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APPENDIX H: CULTURAL RESOURCES

August 19, 2026

Melissa Jenny
Environmental Protection Specialist
Federal Aviation Administration
Dakota –Minnesota Airports District Office
melissa.m.jenny@faa.gov

RE: Airlake Airport (LVN) Airfield Improvements Project
City of Lakeville and Eureka Twp, Dakota County
SHPO Number: 2026-0983

Dear Melissa Jenny:

Thank you for the opportunity to comment on the above project. It has been reviewed pursuant to the responsibilities given the State Historic Preservation Officer by Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108) and its implementing federal regulations, "Protection of Historic Properties" (36 CFR Part 800).

Undertaking and Area of Potential Effects

According to your correspondence, the Airlake Airport (LVN) is proposing airfield improvements which include reconstruction and extension of Runway 12/30; taxiway extensions, relocations, and modifications; in installation of airfield lighting, removal of select trees; relocation of 225th Street West; relocation of an intermittent stream, relocation of a public viewing area, and expansion of a storm water pond. We have reviewed the documentation provided in regards to your agency's determination of the area of potential effect (APE) for the Federal undertaking. We agree that this APE determination is generally appropriate to take into account the potential effects of the proposed undertaking.

Identification of Historic Properties

Architecture- History Properties

We have reviewed the submitted report, *Phase I (Reconnaissance Survey) Report, Airlake Airport* (August 2023, Updated July 2026) as prepared by Mead & Hunt. The report identified four historic-age properties within the APE for this project: Airlake Airport (DK-XXX-00003), Airlake Airport Terminal/FBO Office (DK-LKC-00039), Airlake Airport Hangar (DK-LKC- 00040) and the MStPR&DETC Railroad Corridor Historic District (XX-RRD-MNS005) (Please Note: XX-RRD-MNS001 as referenced in the report has been superseded by XX-RRD-MNS005).

We agree with the consultant's recommendation that the **Airlake Airport** and the inventoried properties within it (**Airlake Airport Terminal/FBO Office** and **Airlake Airport Hangar**) are **not eligible** for listing in the National Register of Historic Places (NRHP) due to a lack of significance. The portion of the MStPR&DETC Railroad Corridor Historic District within the APE has previously been determined not eligible for listing in the NRHP.

Archaeological Resources

We have reviewed the submitted reports, *Results of the Phase I Archaeological Survey for Improvements at the Airlake Airport in Dakota County, Minnesota* (09/19/2022) and *Results of a Literature Review for Additional Airport Improvements at Airlake Airport in Dakota County, Minnesota* (06/02/2026) as prepared by Mississippi Valley Archaeology Center. We agree that there is low potential for intact archaeological resources to be located within the APE and that no further archaeological investigations are warranted for the proposed project.

MINNESOTA STATE HISTORIC PRESERVATION OFFICE

50 Sherburne Avenue ■ Administration Building 203 ■ Saint Paul, Minnesota 55155 ■ 651-201-3287

mn.gov/admin/shpo ■ mnshpo@state.mn.us

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Assessment and Finding of Effect

Therefore, based on the documentation provided, we concur with your agency's finding of **No Historic Properties Affected**.

If you have any questions regarding our review of this project, please contact Kelly Gragg-Johnson, Environmental Review Specialist, at kelly.graggjohnson@state.mn.us.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Amy Spong', is positioned above the typed name.

Amy Spong
Deputy State Historic Preservation Officer

From: [Jenny, Melissa M \(FAA\)](#)
To: [Sarah Emmel](#); [Colleen Bosold](#)
Cc: [Evan Barrett](#)
Subject: SHPO needs info FW: 2026-06-22 FAA to SHPO - Airlake Airport (LVN) Runway Project
Date: Thursday, July 9, 2026 9:23:30 AM
Attachments: [image001.png](#)
[image003.png](#)
[image004.png](#)
[image005.png](#)
[image006.png](#)
[image007.png](#)
[image008.png](#)
[image011.png](#)
[image012.png](#)
[image013.png](#)
[DK-LKC-00039_202606 \(1\).pdf](#)
[DK-LKC-00040_202606.pdf](#)

Good Morning –

Please tell your CR folks to submit an inventory form for the airport as requested by SHPO below.

And I confirmed with Kelly that my 7/8 submittal was intended to replace the 6/22 submittal.

Good news they're looking at this already!

Thank you,



Melissa Jenny
Environmental Protection Specialist
FAA-Dakota Minnesota Airports Office
U.S. Department of Transportation
(612) 253-4633
Melissa.m.jenny@faa.gov

From: GraggJohnson, Kelly (ADM) <kelly.graggjohnson@state.mn.us>
Sent: Wednesday, July 8, 2026 5:11 PM
To: Jenny, Melissa M (FAA) <Melissa.M.Jenny@faa.gov>
Subject: RE: 2026-06-22 FAA to SHPO - Airlake Airport (LVN) Runway Project

CAUTION: This email originated from outside of the Federal Aviation Administration (FAA). Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Melissa – I assume we can just replace the earlier submission with this one? I'm not seeing that Mead and Hunt prepared an inventory form for the airport itself – I see inventory forms for

the Airlake Airport Terminal/FBO Office (DK-LKC-00039) and the Airlake Hangar (DK-LKC-00040) but not an inventory form for the airport itself.

The inventory forms for these two properties state the following (see attached from from MnSHIP):

“most buildings at the airport date to within the last 40 years and, overall, the Airlake Airport does not retain sufficient cohesion among its extant resources to qualify as a historic district. The property does not have potential to provide information important to history. Therefore, it does not meet the significance requirements of Criterion D. This property was considered for its potential to contribute to a historic district, but no potential district was identified.

Mead and Hunt should have prepared an inventory form for the Airlake Airport as well with their recommendations that the airport does not retain sufficient “cohesion” (I think they mean integrity) “among its extant resources to qualify as a historic district”. Please have them prepare and submit an inventory form for the airport

Thanks,

Kelly

Kelly Gragg-Johnson

Environmental Review Specialist | SHPO

she/her/hers

Minnesota Department of Administration

50 Sherburne Avenue

Saint Paul, MN 55155

O: 651-201-3285

mn.gov/admin



-

From: Jenny, Melissa M (FAA) <Melissa.M.Jenny@faa.gov>

Sent: Wednesday, July 8, 2026 2:59 PM

To: MN_ADM_ENV Review SHPO <ENReviewSHPO@state.mn.us>

Cc: GraggJohnson, Kelly (ADM) <kelly.graggjohnson@state.mn.us>

Subject: RE: 2026-06-22 FAA to SHPO - Airlake Airport (LVN) Runway Project

Hi SHPO:

The MAC added a few more items to the runway project at the Airlake Airport, see project figure item 15 & 16 below.

#15 – they're relocating a public aircraft viewing area to spot shown below. This will be located slightly outside of cultural resource survey boundaries, but like the rest of the airport this area has low potential to harbor resources.

#16 – they're expanding a stormwater pond within surveyed area.



The attached submittal has been slightly modified to include these actions for your review/concurrence.

Also, this project has a very aggressive schedule. Any efforts that you can make to expedite your review to assist your sister agency, the MAC, would be much appreciated!

-

Hopefully with provided survey work this will be a simple No Historic Properties Affected review/concurrence for you.

Many thanks!

Thank you,



Melissa Jenny
Environmental Protection Specialist
FAA-Dakota Minnesota Airports Office
U.S. Department of Transportation
(612) 253-4633
Melissa.m.jenny@faa.gov

From: Jenny, Melissa M (FAA)
Sent: Monday, June 22, 2026 3:55 PM
To: MN_ADM_ENV Review SHPO
Cc: 'GraggJohnson, Kelly (ADM)'
Subject: 2026-06-22 FAA to SHPO - Airlake Airport (LVN) Runway Project

Hello SHPO:

Please see the attached letter and supporting information requesting SHPO concurrence with FAA's Sec. 106 No Historic Properties Affected determination for the Airlake Airport Runway Improvement Project.

The attached reports will be submitted into appropriate E-Systems and see emails below about this one.

Feel free to reach out if you have any questions.

Thank you,



Melissa Jenny
Environmental Protection Specialist
FAA-Dakota Minnesota Airports Office
U.S. Department of Transportation
(612) 253-4633
Melissa.m.jenny@faa.gov

From: Jenny, Melissa M (FAA)
Sent: Thursday, June 11, 2026 1:28 PM
To: GraggJohnson, Kelly (ADM) <kelly.graggjohnson@state.mn.us>
Subject: RE: Airlake Airport – Federal EA / State EAW Agency Scoping Meeting Follow-up

Hi Kelly,

Correct. They're wrapping up survey reports, and I'll be submitting to you soon for No Historic Properties Affected concurrence.

Thank you,

Melissa Jenny
Environmental Protection Specialist
FAA-Dakota Minnesota Airports Office



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

June 22, 2026

Minnesota State Historic Preservation Office
c/o Kelly Gragg-Johnson
50 Sherburne Ave, Suite 203
St. Paul, MN 55155

Re: Airlake Airport (LVN) Airfield Improvements Project

Project location: The airport is in the City of Lakeville and Eureka Township, Dakota County, Minnesota.

Sections 3, 4, 5 (T113N-R20W) and 32, 33 (T114N-R20W). The approximate center point of the project is Lat: 44.627, Long: -93.227

Dear Ms. Gragg-Johnson:

The Federal Aviation Administration (FAA) has determined that a National Historic Preservation Act Section 106 finding of *No Historic Properties Affected* is applicable for the Airlake Airport (LVN) Airfield Improvements Project, as described in the attached Section 106 findings memo. The FAA respectfully requests the Minnesota State Historic Preservation Office to provide written concurrence with this Section 106 determination within 30 days of receipt of this letter.

If you have any questions about this project, please feel free to contact me at Melissa.m.jenny@faa.gov or at (612) 253-4633.

Sincerely,

A handwritten signature in black ink, appearing to read "Melissa Jenny".

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

FEDERAL AVIATION ADMINISTRATION (FAA)
DOCUMENTATION OF SECTION 106 FINDING
OF NO HISTORIC PROPERTIES AFFECTED
SUBMITTED TO THE MINNESOTA STATE HISTORIC PRESERVATION OFFICE
(SHPO) PURSUANT TO 36 CFR SECTION 800.4(d)(1) FOR THE AIRLAKE
AIRPORT (LVN) AIRFIELD IMPROVEMENTS PROJECT

1. DESCRIPTION OF THE UNDERTAKING

The Airlake Airport (LVN) is proposing airfield improvements including reconstruction and extension of Runway 12/30; taxiway extensions, relocations, and modifications; installation of airfield lighting; removal of select trees; relocation of 225th Street West; relocation of an intermittent stream, relocation of a public viewing area and expansion of a storm water pond. The total project area encompasses approximately 30 acres. The project is shown in Figure 1.

2. AREA OF POTENTIAL EFFECT

The Area of Potential Effect (APE) is the area where an undertaking may affect a historic property, either directly or indirectly. The direct effects APE includes all areas of ground disturbance and construction associated with the undertaking, as depicted in Figure 1. The indirect effects APE includes the full extent of the existing Airlake Airport property boundary and a small area southwest of the Cedar Avenue/225th Street intersection, consistent with the APE defined in the 2023 Phase I survey. The APE also accounts for potential visual and audible effects associated with aircraft operations within the 65 DNL noise contour.

3. EFFORTS TO IDENTIFY HISTORIC PROPERTIES

A Phase I archaeological survey and Phase I architectural history survey were completed in August 2022. Section 106 documentation was initially prepared in 2022-2023 following Minnesota State Historic Preservation Office (SHPO) documentation and evaluation standards at that time. The report and inventory forms were submitted to FAA on August 9, 2023; however, the proposed project was put on hold until 2026.

Archaeological investigations conducted by Mississippi Valley Archaeology Center (MVAC) in 2022 included records review, pedestrian survey, and shovel testing within areas of proposed ground disturbance; no archaeological sites or cultural materials were identified. A 2026 literature review was completed to evaluate revised project areas, including a review of the Office of the State Archaeologist (OSA) Portal and other archival sources. This updated review found no previously recorded archaeological sites located within the project area or within one mile. Based on the results of the Phase I survey and 2026 literature review and given the extensive disturbance evident within the developed project area, there is low potential for intact cultural materials. No further archaeological investigation is recommended.

Architectural history investigations identified three historic-age resources (40 years of age or more) within the APE: the Airlake Airport Terminal/FBO Office, an Airlake Airport Hangar, and a segment of the Minneapolis St. Paul Rochester & Dubuque Electric Traction Company (MStPR&DETC) Railroad Corridor. A literature review of Minnesota SHPO records indicated the Railroad Corridor was previously surveyed (within the last 10 years) and determined not eligible for listing in the National Register of Historic Places (National Register); thus, no site form was prepared, and no further study is necessary. Qualified historians from Mead & Hunt evaluated and recommended not eligible for listing in the National Register of Historic Places the two additional historic-age resources.

In 2026, Mead & Hunt historians reviewed the initial findings, took updated photos of the surveyed properties, and revised the subject report and associated inventory forms to meet current standards. Records for individual properties were submitted via Minnesota's Statewide Historic Inventory Portal (MnSHIP).

Post-survey the project was modified to include the relocation of a public airport viewing area and shelter structure, identified as #15 on the attached project figure. This work is described in Attachment 5.

4. BASIS FOR FINDING

No archaeological resources were identified during Phase I investigations or subsequent literature review, and the project area exhibits extensive prior disturbance and low potential for intact deposits. All identified architectural history properties within the APE have been evaluated and recommended not eligible for listing in the National Register of Historic Places. The undertaking will not alter characteristics of any historic properties that would qualify them for inclusion in the National Register.

Based on the information provided above, the FAA has determined that a Section 106 finding of *No Historic Properties Affected* is appropriate for this project. The FAA requests that the SHPO provide written concurrence with this finding within 30 days.

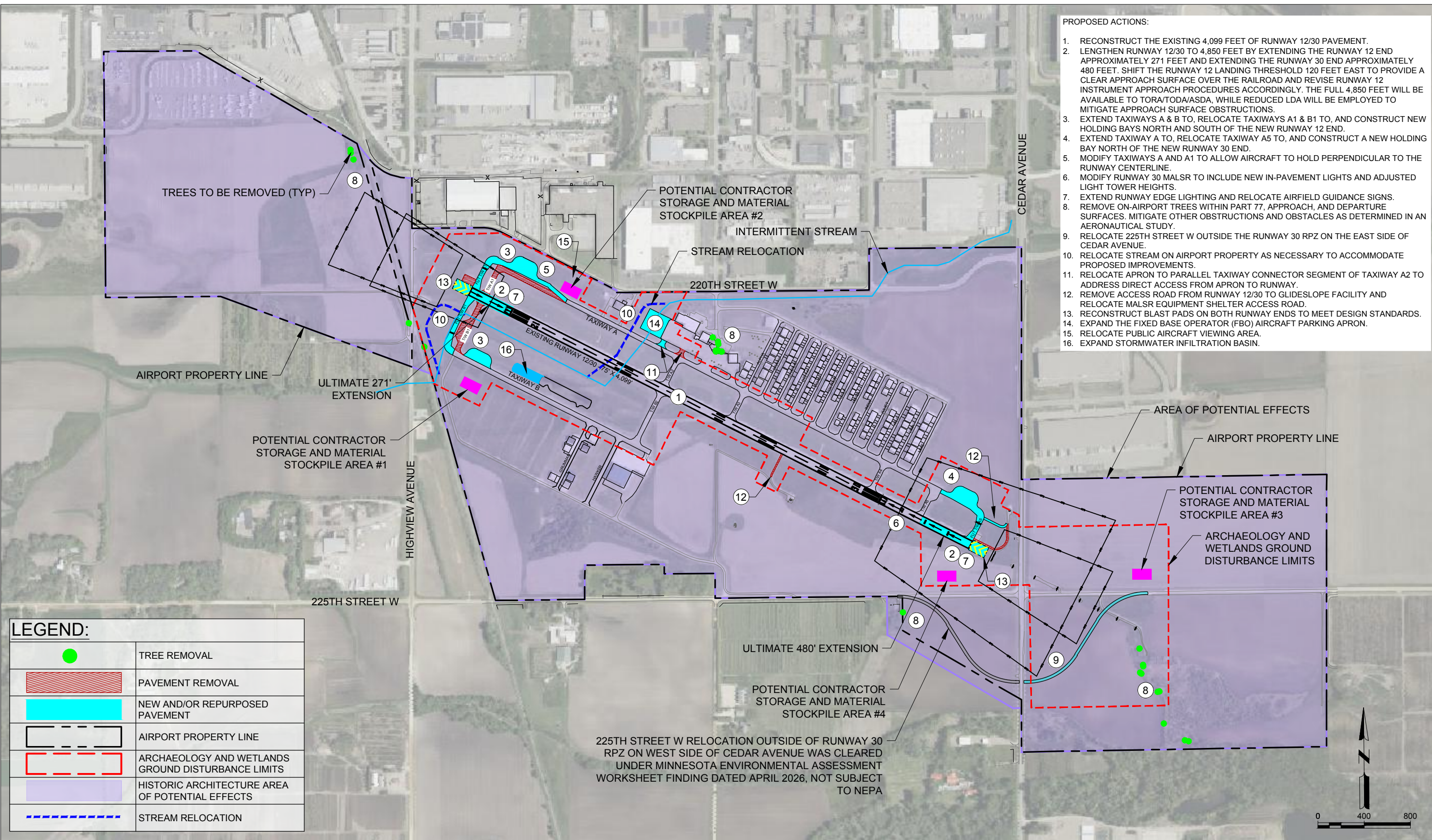
ATTACHMENTS

- Attachment 1 – Airlake Airport Sponsor's Proposed Project – Figure 3.7
- Attachment 2 – Phase I Archaeological Survey for Improvements at the Airlake Airport in Dakota County, Minnesota (MVAC, September 2022)
- Attachment 3 – Literature Review for Additional Airport Improvements at Airlake Airport in Dakota County, Minnesota (MVAC, June 2026)
- Attachment 4 – Airlake Airport Architectural History Phase I (Reconnaissance Survey) Report (Mead & Hunt, August 2023, Updated May 2026)
- Attachment 5 - Relocation of public airport viewing area

Attachment 1

Airlake Airport Sponsor's Proposed Project

7/7/2026 10:19:33 AM
X:\2838700\220268\01\TECH\A\2026\DRP LTP FIGURE 2.7.DWG



AIRLAKE AIRPORT
LAKEVILLE, MINNESOTA

2838700-220268.01
MAY 2026

AIRPORT SPONSOR'S PROPOSED PROJECT



FIGURE 2.7

Attachment 2

Phase I Archaeological Survey for Improvements at the Airlake Airport in Dakota
County, Minnesota



September 19, 2022

MVAC SR 2022-162

Timothy Smith
Mead and Hunt
7900 International Dr Suite 980
Bloomington, MN 55425

RE: Results of the Phase I Archaeological Survey for Improvements at the Airlake Airport in Dakota County, Minnesota.

