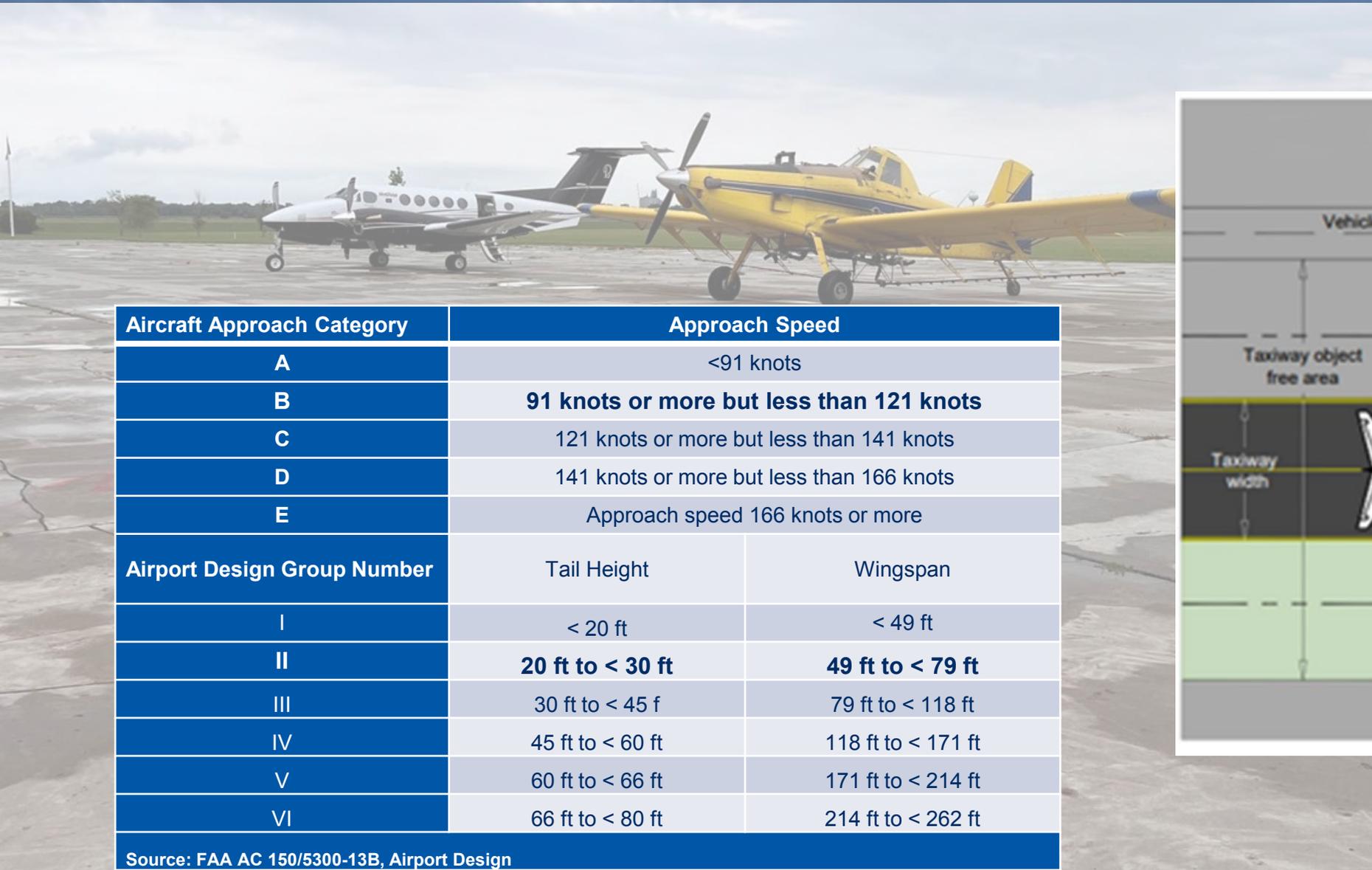
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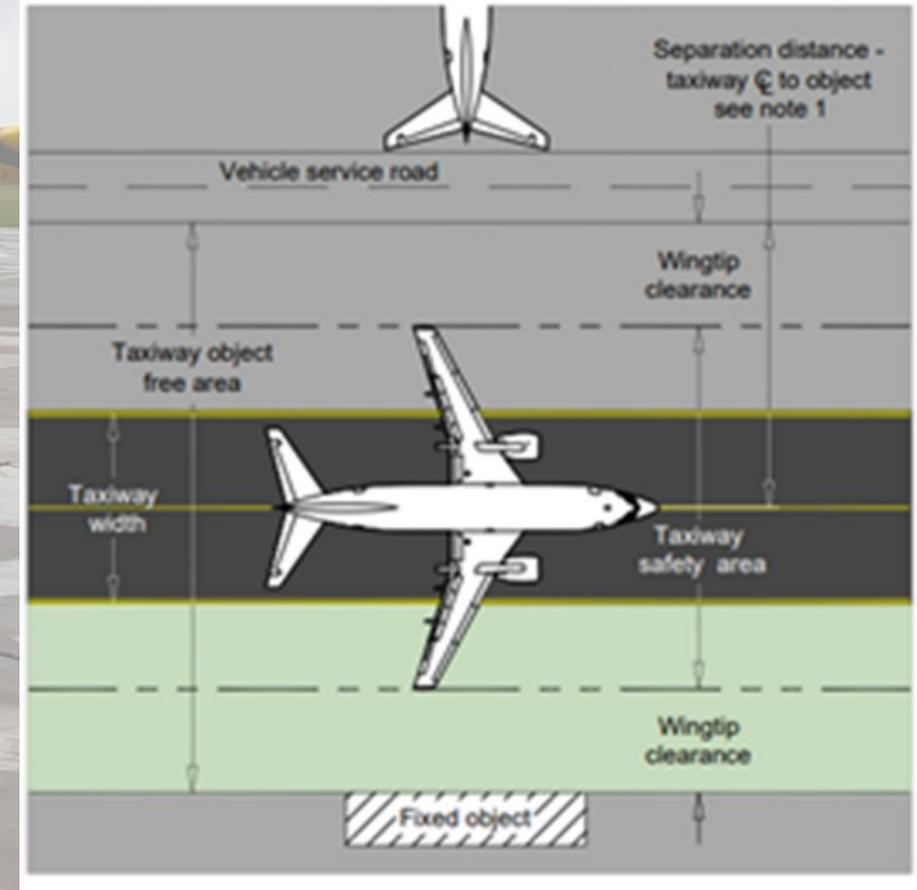
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Airport Users and Standards