Dear Mr. Smith,

This letter report describes Phase I archaeological investigations of approximately 30 acres for proposed runway extensions, taxiways, roads, and associated infrastructure projects on Airlake Airport property near Lakeville, Minnesota (Figure 1). The project lies in the Town of Eureka and the City of Lakeville. Staff from the Mississippi Valley Archaeology Center (MVAC) performed the fieldwork on August 30, 2022. The Phase I survey recovered no cultural materials within the project areas and no further archaeological investigations are recommended.

Project Description: The Airlake Airport is owned by the Metropolitan Airports Commission. In accordance with Minnesota Statue 138.31-422, a Survey License was obtained from the Minnesota Historical Society to conduct a Phase I archaeological survey on public lands (Appendix A). The project areas encompass approximately 30 acres in Sections 3, 4, 5 in the Town of Eureka (T113N-R20W) and Sections 32, 33, in the City of Lakeville (T114N-R20W).

The proposed actions include (Figure 2):

1. Reconstruct the existing 4,099 feet of Runway 12/30 pavement
2. Lengthen Runway 12/30 to 4,850 feet by extending Runway 12 end approximately 271 feet and extending Runway 30 end approximately 480 feet
3. Extend Taxiways A & B to, relocate Taxiways A1 & B1 to, and construct new holding bays north and south of the new Runway 12 end.
4. Extend Taxiway A to, relocate Taxiway A5 to, and construct a new holding bay north of the new Runway 30 end.
5. Modify Taxiway A and/or A1 to allow aircraft to hold perpendicular to the runway centerline
6. Modify Runway 30 MALSR to include new in-pavement lights and adjusted light tower heights
7. Extend runway edge lighting and relocate airfield guidance signs
8. Remove on-airport trees within Part 77, approach, and departure surface
9. Relocate 225th Street West outside the Runway 12 RPZ
10. Relocate trout stream tributary on airport property as necessary to accommodate proposed improvements

Potential proposed actions being studied in the EA/EAW:

11. Address non-standard conditions associated with Taxiways A2, A3, and B2.

Potential connected action:

12. Expand the fixed base operator (FBO) aircraft parking apron.

Previously Reported Archaeological Sites: A list of recorded archaeological sites within one mile of the project area was requested from the Minnesota State Historic Preservation Office (SHPO). According to

the SHPO database, there are no archaeological sites overlapping the Airlake Airport project area, nor are there any sites recorded within one mile of the airport (Appendix B).

In 2019, the 106 Group completed a cultural resources literature review and archaeological assessment for the Airlake Airport (Lund-Kyrola and Que 2019). The literature review identified one previously inventoried, one previously recommended potentially NRHP-eligible, and two previously recommended not NRHP-eligible architectural history properties within their study area. The NRHP-eligible property is the Lakeville to Northfield segment of the Minneapolis St. Paul Rochester & Dubuque Electric Traction Company (MStPR&DETC)/Minneapolis Northfield & Southern Railway (Lund-Kyrola and Que 2019). The property was constructed in 1911 and separates the east and west portions of the current project area. No work is proposed within the railroad right-of-way. The assessment determined that areas within 300 feet of the historic properties possess moderate to high potential to contain intact post-contact archaeological resources. Areas within 500 feet of the Vermillion River possess moderate to high potential to contain intact precontact archaeological resources. Areas within the airport previously subjected to ground disturbance or lacking indicators of archaeological potential were deemed to possess low potential to contain intact precontact or post-contact archaeological resources. The 106 Group recommended archaeological investigations to identify any potentially significant and intact archaeological resources present in portions of their archaeology study unit identified as having moderate to high potential for archaeological resources (Lund-Kyrola and Que 2019). A historical cemetery, the Greenwood Cemetery, lies outside the airport property on the north side of 225th Street West, 475 feet west of the Hamburg Avenue/225th Street West intersection. The cemetery is 0.2 miles south and 0.6 miles west of the current project area.

Soils, Vegetation, and Landscape Change: The United States Department of Agriculture - Natural Resources Conservation Services Web Soil Survey (USDA-NRCS) was consulted to determine the soils within the project area. The predominant soil type within the project areas is Waukegan silt loam (0-6% slope). This soil type is found on stream terraces and outwash plains and form in glaciofluvial sediments over outwash. The soils are classified as well drained (USDA 2022). Soils immediately adjacent to the stream tributary are Marshan silty clay loam found on the flats on stream terraces and outwash plains. This soil type is formed over glaciolacustrine sediments over outwash and are classified as poorly drained (USDA 2022).

Prior to European settlement the project area would have consisted of prairie, and according to the GLO field notes for T113N and T114N, the area was considered good for hay (GLO Historic Plat Map Retrieval System 2022). The 1939 air photo of the project area indicates most of the current airport property was cultivated, with 4 farmsteads within the airport boundaries (Figure 3).

Fieldwork: On August 30, 2022, MVAC personnel conducted a Phase I survey within those areas slated for improvements. For safety purposes, MVAC staff were escorted by the Airlake Airport management staff while working along the runways, taxiways, and other sensitive areas within the Area of Potential Effect (APE). Most of the project areas within the developed portions of the airport exhibited previous disturbance. Outside the developed area of the airport, the project area consisted of cultivated fields, mowed grass, slope, and wetlands. None of architectural history properties referenced by Lund-Kyrola and Que (2019) were within the current project areas.

Proposed action #1: Archaeological survey was not required for the reconstruction of the existing 4,099 feet of Runway 12/30 pavement.

Proposed actions # 2, 3, 4, 5, 6, and 7: Shovel testing was conducted in grassy areas associated with proposed work to extend, relocate, and/or modify taxiways and runways; construct new holding bays; and extend runway edge lighting and relocate airfield guidance signs. Due to their proximity to the existing

runways and taxiways, shovel tests in these areas indicated previous disturbance from construction, fill, and landscaping. Proposed action #4 overlapped a small section of cornfield, over which pedestrian survey was conducted with a minimum of 80% visibility.

Typical shovel test profile at the northwest end of Runway 12/30 and adjacent areas:
0-19 cm below ground surface (cmbgs): black (10YR 2/1) sandy loam over
19-27 cmbgs: yellowish brown (10YR 5/6) sand, with many pebbles, likely disturbed
27+ cmbgs: subsoil, yellowish brown (10YR 5/6) sand

Typical shovel test profile at the southeast end of Runway 12/30 and adjacent areas:
0-16 cmbgs: dark brown (10YR 3/3) sandy loam over
16-21 cmbgs: dark yellowish brown (10YR 4/4) slightly clayey sandy loam
21+ cmbgs: subsoil, dark yellowish brown (10YR 4/4) sandy loam

Proposed action # 8: Shovel testing was conducted where appropriate for the proposed removal of on-airport trees within Part 77, approach, and departure surfaces (Figure 4). Shovel tests were excavated north of the fixed-base operator (FBO) building. Shovel tests placed at the FBO were excavated to 30 cmbgs and exhibited previous disturbance from landscaping and fill. Pedestrian survey was conducted in the southeast corner of the airport property, where tree removal was proposed immediately adjacent to cultivated fields. Pedestrian survey was undertaken at 10 meter intervals, with 75% visibility in the cornfields. Survey was not required in areas of slope, obvious disturbance related to railroad track construction, or wetlands.

Proposed action #9: The proposed relocation route for 225th Street West outside the Runway 12 RPZ runs primarily through cornfields (see Figure 4). The 2019 assessment indicates part of this area has moderate to high potential for post-contact archaeological resources (Lund-Kyrola and Que 2019), so investigations in this area were conducted at close intervals. Pedestrian survey was undertaken along the project area at 10 meter intervals, with 75% visibility. Two shovel test transects were placed in a hayfield at the eastern end of the proposed road. Shovel tests were excavated at 10 meter intervals and dug to the subsoil, to an average depth of 40 cmbgs. Shovel tests were dug through dark brown (10YR 3/3) silty loam over dark yellowish brown (10YR 4/4) gravelly sand.

Proposed action #10: Shovel testing was conducted along both areas where the relocation of a trout stream tributary is proposed. One shovel test transect was placed on both sides of the stream at each location. Shovel tests were excavated at 15 meter intervals and dug to the subsoil, to an average depth of 30 cmbgs. Shovel tests were dug through black (10YR 2/1) sandy soil over dark yellowish brown (10YR 4/6) slightly clayey sandy loam.

Potential proposed action #11: Taxiways A2, A3, and B2 were visually inspected, as non-standard conditions associated with the taxiways may need to be addressed. Previous disturbance related to construction, landscaping, and drainage systems was noted along all the taxiways, and no shovel testing was required.

Potential connected action #12: Shovel testing was conducted throughout the FBO aircraft parking apron expansion area. Shovel tests excavated in this area exhibited previous disturbance, potentially related to grading and/or building construction.

All shovel tests were excavated at 15 meter intervals to the subsoil unless otherwise noted above. All soils were screened using ¼" mesh hardware screen. All field notes and digital photographs of the project will be on file at the MVAC laboratory.

Results and Recommendations: No cultural materials were encountered during the Phase I survey conducted for Improvements at the Airlake Airport in Dakota County, Minnesota. Close interval testing was conducted in areas with moderate to high potential for post-contact archaeological resources in the southeast corner of the project area. No cultural materials or evidence of post-contact structures were recovered. Therefore, it is recommended that the project proceed as planned, and no further archaeological investigations are recommended.

Sincerely,

Jean Dowiasch

Jean Dowiasch
Senior Research Archaeologist
Mississippi Valley Archaeology Center
University of Wisconsin–La Crosse
1725 State Street
La Crosse, WI 54601
(608)792-0781, jdowiasch@uwlax.edu

Vicki L. Twinde-Javner

Vicki Twinde-Javner
Principal Investigator
Mississippi Valley Archaeology Center
University of Wisconsin–La Crosse
1725 State Street
La Crosse, WI 54601
(608) 785-6475

References Cited

GLO Historic Plat Map Retrieval System

2022 Digital Public Land Survey Plat Map Images. Accessed online September 2022.
<https://www.mngeo.state.mn.us/glo/>

Lund-Kyrola, Tyler and Erin Que

2019 *Cultural Resources Literature Review and Archaeological Assessment for the Airlake Airport, Eureka Township and Lakeville, Dakota County, Minnesota*. 106 Group Project No. 2392, St. Paul.

Office of the State Archaeologist Portal

2022 *Archaeological site inventory*, Fort Snelling History Center St. Paul, Minnesota.

USDA-NRCS Soil Survey Division (USDA-NRCS)

2022 *Web Soil Survey: Washington County, Minnesota*. Accessed online April 2022.
<https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

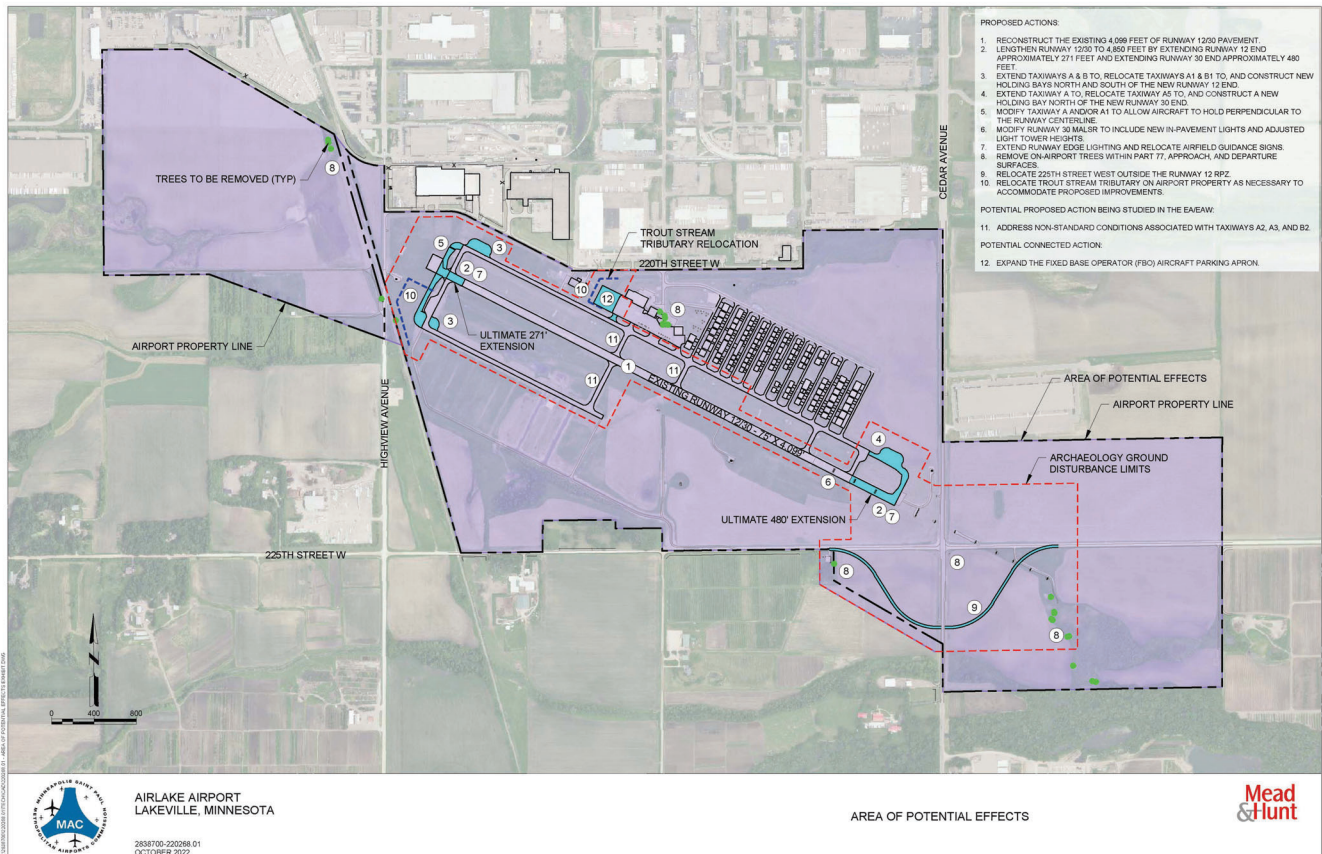
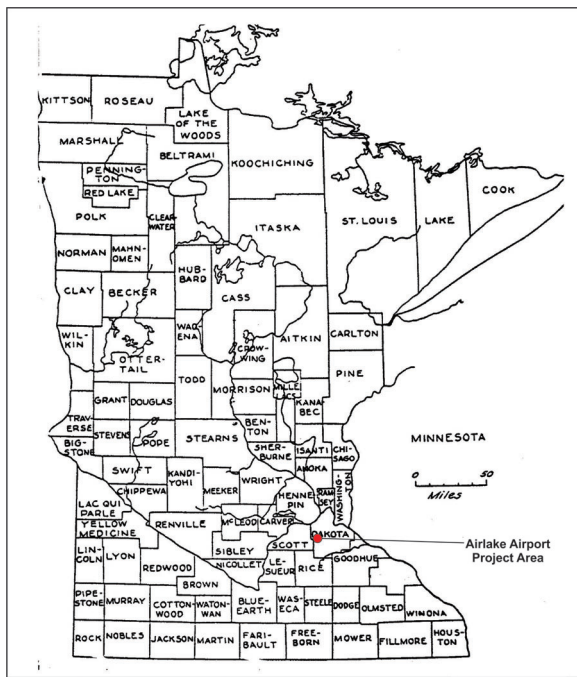


Figure 1. Project location in the City of Lakeville and Town of Eureka, Dakota County. A Phase I archaeological survey was conducted at the numbered locations within the airport property. Provided by Mead & Hunt 2022.

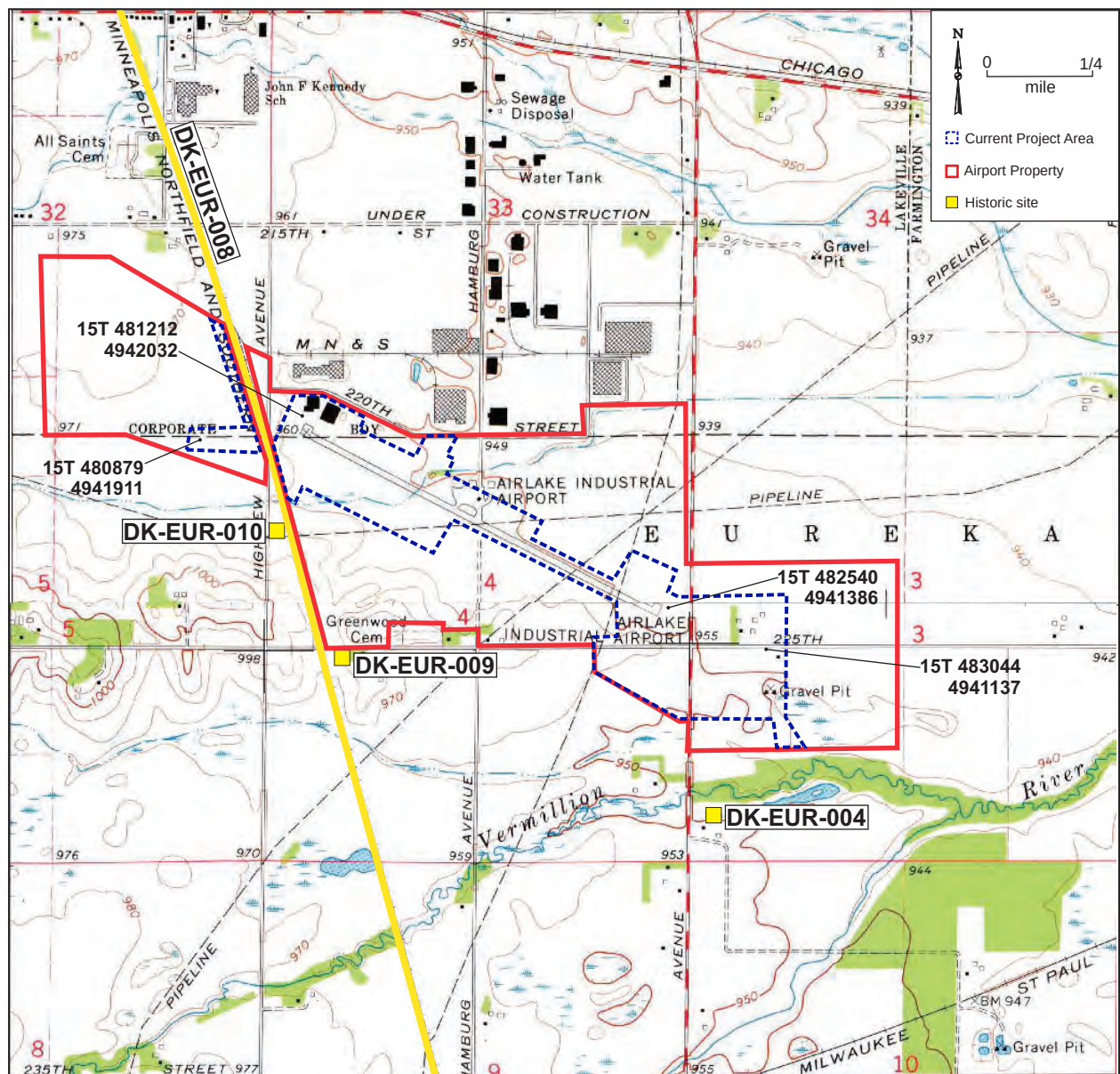


Figure 2. Improvements to the Airlake Airport are proposed within the blue dashed lines. Castle Rock and Farmington 7.5' USGS topographic maps.

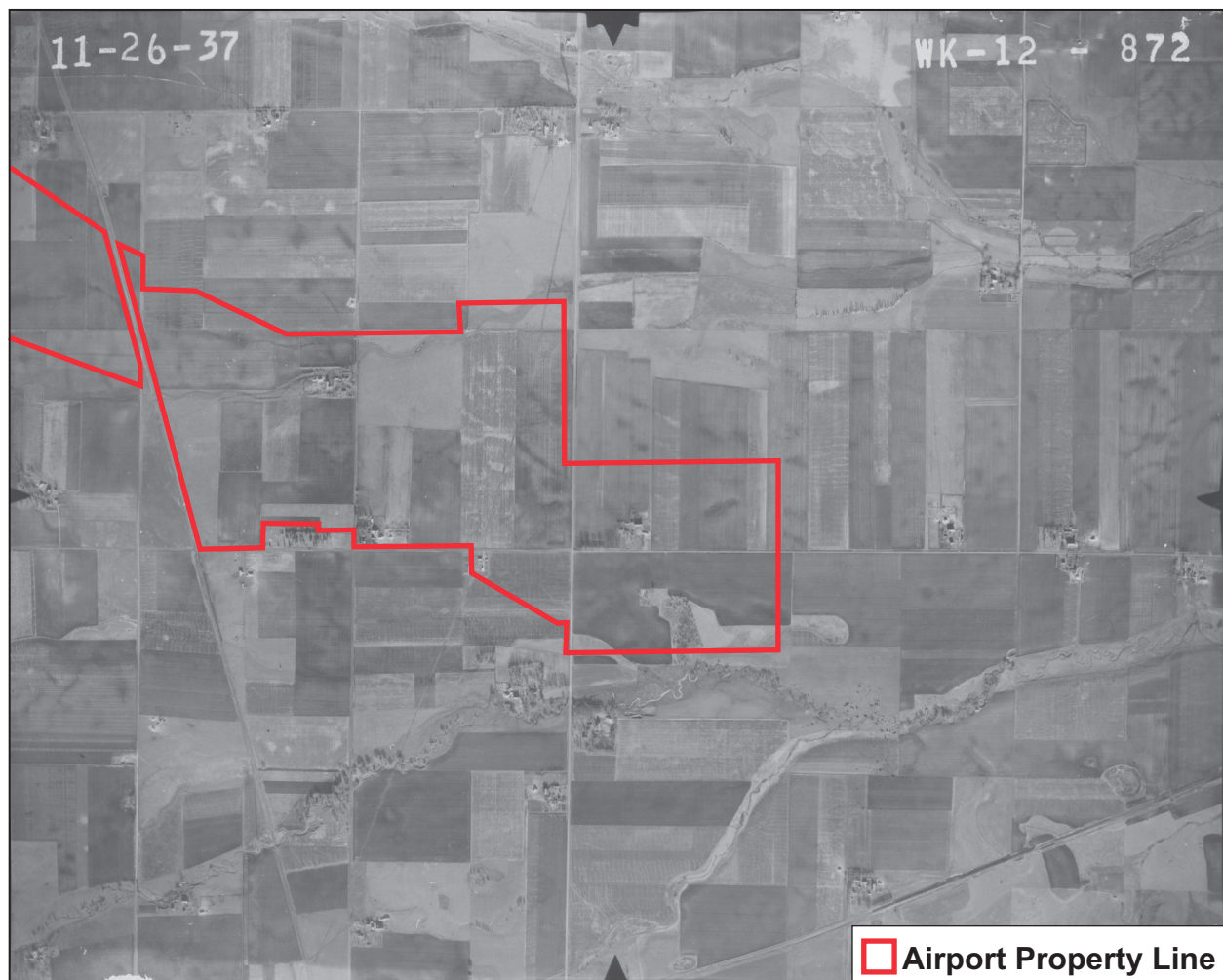


Figure 3. The 1937 air photo indicates most of the air property was cultivated at the time (OSA Portal 2022). The airport property extends to the west of the photo but the project area does not extend into that area.

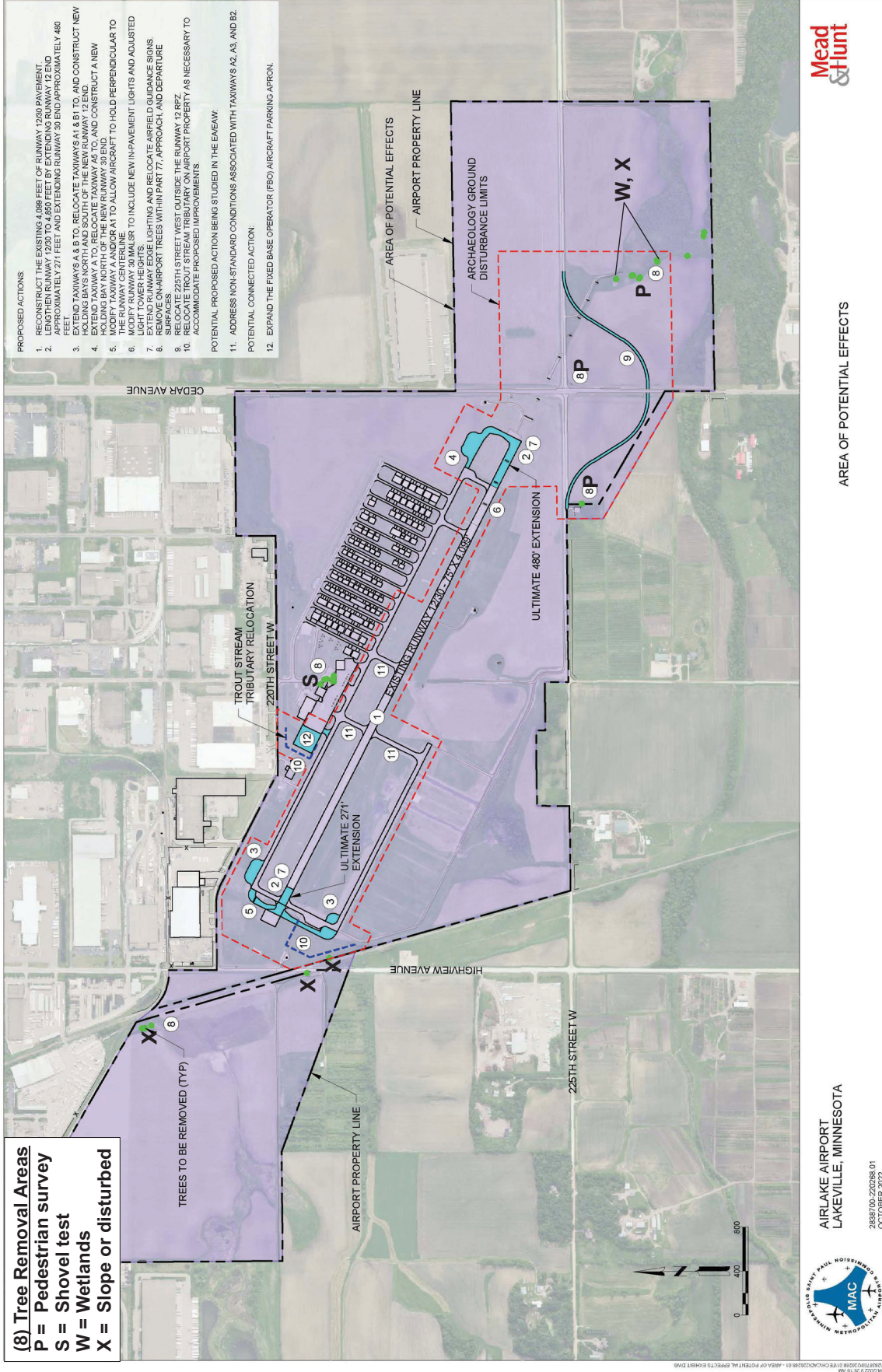


Figure 4. Phase I archaeological survey for proposed tree removal locations (8) consisted of shovel testing and pedestrian survey. Survey was not required in areas of slope, wetlands, and previous disturbance. Shovel testing and pedestrian survey were conducted along the 225th Street West relocation area (9). Base map provided by Mead & Hunt 2022.



Figure 5. Northwest end of Runway 12/30. Top: shovel testing along the taxiway, view facing southeast. Bottom: previous disturbance was evident from drainage systems, fill, and construction associated with the airport runways and taxiways, view facing southeast.



Figure 6. Southeast end of Runway 12/30. Top: pedestrian survey was conducted in a cornfield northeast of the runway, view facing along northwest. Bottom: shovel testing was conducted at the end of the runway, view facing northwest.



Figure 7. Pedestrian survey was undertaken for the relocation of 225th Street West, view facing east.



Figure 8. Top: shovel testing along the trout stream relocation area, view facing northwest. Bottom: previous disturbance was evident along both sides of the taxiways, view facing northeast.

Appendix A

Phase I Survey License

MINNESOTA ARCHAEOLOGICAL SURVEY LICENSE APPLICATION

This license only applies to **Phase I survey fieldwork**¹ conducted under **Minnesota Statute 138.31-.42**² at the location listed below and during the **2021** calendar year³. Any archaeological investigation performed on publicly owned or managed (non-federal) land must have a licensed archaeologist associated with the project. Archaeological investigations include, but are not limited to, the following methodologies: assessing archaeological potential, mapping, geophysical studies, drone surveys, surface survey, shovel testing, coring, soil, chemical and biological sampling, augering, and excavation⁴.

The Principal Investigator must have a separate license for each Phase I survey project. Each Phase II evaluation, Phase III major investigation, and burial site work must also be individually licensed. Only the individual indicated below is licensed as the principal investigator⁵. *The principal investigator is responsible for all work conducted by their employees, contractors, and subcontractors*⁶. The licensed individual (principal investigator) is responsible for reading, understanding, and complying with all Conditions attached to this license. Future licenses may be denied or revoked for failure to comply with this license, its conditions, professional ethics, or professional work standards.

Applicant Information

Name: Vicki Twinde-Javner

Institution/Agency/Company Affiliation: Mississippi Valley Archaeology Center

Title/Position: Principal Investigator

E-Mail: vtwinde-javner@uwlax.edu

Address: 1725 State Street La Crosse WI 54601

Work Phone: 608-785-6475

Cell Phone: 608-386-8967

Education/Qualifications

Name of Advanced Degree Institution: UW-Milwaukee

Degree: MS

Department Name: Anthropology

Year of Completion: 1997

Required documentation:

☒ Curriculum Vita and documentation of appropriate experience attached (*submit an updated CV annually*)

☐ Up-to-date CV and documentation on file at the OSA

¹ The study of the traces of human culture at any land or water site by means of surveying, digging, sampling, excavating, or removing objects, or going on a site with that intent (MS 138.31 [Subd. 7])

² State archaeological licenses are required on publicly owned and managed (non-federal) land.

³ January 1st through December 31st of a given year

⁴ As technologies change, survey options increase. This list is not intended to be nor can it be comprehensive.

⁵ The individual named on this license. The Principal Investigator is responsible for the methods, implementation, standards, results, and recommendations of all work conducted under this license.

⁶ Any person or entity working for or under the Principal Investigator's direction or contract as part of this license.

License History

Year of most recent license: 2020

Type of License (survey, evaluation, etc.): Survey

License #: 20-063

Have you ever been denied an archaeological license? If not, check "NO" and leave this section blank.)



No



Yes; If yes, when: _____

Where: _____

Explain: _____

Contact Name: _____

Phone: _____

Email: _____

Curation



Minnesota Historical Society #: 995



Other Approved Curation Facility Name: _____ #: _____

By signing this license application, I consent to the sharing of information submitted as part of the licensing process among the Office of the State Archaeologist (OSA), the Minnesota Historical Society (MHS), and the Minnesota Indian Affairs Council (MIAC). As the primary licensing agencies, OSA and MHS may share license application information with MIAC and Tribal Historic Preservation Offices (THPOs) as part of the tribal consultation process. I understand that the information shared with MIAC includes only the information I submit as part of the license application process. This consent expires upon completion of the above-stated purpose.

Signatures

Applicant: _____

Date: 8/9/2022

Minnesota Historical Society Approval: _____

Date: 08/19/2022

Minnesota State Archaeologist Approval: _____

Date: 8/18/2022

LICENSE NUMBER: 22-198

MINNESOTA ARCHAEOLOGICAL PROJECT INFORMATION

LICENSE #: 22-198

** IMPORTANT - This information will be shared with MIAC and tribal officials as part of the tribal consultation process.*

Applicant Information

Name: Vicki Twinde-Javner

Institution/Agency/Company Affiliation: Mississippi Valley Archaeology Center

Land Management

Type of Land: (check all that apply)

☐ State-Owned or Managed

☐ County-Owned or Managed

☐ Township/City Owned or Managed

☒ Other non-federal public (describe): Metropolitan Airports Commission

Dates

Dates of proposed fieldwork: August 5, 2022 - December 31, 2022

Is the project within a recorded archaeological site? ☐ Yes ☒ No

If so, what are the site number(s)? _____

Survey: Give the name, purpose of the project and proposed survey methods (attach pages if necessary)

Name: Airlake Airport Phase I Survey

Purpose: Survey of up to 30 acres for proposed improvements at the airport including runway extensions, taxiways, roads, and associated infrastructure.

Proposed survey methods: Survey methods will include shovel testing at 15 meter intervals in vegetated areas and pedestrian survey in areas with surface visibility over 30%. Due to construction of existing facilities, it is likely that many areas of proposed disturbance for the current projects have been disturbed. If areas appear disturbed, a sample shovel test(s) will be dug to confirm.