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Source: FAA AC 150/5300-13B, Airport Design



Future Airport Users

Aircraft Type	Maximum Takeoff Weight (MTOW)	Wingspan
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Embraer Phenom 300	17,968 lbs.	52 feet

Larger ag sprayers and many corporate users remain in the B-II category for size / wingspan.

However: MTOWs are heavier than the current “small” designation for the Casselton runway, which includes MTOW up to 12,500 lbs.

Air Tractor 802



Cessna Citation XL



Runway Length

Runway 13/31 is currently 3,900 feet long, which aligns with FAA recommendations for runways serving aircraft with a Maximum Takeoff Weight (MTOW) of 12,500 pounds or less with fewer than 10 passenger seats.

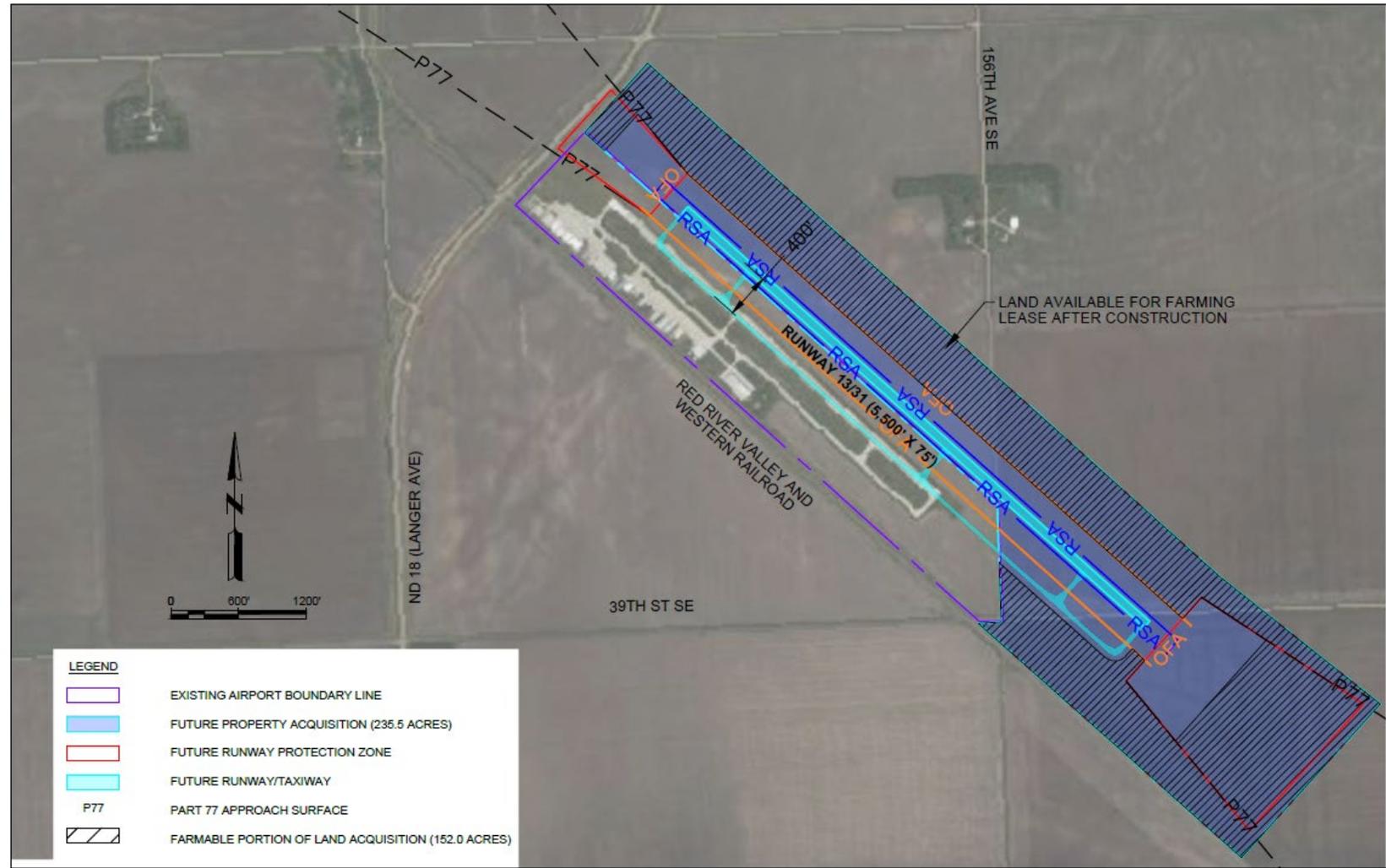
Heavier aircraft require more runway length.

Guidance for future critical aircraft

Airport and Runway Data	
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Mean Daily Maximum Temperature of Hottest Month	82.3°F
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Aircraft Classification	Recommended Runway Length
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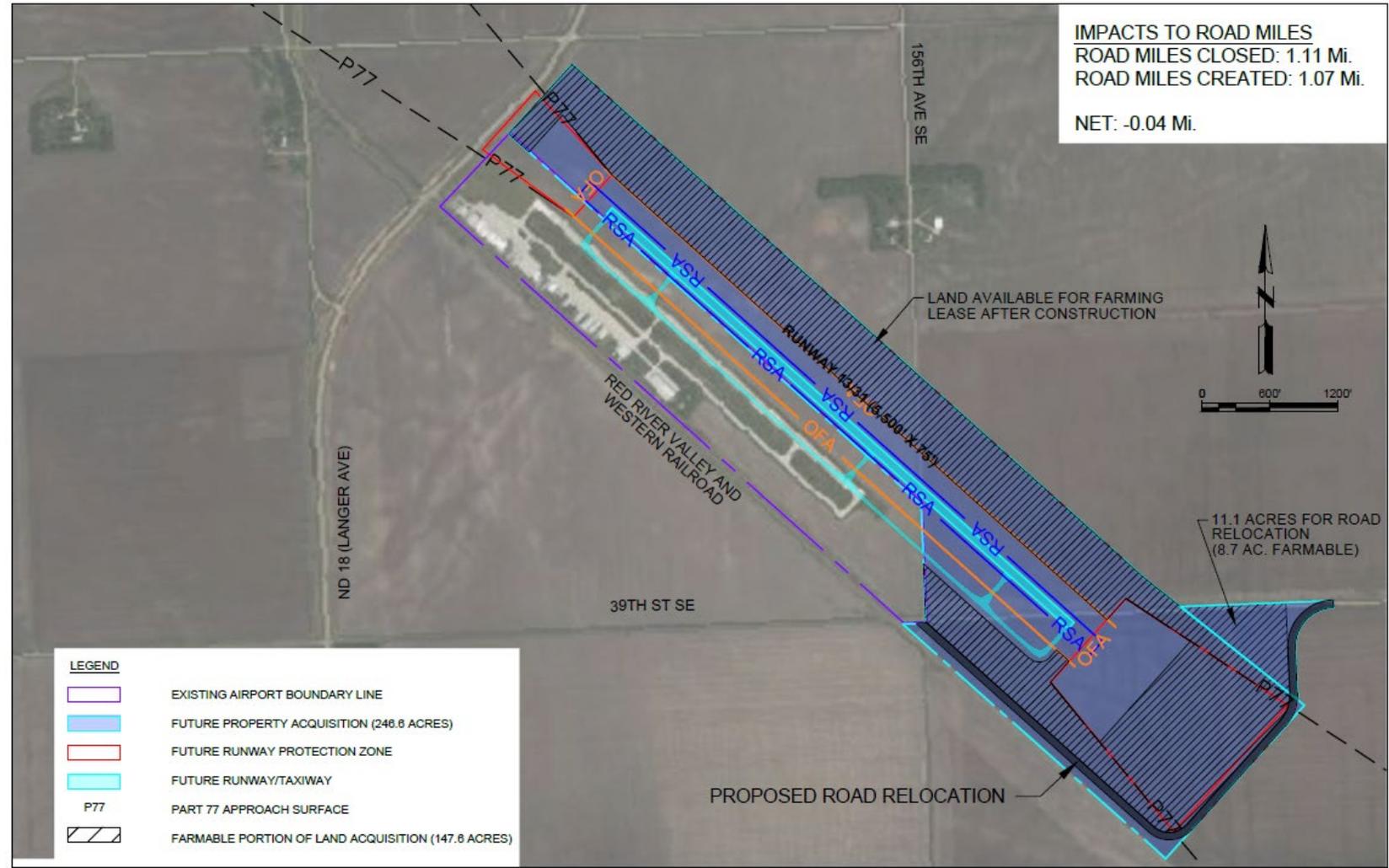
Project Alternatives: 5,500-foot Runway

- Meets Group II design standards
- Meets length guidance for long-term future users
- Property acquisition: 235.5 acres
- Allows agricultural lease of 152 acres
- Road miles reduced: ~1 mile



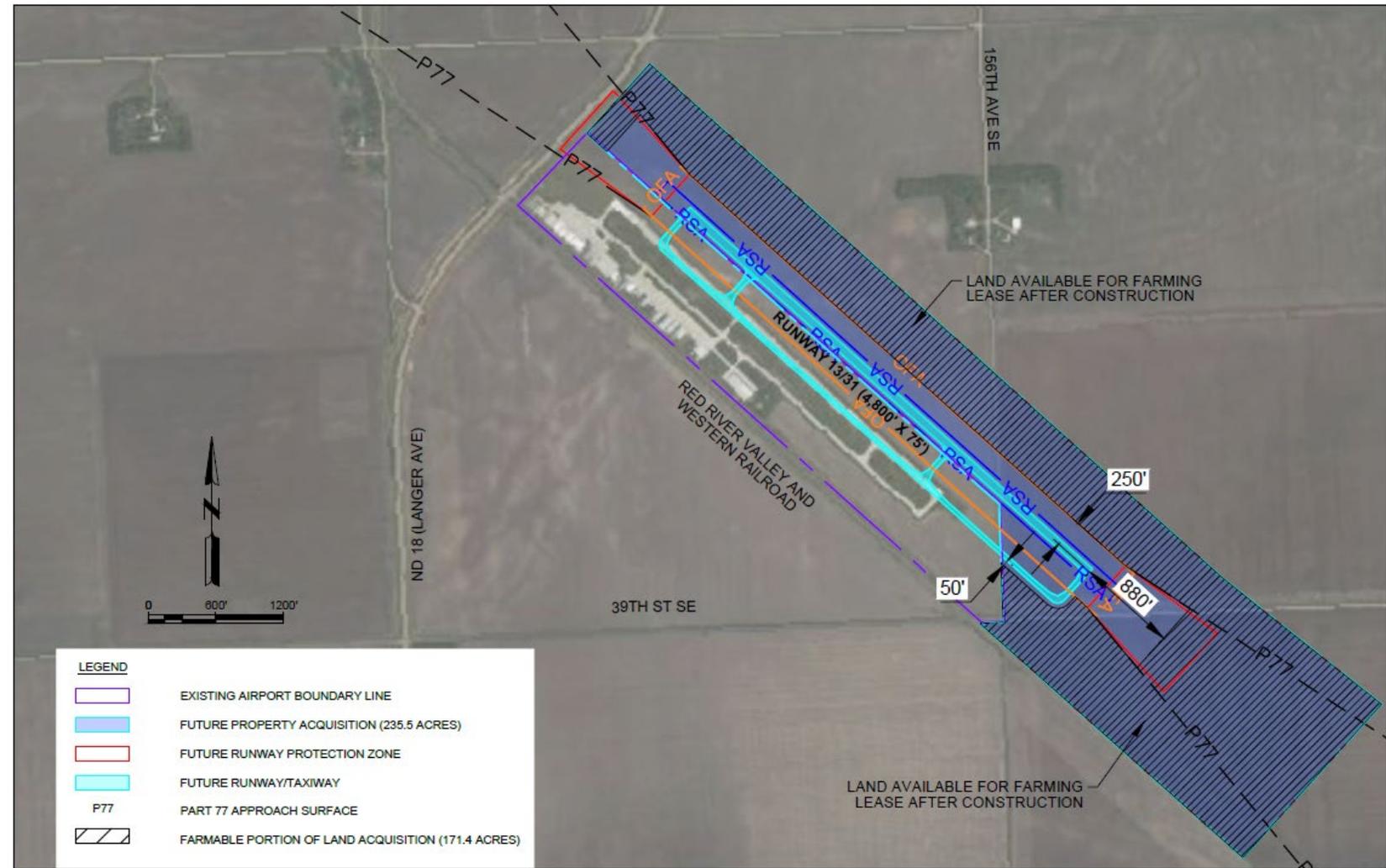
Project Alternatives: 5,500-foot Runway with Road