Survey areas (attach a detailed map for each survey area):

Location (include an address or Property ID #, and PLSS location):

Airlake Airport
8140 220th St. W.
Lakeville, MN 55044
(T113N-R20W Sec. 3, 4; T114N-R20W Sec. 33)

CONDITIONS OF MINNESOTA ARCHAEOLOGICAL SURVEY LICENSE

1. The licensed individual and the sponsoring institution/agency/company must comply with all the conditions attached to the license. If the licensee does not comply with these conditions, the license could be revoked and impact one's ability to obtain future licenses.
2. All information given on this license application is accurate and up to date.
3. The individual listed on this license is responsible for all work of their employees, contractors, and subcontractors.
4. A license can be denied for any of the following reasons: a) failure to meet the required professional qualifications standards, b) failure to possess the necessary regional, topical, or managerial experience, c) failure to fulfill the conditions of a previous license, or d) exhibiting unethical professional behavior, including, but not limited to falsifying field notes or reports, plagiarism, intentionally misrepresenting professional qualifications or experience, mishandling archaeological and site information or materials owned by the state per MS 138.37 (Subd. 1).
5. This license can be revoked or suspended by the State Archaeologist or the director of the MHS, or their agent, at any time for failure to fulfill the license conditions or for exhibiting unethical behavior such as listed above (4). Appeals of license denial, suspension, or revocation must follow procedures outlined in Minnesota Statutes 138.36, Subd. 6
6. As part of this license and in support of Executive Order 19-24, licensing information will be submitted to MIAC and tribal officials as part of the tribal consultation process. The licensee is strongly encouraged to continue consultation with MIAC and appropriate THPOs.
7. If the project area is within the boundaries of a reservation or Dakota community, archaeologists should directly communicate with the appropriate THPO or tribal cultural resource specialist regarding the proposed work.
8. If the project area is on Federal land, archaeologists should directly communicate with the federal agency regarding proposed work.
9. Under the provisions of Minnesota Statutes 138.31-138.42, the license applicant must be a Qualified Professional Archaeologist as specified in Minnesota Statutes (MS) 138.31, Subd. 10, and meet the Secretary of the Interior's Professional Qualifications Standards for Archaeology. The applicant must also possess the appropriate regional, topical, and managerial experience to undertake reconnaissance surveys.
10. This license only applies to Reconnaissance/Phase I archaeological surveys conducted on non-federal public lands in Minnesota. If more than two square meters of formal unit excavation or procedures that involve terrain disturbance (e.g., machine excavation) at a known site are planned, the principal investigator must consult with the Office of the State Archaeologist (OSA) before implementation.
11. This license does not authorize activities within cemeteries, per Minnesota Statutes 307.08. No ground disturbance within 50 feet of recorded cemeteries is allowed, without the prior approval of the State Archaeologist and the Minnesota Indian Affairs Council, in the case of American Indian cemeteries. If human remains or suspected burial-related items are encountered, all work must immediately cease, the remains or items left in situ, and law enforcement contacted (e.g., county sheriff). If the remains are not deemed a crime scene, the licensee must immediately contact the State Archaeologist.
12. This license only applies to fieldwork conducted between the dates specified on this license application.
13. This license applies only to the location specified on this license application.
14. If the licensee ceases association with the institution/agency/company before completing the project, immediately notify the OSA. The OSA and licensee or institution/agency/company

- will develop a plan to fulfill reporting and curation obligations.
17. The license is non-transferable and applies only to work conducted under the direct supervision of the licensee.
 18. The licensee must comply with the field, laboratory, and reporting guidelines in the *OSA Manual for Archaeological Projects in Minnesota*. Any exceptions must be discussed with the OSA before work occurs.
 19. The licensee must obtain permission from the landowner or land manager to enter the land for archaeological investigations.
 20. All archaeological materials and data recovered from non-federal public property in Minnesota are the state's property and should be curated with the MHS (<http://www.mnhs.org/collections/archaeology/curation.htm>), or other OSA approved facility.
 21. If materials, samples, or data are being processed or analyzed by an entity other than that with which the principal investigator is associated, the principal investigator must notify the OSA and MHS.
 22. If materials or samples are to leave the state of Minnesota, the OSA and MHS must approve the transport before materials, samples, or data leave the state.
 23. Official OSA Minnesota site inventory forms must be completed for all archaeological sites identified during surveys (previously recorded and known sites). The site forms must be submitted to the OSA within three months of site discovery. Professional archaeologists are also ethically obligated to inform the OSA if previously unrecorded archaeological sites located outside their project boundaries are identified during their project survey.
 24. One copy of the report (see *OSA Manual for Archaeological Projects in Minnesota*) must be submitted to the OSA for each project within six months of completing the fieldwork. The licensee may submit a written application requesting an extension of this deadline. Digital copies of reports are accepted as .pdf files.
 25. If presentations or publications develop from this project, the OSA and MHS must be notified, and the following information submitted for inclusion in the archaeological site files:
 - a. Location of presentation or publication,
 - b. Date
 - c. Title
 - d. Abstract
 - e. The final and complete version of the presentation, publication, etc.
 26. The licensee must submit a summary report of all licensed activity to the OSA by the end of January of the following year. Summaries should include:
 - a. project name and description (e.g., road construction),
 - b. sponsor/review agency,
 - c. location,
 - d. type of work (Phase I, Phase II) and field methods (e.g., shovel testing),
 - e. results (number of sites located/type of sites or official site numbers) and recommendations
 27. Upon completing the project, the licensee must submit .shp files to the OSA. These files should show the project's Area of Potential Effect and archaeological survey areas, including the type of survey conducted in each survey area. Templates for submitting .shp files are at <https://mn.gov/admin/archaeologist/professional-archaeologists/manuals-licenses/license-types/>. Please do not alter these templates.
 28. Additional conditions may be added, as appropriate. If this occurs, the applicant will be notified of the update and asked to submit a response accepting the Condition.

29. Minnesota Department of Health and the Center for Disease Control recommendations regarding COVID-19 and limiting its spread. These recommendations include, but are not limited to, social distancing, appropriate personal protective equipment (e.g., masking), and sanitation. This Condition does not supersede stricter landowner, agency, or employer restrictions. This Condition will remain in effect until state health officials determine that social distancing is no longer necessary.

I have read, understand, and agree to all Conditions attached to this license. VT-J (Initial)

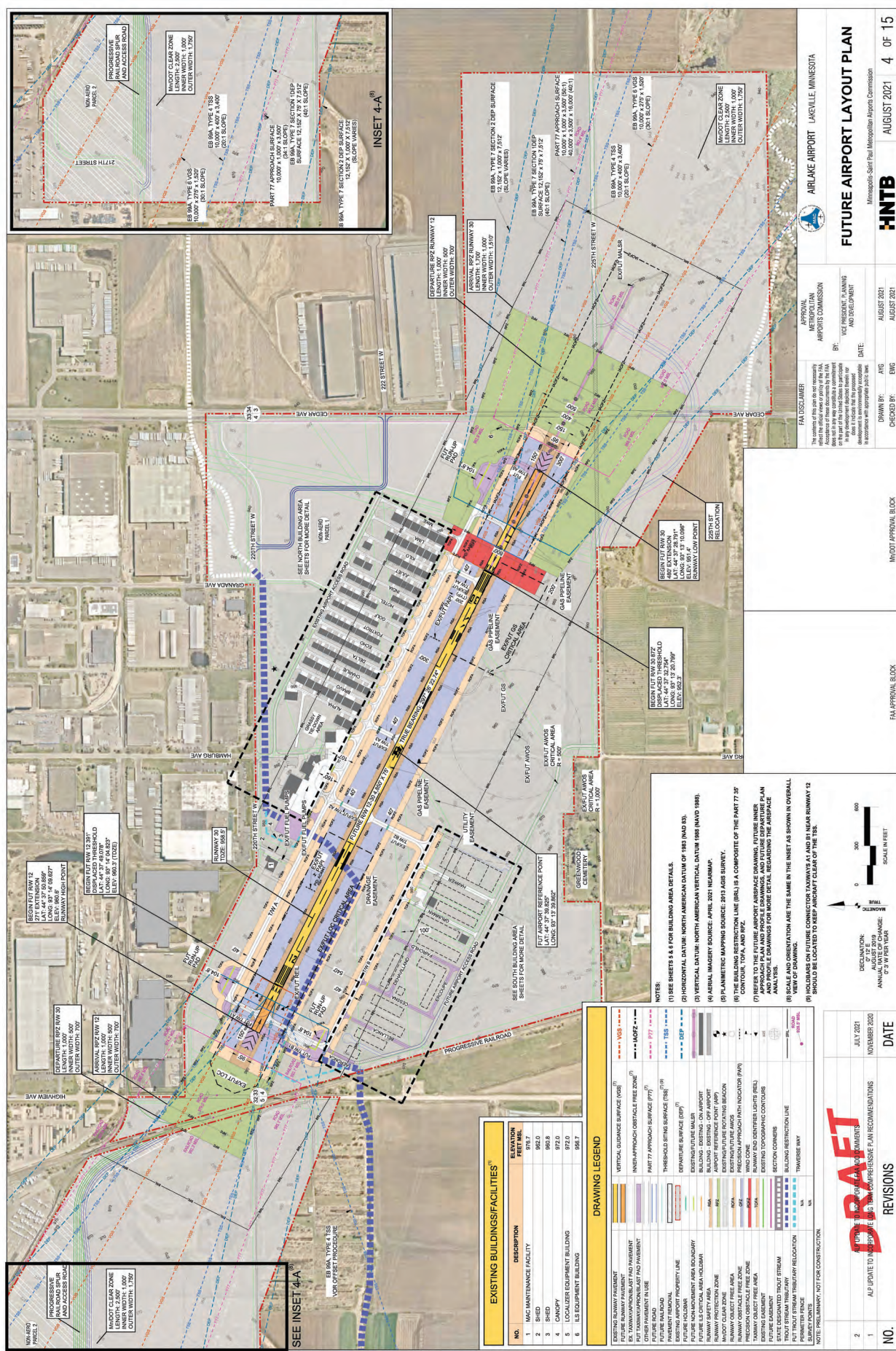


Figure 1. Airlake Airport improvement projects, highlighted in purple. Provided by Mead & Hunt, 2022.

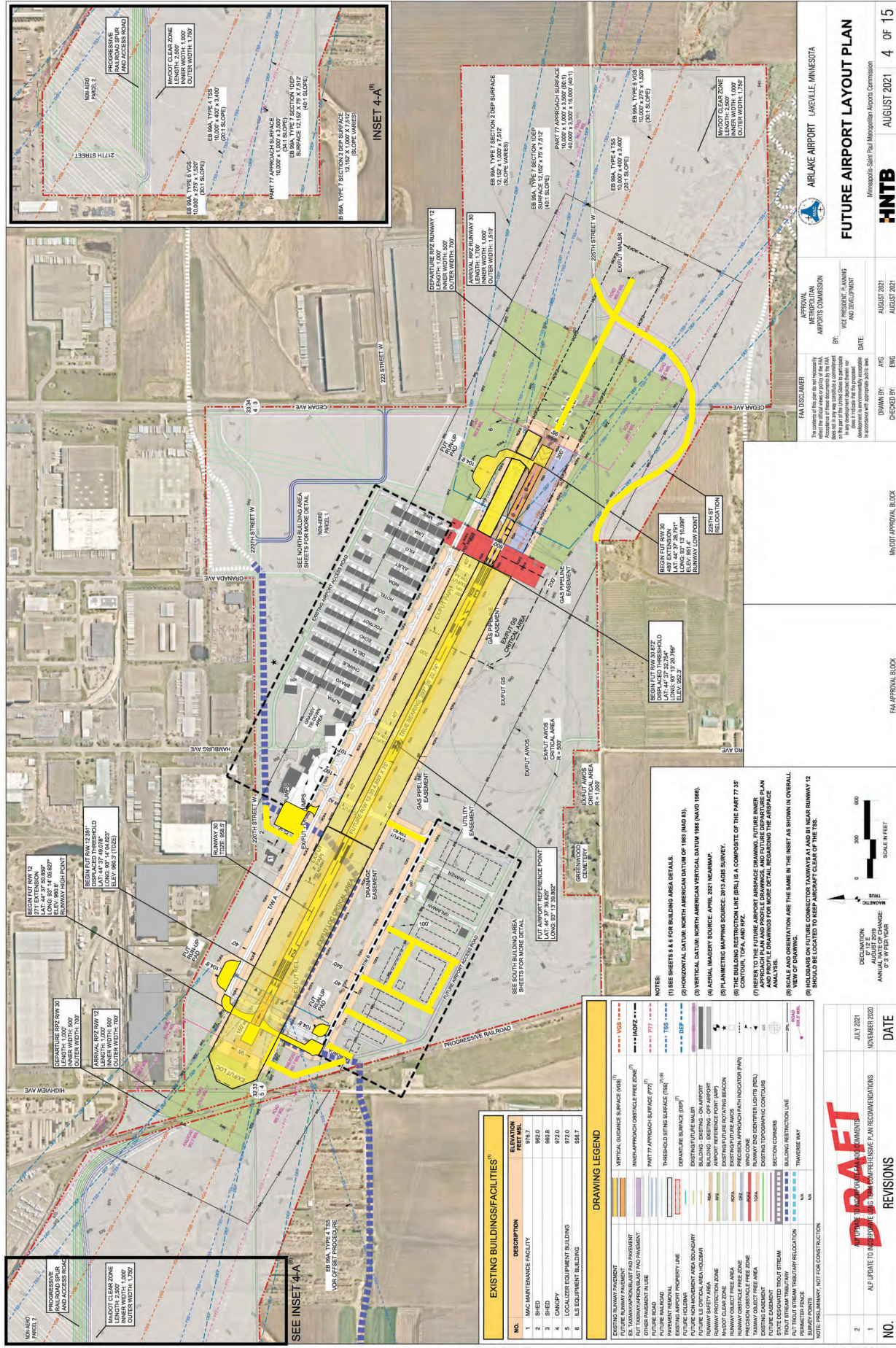


Figure 2. Airlake Airport improvement projects, highlighted in yellow. .

Appendix B

SHPO Inventory Results

Jean Dowiasch

From: MN_MNIT_Data Request SHPO <DataRequestSHPO@state.mn.us>
Sent: Friday, August 12, 2022 12:42 PM
To: Jean Dowiasch
Subject: RE: Dakota County MN
Attachments: History.xls

Hello Jean,

Please see attached. Our database has no archaeological records for the given project area. (BTW, I assumed you meant T114N in the second line and not T14N.)

Jim



SHPO Data Requests
Minnesota State Historic Preservation Office
50 Sherburne Avenue, Suite 203
Saint Paul, MN 55155
(651) 201-3299
datarequestshpo@state.mn.us

Notice: This email message simply reports the results of the cultural resources database search you requested. The database search is only for previously known archaeological sites and historic properties. **IN NO CASE DOES THIS DATABASE SEARCH OR EMAIL MESSAGE CONSTITUTE A PROJECT REVIEW UNDER STATE OR FEDERAL PRESERVATION LAWS** – please see our website at <https://mn.gov/admin/shpo/protection/> for further information regarding our Environmental Review Process.

Because the majority of archaeological sites in the state and many historic/architectural properties have not been recorded, important sites or properties may exist within the search area and may be affected by development projects within that area. Additional research, including field surveys, may be necessary to adequately assess the area's potential to contain historic properties or archaeological sites.

Properties that are listed in the National Register of Historic Places (NRHP) or have been determined eligible for listing in the NRHP are indicated on the reports you have received, if any. The following codes may be on those reports:

NR – National Register listed. The properties may be individually listed or may be within the boundaries of a National Register District.

CEF – Considered Eligible Findings are made when a federal agency has recommended that a property is eligible for listing in the National Register and MN SHPO has accepted the recommendation for the purposes of the Environmental Review Process. These properties need to be further assessed before they are officially listed in the National Register.

SEF – Staff eligible Findings are those properties the MN SHPO staff considers eligible for listing in the National Register, in circumstances other than the Environmental Review Process.

DOE – Determination of Eligibility is made by the National Park Service and are those properties that are eligible for listing in the National Register, but have not been officially listed.

CNEF – Considered Not Eligible Findings are made during the course of the Environmental Review Process. For the purposes of the review a property is considered not eligible for listing in the National Register. These properties may need to be reassessed for eligibility under additional or alternate contexts.

Properties without NR, CEF, SEF, DOE, or CNEF designations in the reports may not have been evaluated and therefore no assumption to their eligibility can be made. Integrity and contexts change over time, therefore any eligibility determination made ten (10) or more years from the date of the current survey are considered out of date and the property will need to be reassessed. If you require a comprehensive assessment of a project's potential to impact archaeological sites or historic/architectural properties, you may need to hire a qualified archaeologist and/or historian. If you need assistance with a project review, please contact Kelly Gragg-Johnson, Environmental Review Specialist @ 651-201-3285 or by email at kelly.graggijohnson@state.mn.us.

The Minnesota SHPO Archaeology and Historic/Architectural Survey Manuals can be found at <https://mn.gov/admin/shpo/identification-evaluation/>.

Please [subscribe to receive SHPO notices](#) for the most current updates regarding office hours, accessing research files, or changes in submitting materials to the SHPO.

To access historic resource information please visit our webpage on [Using SHPO's Files](#).