- Meets Group II design standards
- Meets length guidance for long-term future users
- Property acquisition: 246.6 acres
- Allows agricultural lease of 148 acres
- Road miles reduced: 0.04 miles



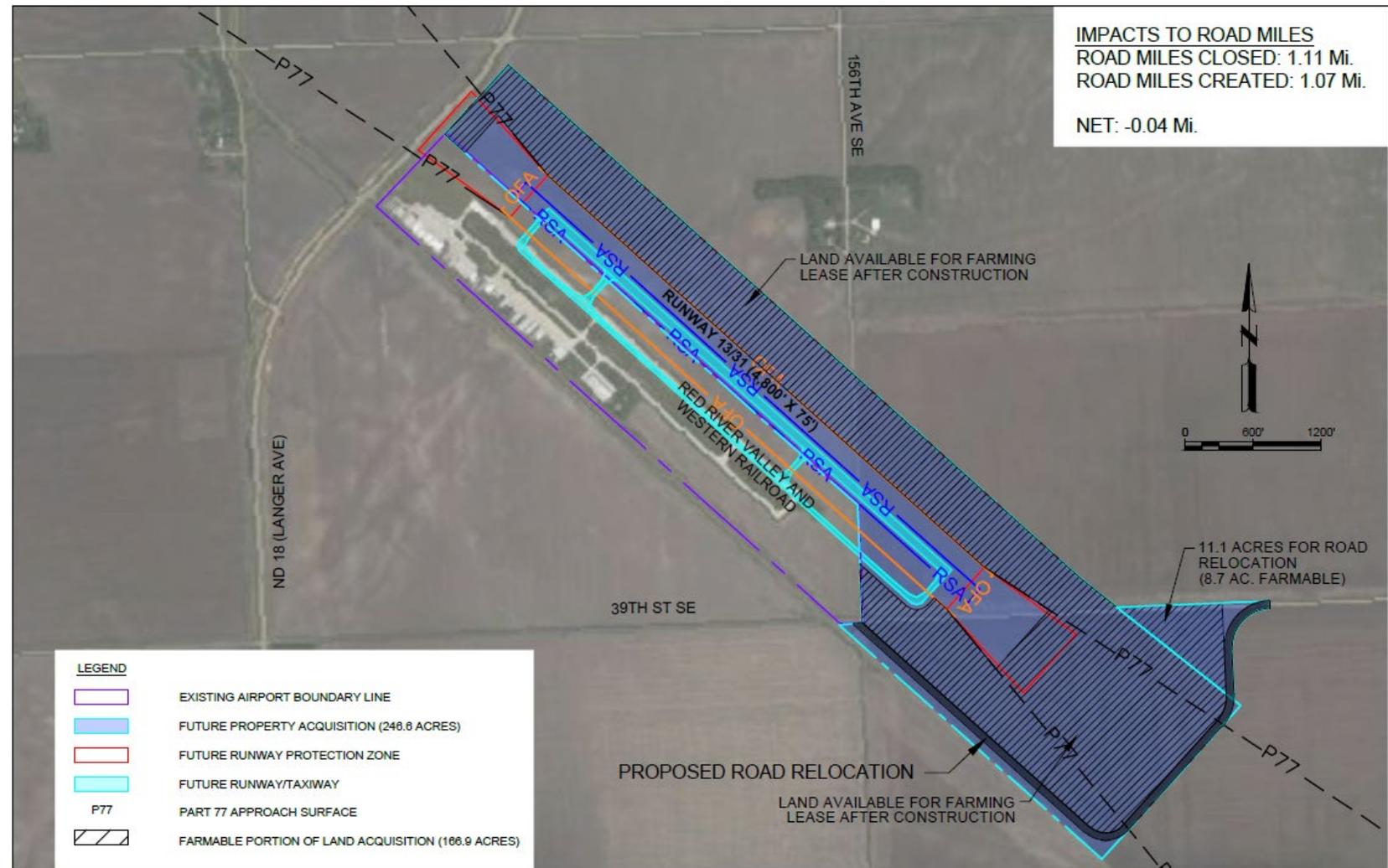
Project Alternatives: Interim 4,800-foot Runway

- Meets Group II design standards
- Meets length guidance for long-term future users in dry conditions
- Property acquisition: 235.5 acres (reserves for future 5,500-foot runway)
- Allows agricultural lease of 171 acres
- Road miles reduced: ~1 mile



Project Alternatives: Interim 4,800-foot Runway with Road

- Meets Group II design standards
- Meets length guidance for long-term future users in dry conditions
- Property acquisition: 246.6 acres (reserves for future 5,500-foot runway)
- Allows agricultural lease of 167 acres
- Road miles reduced: 0.04 miles



Community Benefits of Extension

The extended runway would better serve local and regional businesses by accommodating larger aircraft, facilitate the transportation of goods and services, and attract more business activities to the area.

Activity trends in the Fargo metro area suggest that Casselton is well positioned to serve as an attractive alternative to FAR for business aviation.



Funding Availability

- Project cost estimates
 - Reconstruction as-is: \$16.1mm
 - Extended runway 4,800 feet: \$22.2mm
 - Extended runway 5,500 feet: \$25mm
- Federal funding
 - FAA has already started to fund this with funding assistance for the Environmental assessment
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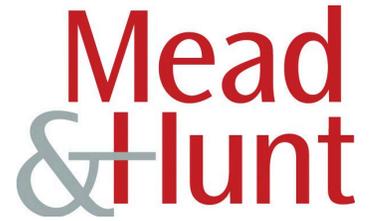
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Casselton Regional Airport

Everest Township Open House - December 16, 2024



Who is the Casselton airport

- Made up of the city of Casselton and 7 townships
- Many active businesses
- 46 Based Aircraft
 - Recreational aircraft
 - Business aircraft
- Numerous transient operations
- Very active airport
 - Second only to Mandan in activity of similar airports
- This airport has been supported well by the community for over 40 years

Existing Airport



AVIGATION EASEMENT

EXISTING RUNWAY PROTECTION ZONE 250' X 450' X 1000'

RUNWAY 13 END EL. 933.0'

ENTRANCE ACCESS ROAD

50' X 40' FUELING AREA
FUELING TANKS

AIRPORT MAINTENANCE
WINDCONE AND SEGMENTED CIRCLE
SNOW REMOVAL EQUIPMENT BUILDING

EXISTING AIRPORT PROPERTY LINE

EXISTING RUNWAY OBJECT FREE AREA (500' WIDTH)

RUNWAY 13/31 (3,900' X 75')

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Environmental Assessment Process

- Airport hired Mead & Hunt to draft an Environmental Assessment for the preferred alternative from the 2020 Master Plan.
- An EA takes a deeper look at potential impacts of a project, including gathering feedback from the community
- Certain categories as directed by FAA guidance

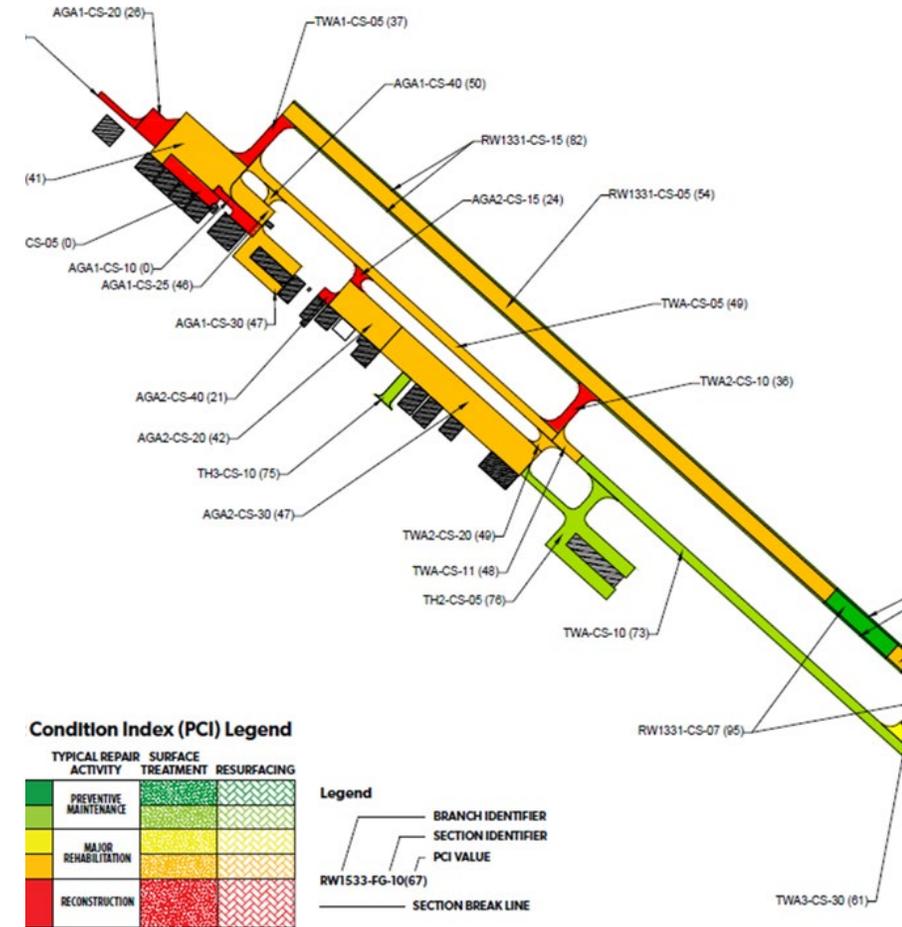
Why now?

- The majority of Airport pavement is over 30 years old
- Although multiple rehabilitation projects have occurred since construction, pavement throughout the Airport is now in poor condition and nearing the end of its service life.
- A runway rehabilitation done in 2023 will maintain the surface in usable condition until the runway project

Because reconstruction of the runway and parallel taxiway is necessary, improvements should be designed to meet standards for existing and projected users.



Faulting on Taxiway Connector



2021 PCI Map of Airport Pavements

Airport Users and Standards



Critical Aircraft:

The aircraft with regular use at an airport that has the most demanding operational characteristics. This is defined by the two aircraft classifications described below.