From: Jean Dowiasch <jdowiasch@uwlax.edu>
Sent: Monday, August 8, 2022 1:22 PM
To: MN_MNIT_Data Request SHPO <DataRequestSHPO@state.mn.us>
Subject: Dakota County MN

This message may be from an external email source.

Do not select links or open attachments unless verified. Report all suspicious emails to Minnesota IT Services Security Operations Center.

Hello Jim,

Could you please provide a list of archaeological and historic resources in the following TRS in Dakota County? Please let me know if you need any additional information.

T113N – R20W Sec. 3, 4, 5, 8, 9, 10

T14N – R20W Sec. 32, 33, 34

Sincerely, Jean

Jean Dowiasch
Senior Research Archaeologist
Education Coordinator
Mississippi Valley Archaeology Center
1725 State Street
La Crosse, WI 54601
Office: 608.785.8454
Cell: 608.792.0781

Attachment 3

Literature Review for Additional Airport Improvements at Airlake Airport in Dakota
County, Minnesota



June 2, 2026

MVAC SR 2026-57

Sarah Emmel Tvedten
Airport Planner
Mead and Hunt
7900 International Dr Suite 980
Bloomington, MN 55425

RE: Results of a Literature Review for Additional Airport Improvements at Airlake Airport in Dakota County, Minnesota.

Dear Ms. Tvedten,

This letter serves as a literature review conducted by the Mississippi Valley Archaeology Center (MVAC) for proposed improvements for the Airlake Airport project in Dakota County, Minnesota (Figure 1). In 2022, MVAC conducted a Phase I archaeological investigation of approximately 30 acres for proposed runway extensions, taxiways, roads, and associated infrastructure projects on Airlake Airport property near Lakeville, Minnesota. No cultural materials or evidence of post-contact structures were encountered during the Phase I survey, and no further archaeological investigations were recommended (Dowiasch 2022). In 2026, the project was revised to include additional improvements. This review will outline the revised project areas and determine the extent of archaeological potential at each location.

Project Description: The Airlake Airport is owned by the Metropolitan Airports Commission and lies in both the Town of Eureka and the City of Lakeville. The 2022 project area encompassed approximately 30 acres in Sections 3, 4, and 5 in the Town of Eureka (T113N-R20W) and Sections 32 and 33 in the City of Lakeville (T114N-R20W). The 2026 improvements lie in Sections 3 and 4 in the Town of Eureka.

The 2026 proposed revisions are listed below, beginning with #11, to correlate with the project locations shown in Figure 2, which also indicates the location of the ten actions proposed in 2022 (#1 – 10). The locations of the proposed 2026 improvements are shown in Figure 3, on a Google Earth Pro image.

11. Relocate apron to parallel taxiway connector segment of Taxiway A2 to address direct access from apron to runway.
12. Remove access road from Runway 12/30 to glideslope facility and relocate MALSR equipment shelter access road.
13. Reconstruct blast pads on both runway ends to meet design standards.
14. Expand the fixed base operator (FBO) aircraft parking apron.
15. Approve concurrent use for utility pipelines underneath Runway 12/30.

Previously Reported Archaeological Sites: A comprehensive site search was conducted using the Office of the State Archaeologist (OSA) Portal to determine recorded archaeological sites within one mile of the workspace. The OSA Portal provides access to the archaeological site inventory for all of Minnesota and the Minnesota Statewide Archaeological Predictive Model. No archaeological sites are recorded within the Airlake Airport project area, nor are there any sites recorded within one mile of the airport (OSA Portal 2026). The 2011 Historical Cemeteries Study available on the OSA Portal plots the Greenwood Cemetery as overlapping the airport property (Figure 4). However, historic aerial photographs dating back to 1937 (OSA Portal 2026) show the Greenwood Cemetery limited to its existing location outside the airport property on the north side of 225th Street West and 475 feet west of the Hamburg Avenue/225th Street West intersection (Figure 5). The cemetery is also shown at its current location in the 1916 Dakota County atlas (The Farmer 1916) and the general highway map of Dakota County in 1936 (Minnesota Department of Highways 1936) [Figure 6].

In 2019, the 106 Group completed a cultural resources literature review and archaeological assessment for the Airlake Airport (Lund-Kyrola and Que 2019). The literature review identified one previously inventoried, one previously recommended potentially NRHP-eligible, and two previously recommended non NRHP-eligible architectural history properties within their study area (Figure 7). The NRHP-eligible property is the Lakeville to Northfield segment of the Minneapolis St. Paul Rochester & Dubuque Electric Traction Company (MStPR&DETC)/Minneapolis Northfield & Southern Railway (Lund-Kyrola and Que 2019). The property was constructed in 1911. The assessment determined that areas within 300 feet of the historic properties possess moderate to high potential to contain intact post-contact archaeological resources. Areas within 500 feet of the Vermillion River possess moderate to high potential to contain intact precontact archaeological resources. Areas within the airport previously subjected to ground disturbance or lacking indicators of archaeological potential were deemed to possess low potential to contain intact precontact or post-contact archaeological resources. The 106 Group recommended archaeological investigations to identify any potentially significant and intact archaeological resources present in portions of their archaeology study unit identified as having moderate to high potential for archaeological resources (Lund-Kyrola and Que 2019).

Archaeological potential for proposed actions:

Proposed Action #11: Relocate apron to parallel taxiway connector segment of Taxiway A2 to address direct access from apron to runway. This project area lies within the developed area of the airport and is disturbed. The Google Earth map in Figure 3 indicates ditches/drainage on either side of the taxiways at these locations. A photo taken during the 2022 field investigations indicates typical landscaping along the taxiways (Figure 8). There is low potential for intact cultural materials at these locations.

Proposed Action #12: Remove access road from Runway 12/30 to glideslope facility and relocate MALSR equipment shelter access road. Initial construction of the existing access road would have caused disturbance at this location. During the 2022 field investigations, pedestrian survey and shovel testing were conducted for the proposed extension at the southeast end of the runway, which included the Action #12 project area (Figure 9). No cultural materials were recovered.

Proposed Action #13: Reconstruct blast pads on both runway ends to meet design standards. Reconstructing existing infrastructure should not cause extensive additional impact, as the initial construction of the blast pads would have previously disturbed the project areas. There is low potential for intact cultural materials at these locations.

Proposed Action #14: Expand the fixed base operator (FBO) aircraft parking apron. During the 2022 survey, shovel testing was conducted for the relocation of a trout stream tributary west of the existing parking apron. One transect of shovel tests was excavated at 15 meter intervals along each side of the trout stream. No cultural materials were recovered and there is low potential for intact cultural materials to be recovered at this location.

Proposed Action #15: Approve concurrent use for utility pipelines underneath Runway 12/30. Initial construction of the runways would have disturbed the Action #15 project areas. Actions proposed immediately adjacent to, or underneath existing runways and related infrastructure likely overlap previously disturbed areas and have low potential of intact cultural materials.

Results and Recommendations: The Airlake Airport project was revised in 2026 to include five additional improvements within the airport. Proposed Actions #11, #13, and #15 lie adjacent to, or under existing airport infrastructure, in areas which would have been disturbed during the initial runway, taxiway, parking apron, and blast pad construction. Proposed Actions #12 and #14 are within the developed areas of the airport, in areas that may not have been previously disturbed. However, the Action

#12 project area was previously surveyed in 2022, as was a portion of Action #14 along the trout stream to its west. No cultural materials were recovered during the 2022 field investigations. Given the extensive disturbance evident within the developed areas of the airport, there is low potential for intact cultural materials to be encountered during construction related to these actions. Therefore, it is recommended that the project proceed as planned, and no further archaeological investigations are recommended.

Sincerely,



Jean Dowiasch
Senior Research Archaeologist
Mississippi Valley Archaeology Center
University of Wisconsin–La Crosse
1725 State Street
La Crosse, WI 54601
(608)792-0781, jdowiasch@uwlax.edu

References Cited

- Dowiasch, Jean
2022 *Results of the Phase I Archaeological Survey for Improvements at the Airlake Airport in Dakota County, Minnesota*. Short Report Series SR-2022-162 of the Mississippi Valley Archaeology Center at the University of Wisconsin – La Crosse.
- Farmer, The
1916 *Atlas and farmers, directory of Dakota County, Minnesota*. The Farmer, Webb Publishing Co. St. Paul, Minnesota.
- Lund-Kyrola, Tyler and Erin Que
2019 *Cultural Resources Literature Review and Archaeological Assessment for the Airlake Airport, Eureka Township and Lakeville, Dakota County, Minnesota*. 106 Group Project No. 2392, St. Paul.
- Minnesota Department of Highways
1936 *General Highway Map, Dakota – Jackson*. Minnesota Department of Highways, St. Paul.
- Office of the State Archaeologist Portal
2026 *Archaeological site inventory*, St. Paul, Minnesota. Electronic document accessed June 2026: <https://osaportal.gisdata.mn.gov/>

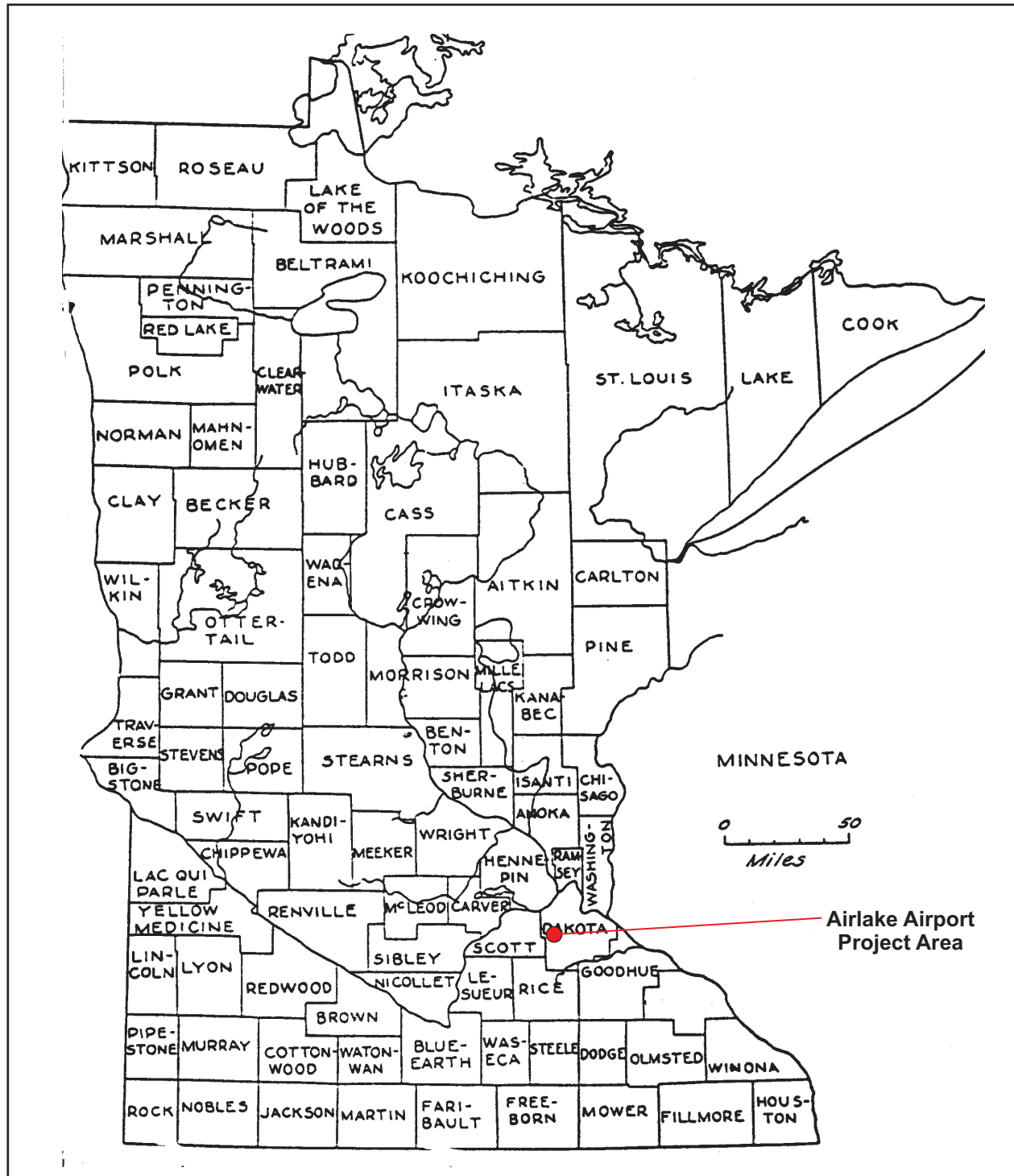


Figure 1. Project location in the State of Minnesota.

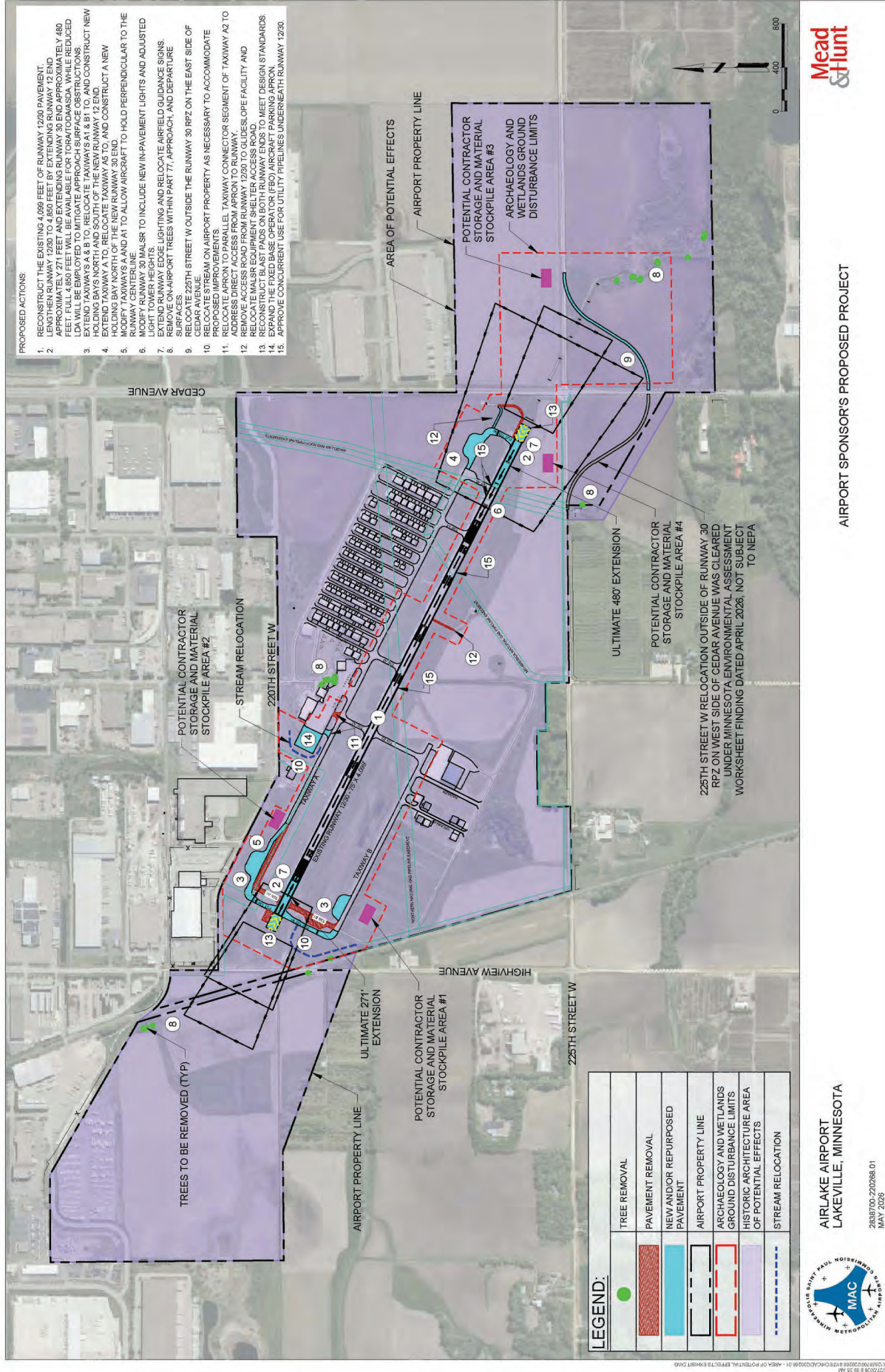


Figure 2. Proposed improvements at Airlake Airport near Lakeville, MN. Locations 1 through 10 were addressed in Dowiasch 2022. Provided by Mead & Hunt 2026.



Figure 3. Location of the revised improvements added at the Airlake Airport in 2026. Shown on Google Earth imagery.



Figure 4. The Office of the State Archaeologist Portal indicates historic Greenwood Cemetery overlaps a portion of Airlake Airport (OSA Portal 2026).