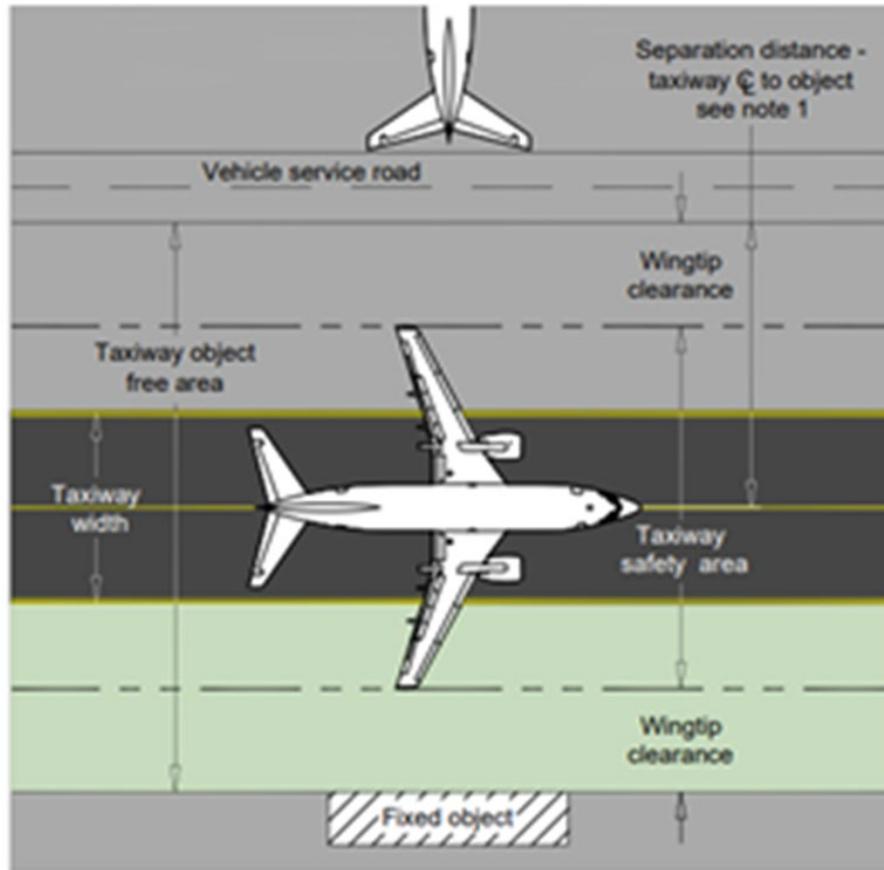
Aircraft Approach Category (AAC):

This standard is based on the approach speed (in knots) of the critical aircraft.

Airplane Design Group (ADG):

This second standard is based on the wingspan and tail height of the critical aircraft

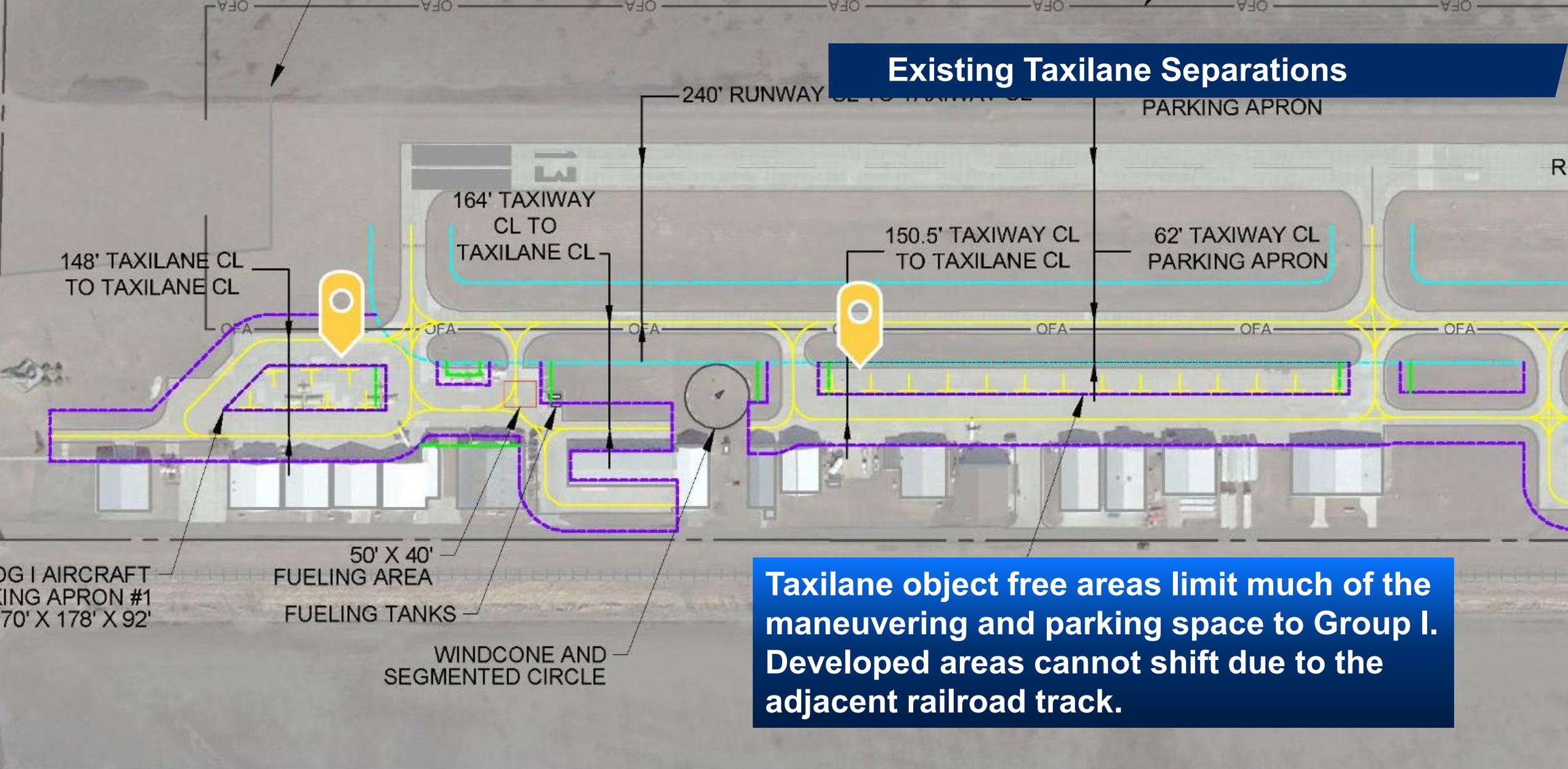
Airport Users and Standards



Aircraft Approach Category	Approach Speed	
A	<91 knots	
B	91 knots or more but less than 121 knots	
C	121 knots or more but less than 141 knots	
D	141 knots or more but less than 166 knots	
E	Approach speed 166 knots or more	
Airport Design Group Number	Tail Height	Wingspan
I	< 20 ft	< 49 ft
II	20 ft to < 30 ft	49 ft to < 79 ft
III	30 ft to < 45 f	79 ft to < 118 ft
IV	45 ft to < 60 ft	118 ft to < 171 ft
V	60 ft to < 66 ft	171 ft to < 214 ft
VI	66 ft to < 80 ft	214 ft to < 262 ft

Source: FAA AC 150/5300-13B, Airport Design

Existing Taxilane Separations



Taxilane object free areas limit much of the maneuvering and parking space to Group I. Developed areas cannot shift due to the adjacent railroad track.

ND

TAXILANE/TAXIWAY CENTERLINE

ADG I TAXIWAY/TAXILANE OBJECT FREE AREA (79' WIDTH)

NOTES:

1. PER AC 150/5300-13B (MARCH 2022), THE MINIMUM TAXIWAY TO TAXIWAY SEPARATION FOR ADG II IS 70'.
2. UTILIZING THE EXISTING FACILITIES, ADG II AIRCRAFT ARE ABLE TO

Future Airport Users

Airport Design Group Number	Tail Height	Wingspan
I	< 20 ft	< 49 ft
II	20 ft to < 30 ft	49 ft to < 79 ft

Aircraft Type	Maximum Takeoff Weight (MTOW)	Wingspan
Beech King Air 300	14,000 lbs.	58 feet
Air Tractor 802	16,000 lbs.	59 feet
Cessna Citation II	14,800 lbs.	52 feet
Cessna CJ4	17,110 lbs.	51 feet
Embraer Phenom 300	17,968 lbs.	52 feet

Air Tractor 802



Beech King Air 300



Runway length

Runway 13/31 is 3,900 feet long, which aligns with FAA recommendations for runways serving aircraft with a Maximum Takeoff Weight of 12,500 pounds or less with fewer than 10 passenger seats

Guidance for future critical aircraft

Land needs

Airport and Runway Data	
Airport Elevation	933 feet MSL
Mean Daily Maximum Temperature of Hottest Month	82.3°F
Maximum Difference in Runway Centerline Elevation	5 feet (+50 feet)
Runway Condition	Wet and Slippery Runways
Aircraft Classification	Recommended Runway Length
<i>Large Airplanes more than 12,500 Pounds but less than 60,000 Pounds</i>	
75 percent of fleet at 90 percent useful load (Wet)	7,000 feet
75 percent of fleet at 90 percent useful load (Dry)	6,400 feet
75 percent of fleet at 60 percent useful load (Wet)	5,500 feet
75 percent of fleet at 60 percent useful load (Dry)	4,800 feet

Source: Casselton Regional Airport Master Plan, 2020; FAA AC 150/5325-4B

Existing Airport



AVIGATION EASEMENT

EXISTING RUNWAY PROTECTION ZONE 250' X 450' X 1000'

RUNWAY 13 END EL .933.0'

ENTRANCE ACCESS ROAD

50' X 40' FUELING AREA
FUELING TANKS

AIRPORT MAINTENANCE
WINDCONE AND SEGMENTED CIRCLE
SNOW REMOVAL EQUIPMENT BUILDING

EXISTING AIRPORT PROPERTY LINE

EXISTING RUNWAY OBJECT FREE AREA (500' WIDTH)

RED RIVER VALLEY AND WESTERN RAILROAD

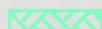
RUNWAY 31 END EL. 927.8

REILS
EXISTING RUNWAY PROTECTION ZONE 250' X 450' X 1000'