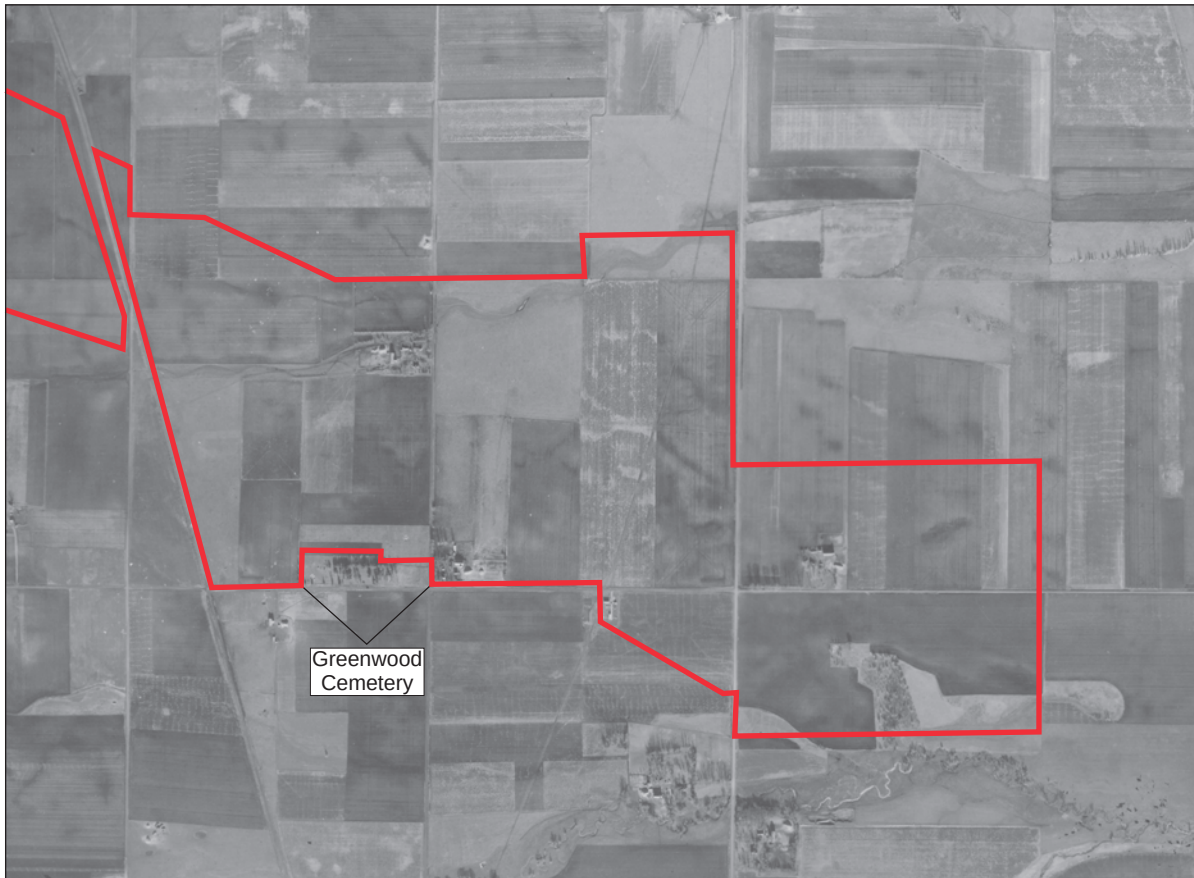


Figure 5. The 1937 aerial photograph indicates Greenwood Cemetery lies outside the airport property line (OSA Portal 2026).

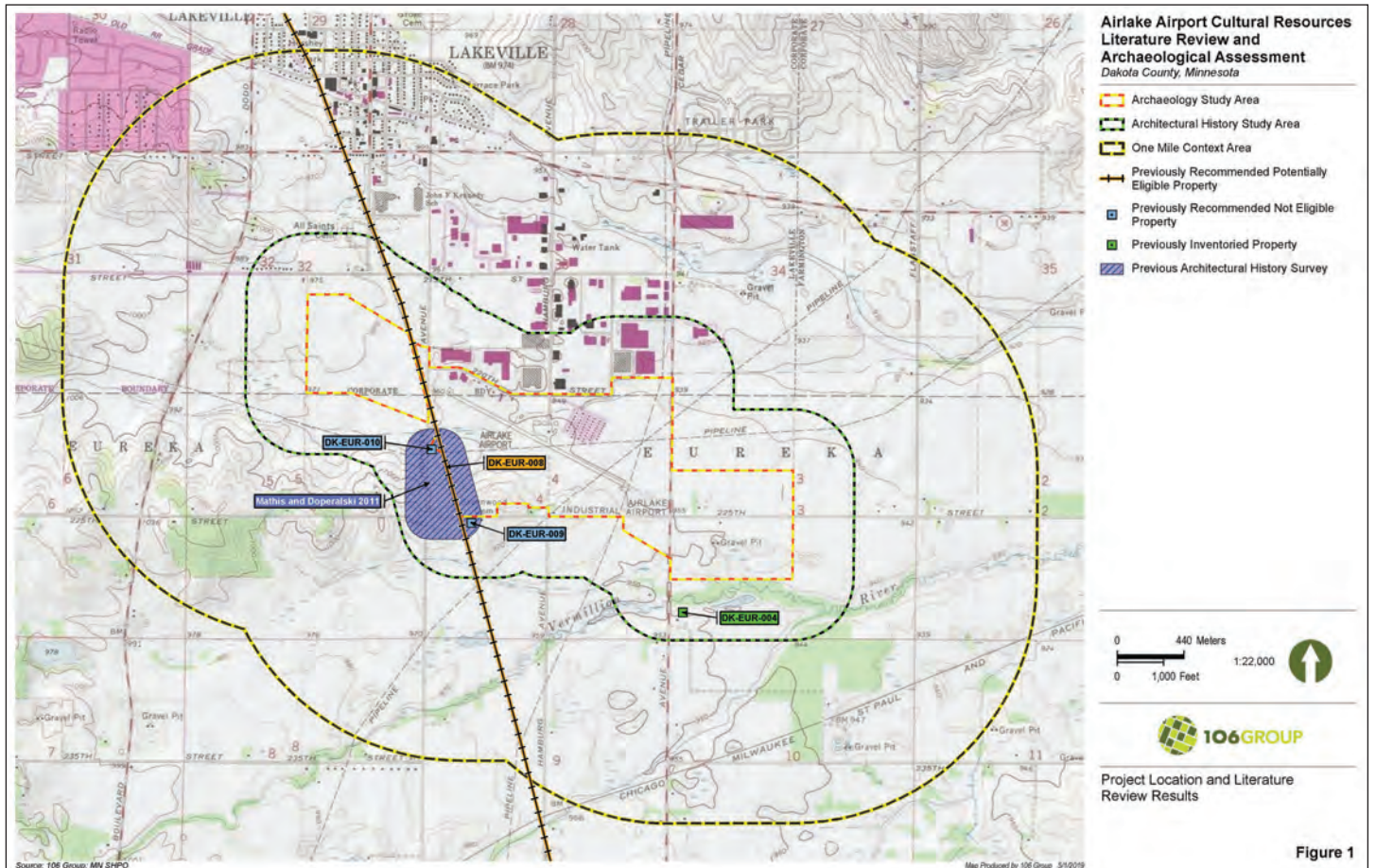


Figure 7. Results of a 2019 cultural resources literature review and archaeological assessment of the Airlake Airport, showing previously recorded historic sites in the study area. From Lund-Kyrola and Que 2019.



Figure 8. Previous disturbance was evident along both sides of the taxiways. Photo taken 08/30/2022, view facing northeast.



Figure 9. Proposed action #12 project area was previously surveyed in 2022. Photo taken 08/30/2022, view facing northeast.

Attachment 4

Airlake Airport Architectural History Phase I (Reconnaissance Survey) Report

Phase I (Reconnaissance Survey) Report

Airlake Airport

Prepared for

**Metropolitan Airports
Commission**

Prepared by



www.meadhunt.com

August 2023, Updated July 2026

Executive Summary

The Metropolitan Airports Commission (MAC) recently completed a Long-Term Comprehensive Plan (LTCP) for the Airlake Airport (Airport), which was approved by the MAC Board in April 2018. The key planning objectives of the LTCP include: maximizing the airfield's operational capabilities and property footprint in order to better accommodate business aircraft needs, maintaining or improving Runway Protection Zone (RPZ) land use compatibility, mitigating existing issues with airspace penetrations, and updating the taxiway layout to reflect current industry best practices. To meet these objectives, MAC, owner of the Airlake Airport, retained Mead & Hunt, Inc. (Mead & Hunt) to develop plans for a proposed airport update project. The overall project activities include the following:

1. Reconstruct the existing 4,099 feet of Runway 12/30 pavement.
2. Lengthen Runway 12/30 to 4,850 feet by extending the Runway 12 end by approximately 271 feet and extending the Runway 30 end approximately 480 feet and shift the runway landing threshold 120 feet east to provide a clear approach surface over the railroad.
3. Extend Taxiways A and B to, relocate Taxiways A1 and B1 to, and construct new holding bays north and south of the new Runway 12 end.
4. Extend Taxiway A to, relocate Taxiway A5 to, and construct a new holding bay north of the new Runway 30 end.
5. Modify Taxiways A and A1 to allow aircraft to hold perpendicular to the runway centerline.
6. Modify Runway 30 Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR) to include new in-pavement lights and adjusted light tower heights.
7. Extend runway edge lighting and relocate airfield guidance signs.
8. Remove on-airport trees and other vegetative obstructions within Part 77, approach, and departure surfaces.
9. Relocate 225th Street West outside the Runway 30 RPZ on the east side of Cedar Avenue.
10. Relocate stream on Airport property, as necessary, to accommodate proposed improvements.
11. Relocate apron to parallel taxiway connector segment of Taxiway A2 to address access from apron to runway.
12. Remove access road from Runway 12/30 to glideslope facility and relocate MALSR equipment shelter access road.
13. Reconstruct blast pads on both runway ends to meet design standards.

14. Expand the Fixed Base Operator (FBO) aircraft parking apron.
15. Relocate public aircraft viewing area within existing airport boundaries.
16. Expand stormwater infiltration basin.

The project will use Federal Aviation Administration (FAA) funding and, therefore, must comply with Section 106 of the National Historic Preservation Act of 1966 (Section 106), as amended, and its implementing regulations, 36 CFR 800. Qualified historians from Mead & Hunt worked with the FAA to delineate the Area of Potential Effects (APE), which was defined to include the full extent of the Airlake Airport property, as well as a small strip of land southwest of the intersection of Cedar Avenue and 225th Street (see APE map in Appendix A). The APE includes a railroad corridor located on the west side of the Airport that extends through the existing Airport boundary.

Prior to fieldwork, the project team conducted a literature review of Minnesota State Historic Preservation Office (SHPO) records to identify previously surveyed architecture/history properties within the APE. One property within the APE was previously identified: the Minneapolis St. Paul, Rochester, and Dubuque Electric Traction Company (MStPR&DETC) Railroad (XX-RRD-MNS001), later the Minneapolis, Northfield, and Southern (MN&S) Railway.

A Mead & Hunt historian conducted Phase I fieldwork on August 17, 2022, and identified the MStPR&DETC and two additional historic-age resources, which are defined as constructed in or before 1983. The MStPR&DETC Railroad is considered not eligible for listing in the National Register of Historic Places (National Register); thus, no site form was prepared and no further study is necessary. The other two properties, a Terminal/Fixed Base Operator (FBO) office and an aircraft hangar at the Airlake Airport, were also found to be not eligible for listing and are not recommended for further study.

Section 106 documentation was initially prepared in 2022-2023 following Minnesota State Historic Preservation Office (SHPO) documentation and evaluation standards at that time. The report and inventory forms were submitted to FAA on August 9, 2023; however, the proposed project was put on hold until May 2026. Mead & Hunt historians reviewed the initial findings, took updated photos of the surveyed properties, and revised the subject report and associated inventory forms. A new inventory form was prepared for the Airlake Airport to meet current standards. It was also found to be not eligible for listing and is not recommended for further study. Records for individual properties were submitted via Minnesota's Statewide Historic Inventory Portal (MnSHIP).

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- A Area of Potential Effect and Survey Results Map

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1. Introduction

A. Location and purpose of project

The Metropolitan Airports Commission (MAC) proposes updates to the Airlake Airport (Airport) to adhere to the Long-Term Comprehensive Plan (LTCP), developed and approved by the MAC in April 2018, and to meet current Federal Aviation Administration (FAA) design standard requirements. A description of project activities is included in Section 1.B. The approximately 624-acre airport is located on multiple parcels on the southern edge of the city of Lakeville in Dakota County bounded by 220th Street West on the north, Cedar Avenue/County Road 23 on the east, 225th Street on the south, and 217th Street on the west (see Figure 1). The Minneapolis Northfield & Southern Railway corridor extends through the northwest portion of the project area. Land around the perimeter of the airport (but outside the Area of Potential Effect [APE]) is a mixture of rural and industrial.

The project will receive FAA funding and must comply with Section 106 of the National Historic Preservation Act of 1966 (Section 106), as amended, and its implementing regulations, 36 CFR 800. In June 2022, Mead & Hunt, Inc. (Mead & Hunt) was retained by the MAC to complete Phase I survey to identify potentially historic properties that may be eligible for listing in the National Register of Historic Places (National Register) and to facilitate compliance with Section 106 review.

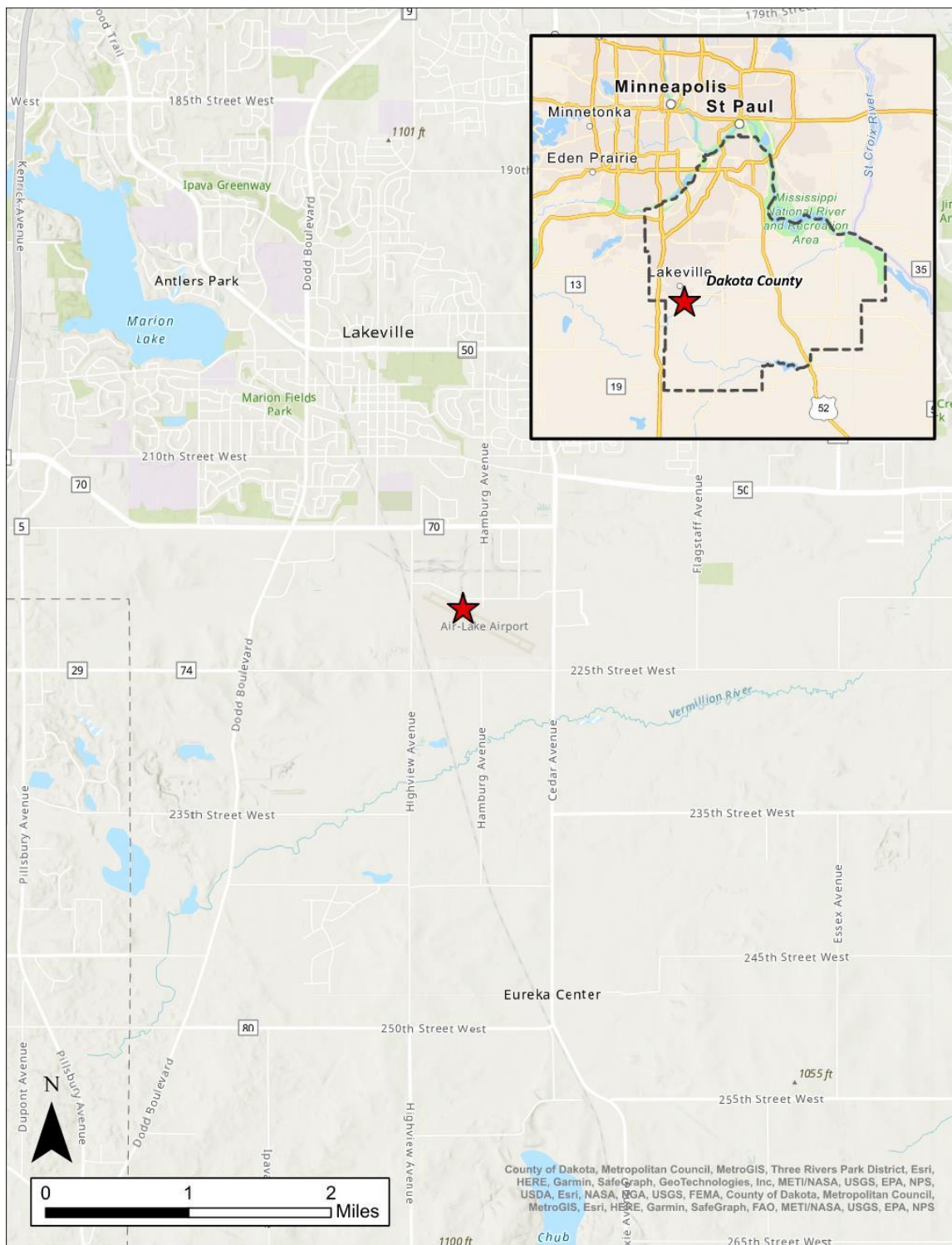


Figure 1. Map showing the project location. The star indicates the approximate location of the Airlake Airport within Dakota County.