AVIGATION EASEMENT

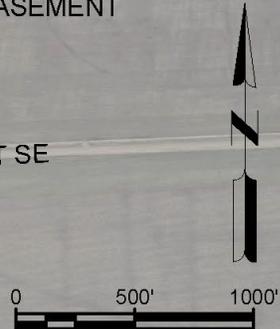
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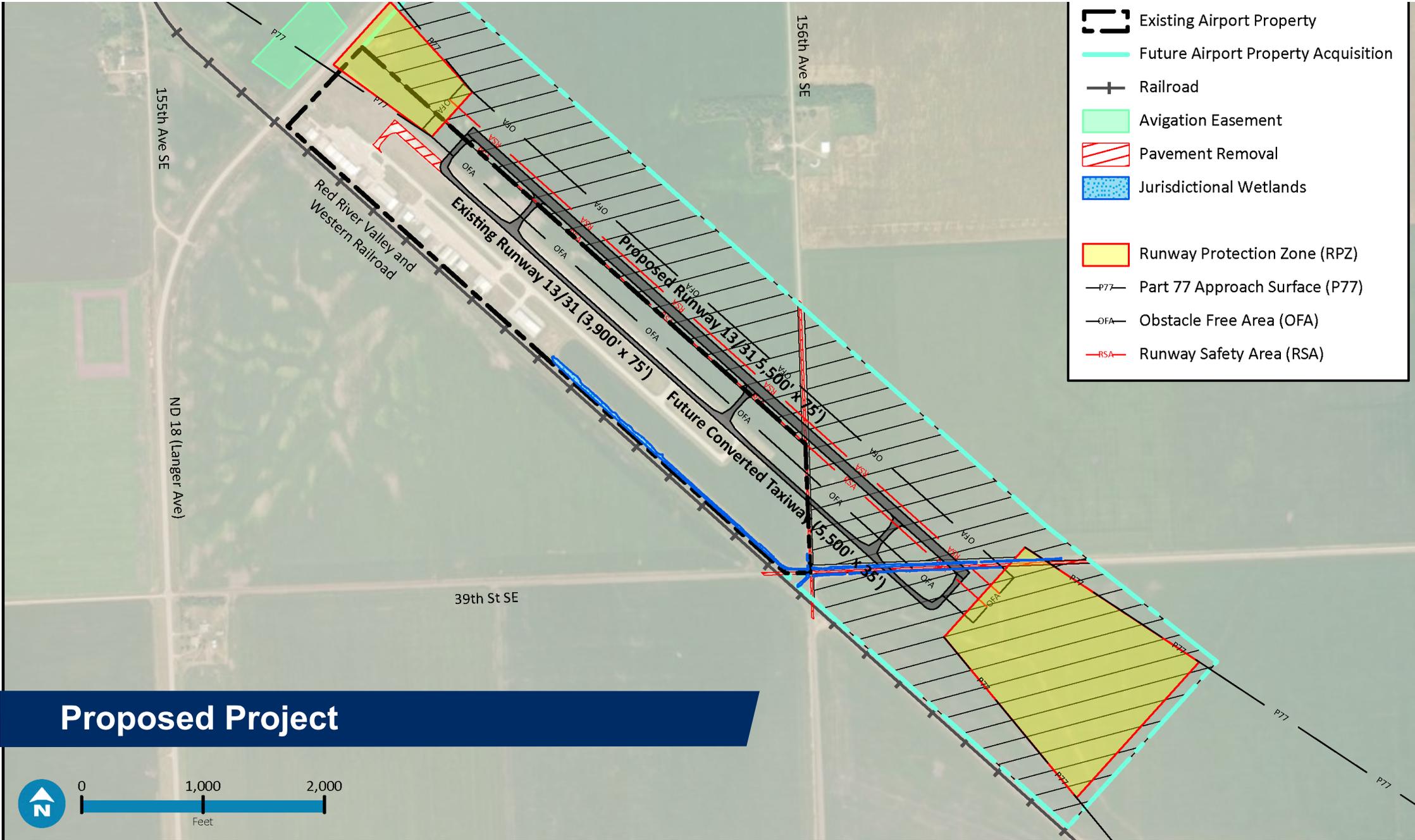
LEGEND

	EXISTING BUILDING
	EXISTING AIRPORT BOUNDARY LINE
	AVIGATION EASEMENT
RSA	RUNWAY SAFETY AREA
ROFA	RUNWAY OBJECT FREE AREA
RPZ	RUNWAY PROTECTION ZONE
OFZ	OBSTACLE FREE ZONE
PAPI	PRECISION APPROACH PATH INDICATOR

NOTES:

1. PER AC 150/5300-13B (MARCH 2022), THE MINIMUM TAXIWAY TO TAXIWAY SEPARATION FOR ADG II IS 70'.
2. UTILIZING THE EXISTING FACILITIES, ADG II AIRCRAFT ARE ABLE TO LAND AND TAXI BUT UNABLE TO MANEUVER AND PARK ON THE AIRFIELD.
3. 4 OF 5 APRON TAXIWAY CONNECTORS ARE ABLE TO HANDLE ADG II AIRCRAFT.
4. TAXIWAY WIDTH, SEPARATIONS, AND OBJECT FREE AREAS CONFORM TO AC 150/5300-13B (MARCH 2022).





Sources: Maxar, USGS National Land Cover Database (NLCD) - 2021 Data

Funding Availability

- Federal funding
 - FAA has already started to fund this with funding assistance for the Environmental assessment
 - They do not fund early work on a project unless they are planning to continue to fund the project
- State funding
 - State funding has already begun as well with the Environmental assessment
 - ND Aeronautics Department works closely with airports and FAA
- Local funding
 - Typically 5-10 %



Contact

Matt Hovdenes 218-790-2765
rightwayag@outlook.com



Questions

The background features a dark blue field on the left, transitioning into a series of overlapping, semi-transparent geometric shapes on the right. These shapes include triangles and quadrilaterals in various shades of blue, a vibrant red, a green, and a yellow-green. The shapes are layered, creating a sense of depth and movement.

Thank You

The background features a dark blue field on the left, transitioning into a series of overlapping, semi-transparent geometric shapes on the right. These shapes include triangles and trapezoids in various shades of blue, a vibrant red, a green, and a yellow-green. The overall composition is modern and dynamic.

Meeting Summary - Everest Township Project Introduction

Date: October 3, 2024

Location: Casselton Regional Airport

Project: 5N8 Airport Environmental Assessment (EA)

Attendees: Everest Township Chair Caryn Weber, M&H Team

Discussion Overview

Project Introduction

- An overview of the Casselton Runway Environmental Assessment was provided, including the purpose of the project and the role of the EA process in evaluating potential environmental and community impacts.

Township Roadway Considerations

- Roadway access and potential closures were discussed as a key area of concern.
- It was noted that a full roadway closure would be undesirable from the township perspective.
- Discussion highlighted that some community members rely on east–west roadway access for travel between residences, businesses, and agricultural properties.
- Potential complications associated with a nearby railroad crossing and the maintenance condition of alternative routes were identified as factors that would need to be considered in evaluating any roadway changes.
- It was noted that township funding is partially based on maintained roadway mileage, and reductions in roadway miles could have funding implications.

Community Engagement and Coordination

- Discussion emphasized the importance of early and ongoing communication with the township and the broader community.
- Past experience was noted in which community resistance arose when projects were perceived as insufficiently communicated or inclusive.
- It was suggested that participation in one or more township meetings prior to the public meeting associated with the draft EA could be beneficial for information sharing and coordination.
- Timing for such engagement was discussed, with January identified as a potential window for future coordination activities.