B. Project description

The overall proposed project activities include the following:

1. Reconstruct the existing 4,099 feet of Runway 12/30 pavement.
2. Lengthen Runway 12/30 to 4,850 feet by extending the Runway 12 end approximately 271 feet and extending the Runway 30 end approximately 480 feet and shift the runway landing threshold 120 feet east to provide a clear approach surface over the railroad.
3. Extend Taxiways A and B to, relocate Taxiways A1 and B1 to, and construct new holding bays north and south of the new Runway 12 end.
4. Extend Taxiway A to, relocate Taxiway A5 to, and construct a new holding bay north of the new Runway 30 end.
5. Modify Taxiways A and A1 to allow aircraft to hold perpendicular to the runway centerline.
6. Modify Runway 30 Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR) to include new in-pavement lights and adjusted light tower heights.
7. Extend runway edge lighting and relocate airfield guidance signs.
8. Remove on-airport trees and other vegetative obstructions within Part 77, approach, and departure surfaces.
9. Relocate 225th Street West outside the Runway 30 Runway Protection Zone (RPZ) on the east side of Cedar Avenue.
10. Relocate stream on Airport property as necessary to accommodate proposed improvements.
11. Relocate apron to parallel taxiway connector segment of Taxiway A2 to address access from apron to runway.
12. Remove access road from Runway 12/30 to glideslope facility and relocate MALSR equipment shelter access road.
13. Reconstruct blast pads on both runway ends to meet design standards.
14. Expand the Fixed Base Operator (FBO) aircraft parking apron.
15. Relocate public aircraft viewing area within existing airport boundaries.
16. Expand stormwater infiltration basin.

An overview map of the project activities is presented in Figure 2.

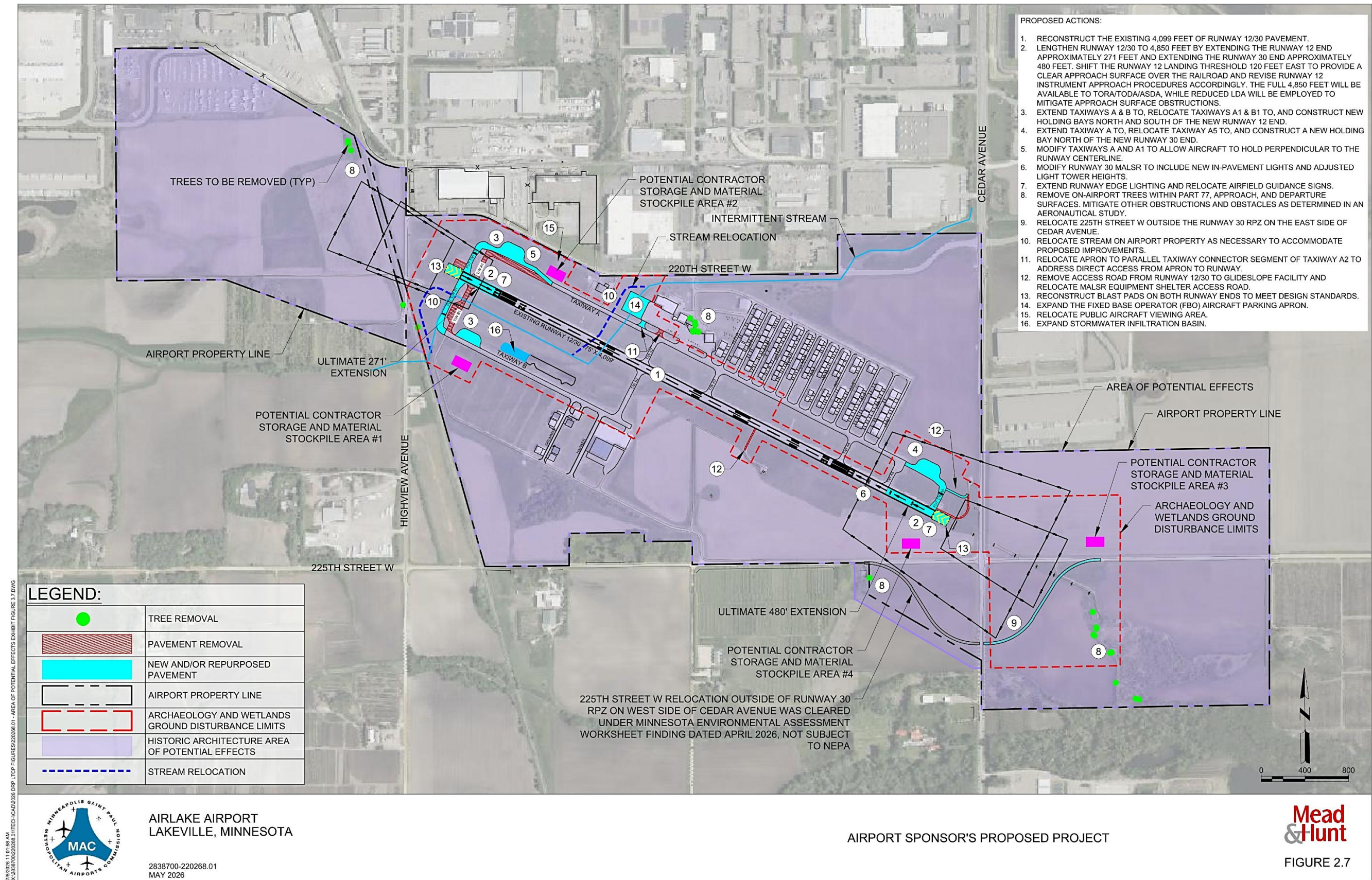


Figure 2. Map of proposed project activities in relation to the APE. Items in green are individual trees proposed for removal. See Appendix A for an overview map of just APE and how it compares to the airport boundary.

C. Area of Potential Effect

The APE coincides with the existing property boundary for the Airlake Airport and also includes a railroad corridor located on the west side of the Airport that extends through the existing Airport boundary. All staging areas will be located within existing Airport property boundaries and no additional land acquisition is proposed. A map of the APE is included in Appendix A.

Project activities within or immediately adjacent to the railroad corridor will be limited to removal of five select trees; the space will continue to be open land as required by FAA regulations. The APE includes those areas where proposed project construction activities will occur, such as runway extension and 225th Street West relocation, and to account for potential visual and audible effects within the 65 Day-Night Average Sound Level (DNL) noise contours. All staging areas will be located within existing airport property boundaries and no additional land acquisition is proposed.

2. Survey Methodology and Research Design

The objective of the architectural history survey was to identify historic-age properties, defined as 40 years or older (constructed prior to 1983), located in the APE that meet the National Register Criteria for Evaluation. In 2019, the 106 Group completed a preliminary cultural resources literature review assessment for the Airlake Airport and in 2022, qualified historians from Mead & Hunt conducted a follow-up literature review at the Minnesota State Historic Preservation Office (SHPO) to identify previously surveyed architecture/history properties within the APE for the proposed undertaking. The literature review identified the Minneapolis St. Paul, Rochester, and Dubuque Electric Traction Company (MStPR&DETC) Railroad / Minneapolis Northfield & Southern (MN&S) Railway (XX-RRD-MNS001) railroad corridor as the only previously surveyed property in the APE.¹ The MStPR&DETC historically ran between Minneapolis and Northfield and the corridor was evaluated for listing in the National Register in 2007 as part of the Railroads Multiple Property Documentation Form Project Report. Based on that evaluation, the portion of the railroad corridor between Minneapolis and Lakeville was considered National Register-eligible under *Criterion A* and the portion between Lakeville and Northfield, which includes the portion of railroad within the APE, was considered not eligible for listing in the National Register. A Multiple Property Inventory Form was subsequently prepared for the entire rail corridor using this assessment in November 2021 and SHPO concurred with the finding January 6, 2022. As such, the portion of railroad within the APE is not eligible.

A professional historian from Mead & Hunt who exceeds the Secretary of the Interior's Professional Qualification Standards for history and/or architectural history, as outlined in 36 CFR Part 61, conducted the Phase I fieldwork on August 17, 2022. The field investigation was limited to historic-age resources located within the APE. Mead & Hunt assessed the significance and historic integrity of these properties to make a recommendation for listing in the National Register (see Section 4 for recommendations).

Based on properties identified in the APE, project research focused on the theme of railroad transportation and aviation within Dakota County. Repositories consulted to obtain historical information included:

- Minnesota Historical Society
- Dakota County Historical Society
- Airlake Airport
- Metropolitan Airports Commission

Primary and secondary sources include:

- SHPO inventory forms
- County and city histories

¹ Historically, the railroad was referred to as the Minneapolis St. Paul Rochester & Dubuque Electric Traction Company (MStPR&DETC) Railroad. Today, it is known as the Minneapolis Northfield & Southern (MN&S) Railway. From this point onward, references to the historic railroad will use MStPR&DETC.

Section 2
Survey Methodology and
Research Design

- County assessment records
- Plat maps and historic aerial images
- MAC Airlake files
- Historic photographs
- Online resources
- Personal communication with property owner

3. Historic Overview

The purpose of this historic overview is to provide a context in which to identify important historic themes and to evaluate historic-age properties in the APE. Airlake Airport is located at the southeast edge of the city of Lakeville, Dakota County, just south of Airlake Industrial Park. It is accessible via Hamburg Avenue, which connects to Interstate Highway 35 (I-35) via 215th Street West and Juniper Way.

A. Dakota County

Located in east-central Minnesota, Dakota County is bordered by the Mississippi River on the north, Scott County on the west, Rice County on the west and south, and Goodhue County on the southeast. During the organization of the Minnesota Territory, migratory bands of Dakota people resided within the boundaries of what would become Dakota County and engaged in hunting and small-scale farming of crops such as corn, squash, and beans within the region.² Permanent European settlement began in the late 1830s, several decades after the Louisiana Purchase procured lands west of the Mississippi River for the United States from the French. Dakota County was established on October 27, 1849, as one of the nine original counties in the Minnesota Territory.³ Lakeville Village was first platted in 1855. The same year, Dakota County commissioners established Lakeville Village as one of the county's original townships. Attempts by the Hastings and Dakota Railroad to purchase land in Lakeville Village proved unsuccessful in the 1860s, leading to the development of a depot half a mile east in Fairfield. The depot attracted Lakeville Village's businesses, leading to that township's decline and the renaming of Fairfield to Lakeville upon its incorporation in 1878.⁴

By 1900, the population of the Lakeville area was 1,178. During the first half of the twentieth century, many communities in the northern half of Dakota County became commuter suburbs of Minneapolis and Saint Paul as it industrialized, including Lakeville. In 1950, the population of Lakeville was 1,984 and by 1960, it had grown to 3,047. The population more than doubled during the following decade, reaching 7,556 by 1970.⁵ While a rural atmosphere is retained in large portions of Dakota County, certain areas are decidedly suburban, such as those nearest the Twin Cities. According to historic aerial photography, suburban development began to spread out from Lakeville's central business district in the 1970s, with residential development occurring to the east and west and along railroad and highway corridors between Lakeville and Lake Marion.

² Edward Duffield Neill, *History of Dakota County and the City of Hastings, Including the Explorers and Pioneers of Minnesota* (North Star Publishing Company, 1881); "The Dakota People," *Minnesota Historical Society*, accessed September 8, 2022, <https://www.mnhs.org/fortsnelling/learn/native-americans/dakota-people>.

³ "History," *Dakota County*, accessed August 9, 2022, <http://www.co.dakota.mn.us:80/About/History/Pages/default.aspx>.

⁴ Bill Wolston, "Highlights from Lakeville History," *Dakota County History Maps*, 2000, <https://www.dakotahistory.org/images/HistoryMaps/Lakeville-History-Map.pdf>.

⁵ Wolston, "Highlights from Lakeville History."

B. Transportation

Prior to the incorporation of Dakota County, the area's transportation network consisted of trails established and used by Native Americans, steamboats on the Mississippi River, and territorial and military roads linking rural settlements with Minneapolis and Saint Paul.⁶

Railroad development in the project vicinity began in the early twentieth century and is linked to entrepreneur Colonel Marion Savage, who impacted the development of Lakeville with several business ventures. In 1910, Savage created and opened the Antlers Amusement Park on the shores of Prairie Lake (later Lake Marion).⁷ The park offered visitors use of a Ferris wheel, merry-go-round, aerial swing, miniature railroad, baseball diamond, a beach, a clubhouse and restaurant, and a dance pavilion. None of these resources are known to be extant.⁸ Today, Antlers Park is owned by the City of Lakeville and features swimming, recreation, and picnic areas. Antlers Park was one of several of Savage's businesses that used the moniker of his famous racehorse, Dan Patch. The park was intended to be a destination along another of Savage's ventures: the MStPR&DETC Railroad, which was built concurrently to the park. Colloquially known as the Dan Patch Line, the railroad was completed in 1911 and passed through the Western portion of Dakota County, including part of the project APE. It was the first railroad to provide Dakota County with direct access to Minneapolis and was intended to stretch to Dubuque, Iowa.⁹ Growth and development along the new transportation corridor did not ultimately meet initial expectations, and Northfield became its southern terminus, rather than Dubuque.¹⁰ In 1918, the line was sold to the MN&S Railway at foreclosure. Passenger service on the MN&S Railway ceased by 1942, and the line became entirely industrial.¹¹

C. Aviation in Dakota County

During the twentieth century, air travel grew in popularity as a mode of transportation throughout the country. The first airfield in the state of Minnesota, the nonextant Curtiss Northwest Airport in Falcon Heights, opened in 1919 approximately 30 miles north of Lakeville.¹² Recognizing the future importance of air transportation in the state and with the intent of making the Twin Cities a leader in aviation within the upper Midwest, the Minnesota State Legislature created the MAC in 1943. The MAC was designed to take a regional approach to air service, discourage competition between Minneapolis and Saint Paul, and

⁶ "Lost Highway: Dodd Road, Dakota County," accessed September 6, 2022, <https://deadpioneer.com/articles/dakota/doddroad/doddroad.htm>.

⁷ National Register of Historic Places, Multiple Property Documentation Form, *Railroads in Minnesota, 1862-1956* (Summit Envirosolutions, Inc., Statewide, Minnesota, National Register #64501188).

⁸ "Antlers Park," *St Louis Park Historical Society*, accessed September 6, 2022, <https://slphistory.org/antlers-park/>.

⁹ Jeanne-Marie Mark, *DK-EUR-008*, Minnesota History/Architecture Inventory Form (Eureka, Minnesota: The 106 Group, November 2006).

¹⁰ "Antlers Park."

¹¹ National Register of Historic Places, Multiple Property Documentation Form, *Railroads in Minnesota, 1862-1956*, 109–10.

¹² Steve Marsh, "How Aviation Flew Off in Minnesota," *Mpls.St.Paul Magazine*, February 3, 2020, <http://mspmag.com/api/content/5ac3f564-2e36-11ea-ada9-1244d5f7c7c6/>.

promote air transportation and commerce in the seven-county Twin Cities metro area. To meet these goals, the MAC established a system of airports, with the primary airport being Wold-Chamberlain Field (which became the Minneapolis-St. Paul International Airport in 1948), and six reliever airports to accommodate smaller aircraft traffic.¹³ The earliest airports in Dakota County were South St. Paul Municipal Airport-Richard E. Fleming Field (1941) and Sky Meadow Airport (1961), neither of which were designated as reliever airports.¹⁴ Both airports remain in use today. South St. Paul Municipal Airport-Richard E Fleming Field is located 18 miles northeast of the Airlake Airport, and Sky Meadow Airport is located 18 miles to the east. Historically, South St. Paul Municipal Airport-Richard E Fleming Field included a terminal building, flight training facilities, several hangars, and an FBO office.¹⁵ FBOs are companies that provide a variety of aeronautical services to airports that are generally focused on maintenance, storage, and fueling but may vary depending on the size of the airport.¹⁶ According to historic aerial photography, the privately owned Sky Meadow Airport has only ever consisted of an unpaved runway and hangar.¹⁷

(1) Airlake Airport

In 1966, Maynard Johnson, President of Hitchcock Industries, Inc., a Bloomington-based manufacturing company, purchased 1,500 acres of farmland along Trunk Highway 50 on the south side of Lakeville for use as an industrial park. Early advertisements for the park touted convenient access to the nearby MStPR&DETC.¹⁸ To avoid congestion at existing reliever airports, a new nearby airport was planned to help serve business owners at the industrial park.¹⁹ The privately owned facility, Airlake Airport, opened in 1967 with one paved runway and terminal building.²⁰ In 1969, Hitchcock Industries added an FBO, similar to services at South St. Paul Municipal Airport-Richard E. Fleming Field, to provide tie-down areas and fueling services for aircraft. The FBO office was housed within the existing terminal building. Two metal hangars were also built in 1969. Later, Airlake Airport's designation was changed from privately owned/private use to privately owned/public use, allowing aircraft not associated with the business park to use the facility.²¹

By the 1970s, the projected growth in aviation over the coming decades rendered the U.S. network of airports and airway systems inadequate. In response, the Airport and Airway Development Act of 1970 formulated a policy to guide the collection and allocation of funds for the continued modernization of the

¹³ Metropolitan Airports Commission, "Metropolitan Airports Commission," 2015, <https://metroairports.org/Airport-Authority/Metropolitan-Airports-Commission/Administration/Administration.aspx>.

¹⁴ "Airlake Airport," *AirNav.Com*, accessed August 16, 2022, <https://www.airnav.com/airport/KLVN>.

¹⁵ "About the Airport," *South St. Paul Municipal Airport Fleming Field*, accessed September 6, 2022, <http://www.flemingfield.com/583/Fleming-Field-Municipal-Airport>.

¹⁶ "What Is FBO in Aviation and What Do They Offer?," *FLYING Magazine*, accessed September 6, 2022, <https://www.flyingmag.com/guides/what-is-fbo-in-aviation/>.

¹⁷ "Sky Meadow Airport," *AirNav.Com*, accessed September 14, 2022, <https://www.airnav.com/airport/MN58>.

¹⁸ "Advertisement," *Minneapolis Tribune*, April 17, 1966.

¹⁹ "Advertisement," *The Minneapolis Star*, May 27, 1969.

²⁰ "Advertisement," *Minneapolis Tribune*, April 9, 1967.

²¹ The Metropolitan Council, *Airlake Airport 2035 Long-Term Comprehensive Plan (LTCP)*, March 2018.

Nation's airways, airports, and related facilities.²² In 1981, the MAC identified Airlake Airport as a suitable location for the diversion of training flights from Minneapolis-St. Paul Airport. However, Airlake's private ownership status necessitated that the MAC purchase the facility in order for improvements to be made that were required under the 1970 legislation. Immediate changes included the installation of the Instrument Landing System (ILS) as well as the reduction of the runway length from 5,000 to 4,100 feet to provide clearances over Cedar Avenue, 225th Street, and the MStPR&DETC Railroad tracks on the west side of the airport property. In 1986, the MAC relocated the Airlake Airport Terminal/FBO Office to allow for the construction of a parallel taxiway between the runway and the terminal/FBO Office and hangars. The building was relocated approximately 270 feet to the north and its original perpendicular orientation to the runway was altered.²³ The original hangar on the west side of the terminal/FBO Office was demolished that same year, while the original hangar on the east side is extant and in its original location. According to historic aerial photography, several interconnected additions were made to the terminal/FBO between 1986 and 1991 that altered its footprint significantly. These consist of a flat-roof addition at the rear, a large metal-clad hangar attached to the west elevation of the flat roof addition, and a small square plan addition to the southwest corner of the hangar. During the same period, six rows of private hangars were constructed east of the terminal/FBO Office and six more were added ca. 2000, further changing the landscape of Airlake Airport. By 1986, the original buildings and configuration of airport buildings at the Airlake Airport were no longer intact. Today, the airport has an average of approximately 140 aircraft operations per day, with over 100 aircraft based on the field. It is used by recreational flyers and business aviation.²⁴

²² *Airport and Airway Development Act of 1970*, 84 Stat. 219, 1970.

²³ The Metropolitan Council, *Airlake Airport 2035 Long-Term Comprehensive Plan (LTCP)*.

²⁴ "Airlake Airport"; The Metropolitan Council, *Airlake Airport 2035 Long-Term Comprehensive Plan (LTCP)*; Mead & Hunt, Inc., *Airlake Airport (LVN): Federal EA/ State EAW (Draft)* (Prepared for the Metropolitan Airports Commission, July 2026).

4. Results and Recommendations

Historians identified and documented four historic-age properties within the APE, as shown in Table 1.

Table 1. Surveyed properties within the APE

Inventory No.	Name	Address	Recommendation
DK-XXX-00003	Airlake Airport	8140 220th Street West	Not Eligible
DK-LKC-00039	Airlake Airport Terminal/FBO Office	22100 Hamburg Avenue	Not Eligible
DK-LKC-00040	Airlake Airport Hangar	22100 Hamburg Avenue	Not Eligible
XX-RRD-MNS001	MStPR&DETC Railroad Corridor Historic District	N/A	Not Eligible

The Airlake Airport (DK-XXX-00003), Terminal/FBO Office (DK-LKC-00039), and Hangar (DK-LKC-00040) are recommended not eligible for listing in the National Register as they do not possess a significant association with an important historic theme or person, and do not possess architectural significance. No further work is recommended for these properties. New inventory forms for these resources were submitted concurrently with this report and also submitted in MnSHIP.²⁵

The MStPR&DETC Railroad Corridor (XX-RRD-MNS001) extends from Minneapolis to Northfield. According to a Minnesota Multiple Property Inventory Form completed in November 2021 for the railroad corridor and a previous 2007 evaluation conducted as part of the Railroads in Minnesota Project, the National Register-eligible portion of the railroad corridor stretches from 54th Street and Nicollet Avenue in Minneapolis to the site of Antlers Park in Lakeville, approximately 2.5 miles north of the APE. The portion of the corridor that stretches between Antlers Park in Lakeville and the city of Northfield, which includes the small portion of railroad within the APE for the current project, is considered not eligible for listing in the National Register.²⁶ As such, a new inventory form was not prepared for the short extent of railroad located within the APE. Figures 3 and 4 illustrate that portion of the rail corridor within or adjacent to the project APE.

²⁵ A fourth historic-age building is located within the airport: the MAC maintenance building constructed ca. 1975. It was not located in the initial survey APE; therefore, it was not inventoried. Following current standards, it is included in the Airlake Airport form but not individually inventoried. The other two historic-age buildings initially had inventory numbers and forms prepared, which were submitted for individual review.

²⁶ Andrew J. Schmidt and Daniel R. Pratt, *Minnesota Statewide Historic Railroads Study Project Report* (Summit Envirosolutions, Inc., n.d.).



Figure 3. The MStPR&DETC Railroad Corridor at its crossing with Highview Avenue within the APE. The end of the runway is identified by the white arrow. View facing north.



Figure 4. A not-eligible portion of the MStPR&DETC Railroad Corridor near Highview Avenue. At this location, the railroad corridor extends beyond the APE and that area east (at left) of the rail corridor is the only portion within the APE. View facing southeast.

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<http://mspmag.com/api/content/5ac3f564-2e36-11ea-ada9-1244d5f7c7c6/>.
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<https://www.airnav.com/airport/MN58>.

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<https://www.mnhs.org/fortsnelling/learn/native-americans/dakota-people>.

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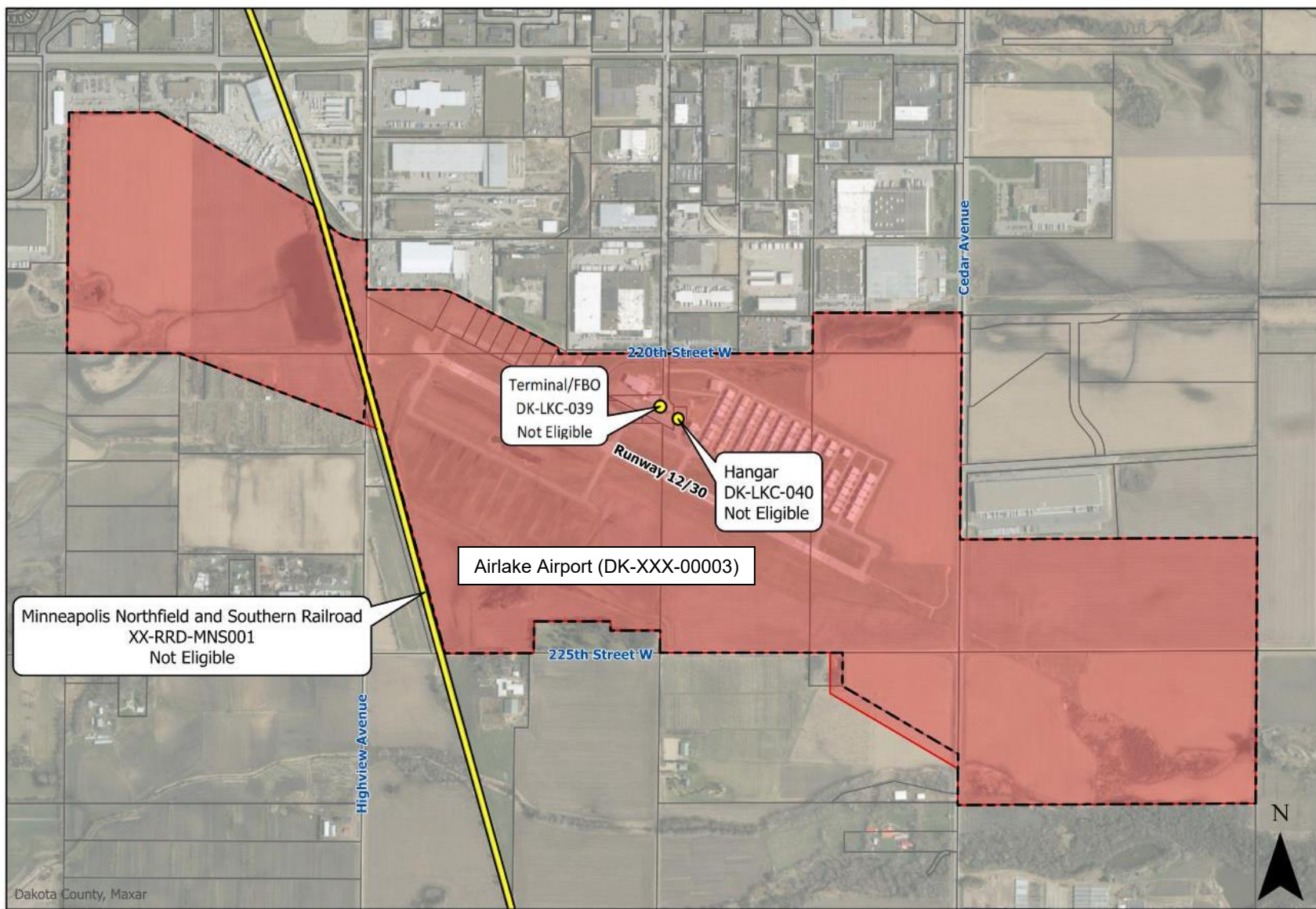
"What Is FBO in Aviation and What Do They Offer?" *FLYING Magazine*. Accessed September 6, 2022.

<https://www.flyingmag.com/guides/what-is-fbo-in-aviation/>.

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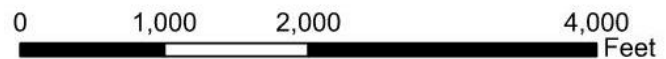
<https://www.dakotahistory.org/images/HistoryMaps/Lakeville-History-Map.pdf>.

Appendix A. Area of Potential Effects and Survey Results Map



Legend

- Evaluated Resources
- Area of Potential Effects (APE)
- Airport Boundary
- Parcel Boundaries



Attachment 5

Relocation of Airlake Airport Public Viewing Area

Existing structure shown here (photo taken facing south):



The viewing area will be moved approximately 500 feet west from existing as shown below:



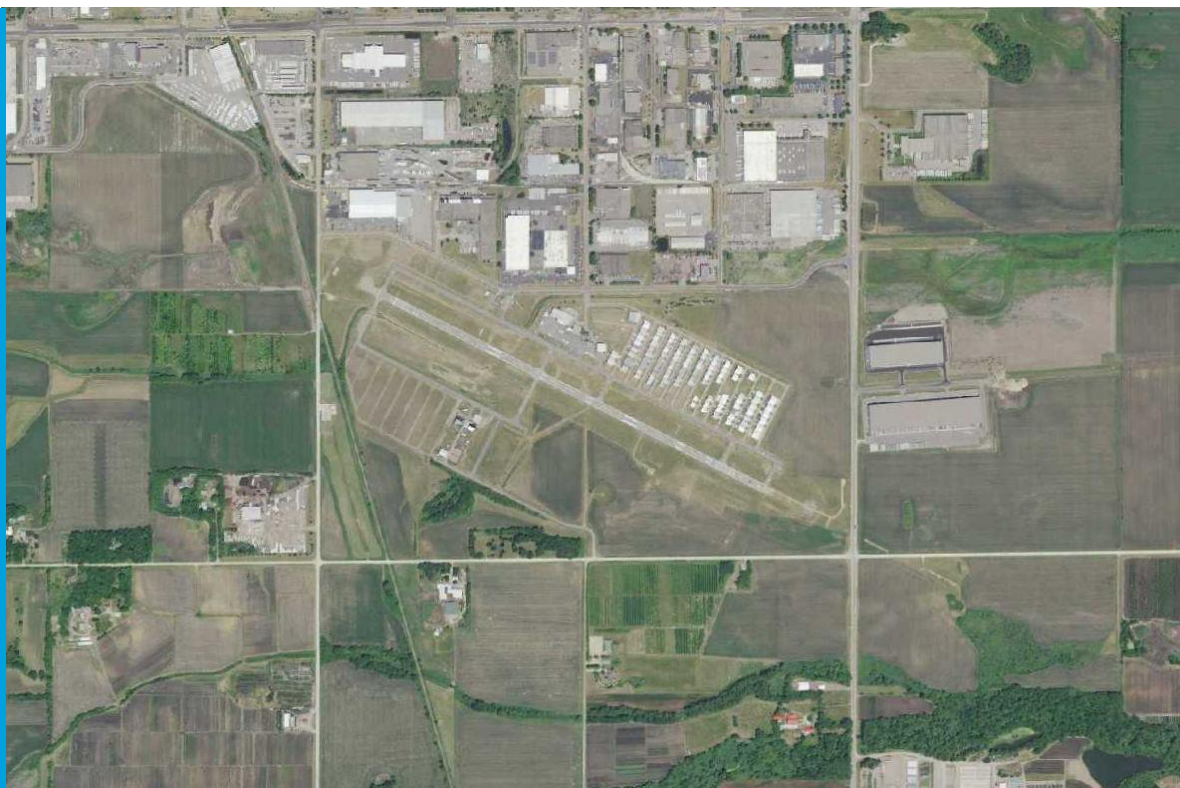
APPENDIX I: WETLAND DELINEATION AND CORRESPONDENCE

PREPARED
BY



Wetland Delineation Report

DRAFT



AIRLAKE AIRPORT

WETLAND DELINEATION REPORT

PROJECT NUMBER 2838700-220268.01

September 2022

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APPENDICES

Appendix A – Project Location Map

Appendix B – Detailed Topography and NRCS Soils Mapping

Appendix C – Aquatic Resources and FEMA Floodplain Mapping

Appendix D – WETS Analysis and Climatic Normals

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Appendix F – Ordinary High Water Mark Determination Maps

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1. Introduction

Airlake Airport (LVN or Airport) is located in Dakota County, Minnesota, approximately 17 miles south of the Minneapolis–St. Paul International Airport (MSP) and is owned by the Metropolitan Airports Commission (MAC). Airport property is located within both the city of Lakeville and Eureka Township. The Airport has one runway, Runway 12/30, which is 4,099 feet long and 75 feet wide. LVN serves as a reliever for MSP for general aviation traffic and provides flight training, aircraft rentals, charter flights, and medical flight transportation to a diverse group of recreational and business aviation users.

Long-term planning efforts by the MAC have identified airfield improvement objectives for the Airport that include modifying the location of the runway ends to increase the existing declared distances and extending the runway from 4,099 feet to 4,850 feet. Proposed actions include the following:

1. Reconstruct the existing 4,099 feet of Runway 12/30 pavement.
2. Lengthen Runway 12/30 to 4,850 feet by extending the Runway 12 end approximately 271 feet and extending Runway 30 approximately 480 feet.
3. Extend Taxiways A and B to relocate Taxiways A1 and B1 and construct new holding bays north and south of the new Runway 12 end.
4. Extend Taxiway A to relocate Taxiway A5 and construct a new holding bay north of the new Runway 30 end.
5. Modify Taxiway A and/or A1 to allow aircraft to hold perpendicular to the runway centerline.
6. Modify the Runway 30 Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR) to include new in-pavement lights and adjusted light tower heights.
7. Extend runway edge lighting and relocate airfield guidance signs.
8. Remove on-airport trees within Part 77, approach, and departure surfaces.
9. Relocate 225th Street west outside the Runway 12 runway protection zone (RPZ).
10. Relocate the trout stream tributary on Airport property as necessary to accommodate proposed improvements.

Potential connected actions include:

11. Expand the fixed base operator (FBO) aircraft parking apron.

Potential proposed actions currently being studied include:

12. Address non-standard conditions associated with Taxiways A2, A3, and B2.

Finally, this project will require grading for the runway end modifications and grading and drainage for the 225th Street relocation, and will address other drainage issues on the Airport.

Based on the nature of the proposed project, a Federal Environmental Assessment (EA) and a State Environmental Assessment Worksheet (EAW) will need to be completed. In support of environmental documentation for this project, a wetland delineation was conducted by Mead & Hunt, Inc. (Mead & Hunt) within an Area of Interest (AOI) over two site visits on August 1-4, 2022, and September 8, 2022. The AOI is in Sections 32 and 33, Township 114, Range 20 West; and Sections 3 and 4, Township 113, Range 20 West. The AOI covers approximately 164.4 acres.

This report summarizes the results of the wetland delineation. Delineator qualifications are provided in Appendix I. Mead & Hunt staff who performed the wetland delineation are:

- Brauna Hartzell, BS Biological Science, Florida State University, 1982; MS Environmental Monitoring, University of Wisconsin-Madison, 1994; 20 years wetland delineation practice.

2. Methods

The wetland determination made use of the following available resources to provide context and background information and assist in the field assessment:

- Dakota County, MN Air Photo Time Machine. Accessed at <https://dakotacounty.maps.arcgis.com/apps/ImageryViewer/index.html?appid=1ba2626c699c4d59a95da121e8e76283>.
- Climate Data and Summary Reports from AgACIS, WETS Climate Tables for 1971-2010. Farmington 3NW, MN. Accessed at <http://agacis.rcc-acis.org/>.
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- *Field Indicators of Hydric Soils in the United States: A Guide for Identifying and Delineating Hydric Soils*, Version 8.2, 2018.
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil survey. Accessed at Web Soil Survey at <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>.
- Aerial photography from USDA Farm Service Agency (USDA-FSA) National Agriculture Imagery Program (NAIP) from Geospatial Data Gateway. Accessed at https://gdg.sc.egov.usda.gov/GDGHome_DirectDownload.aspx
- Historic aerial photography available from the Minnesota Geospatial WMS Image Service. Accessed at <https://imageserver.gisdata.mn.gov/cgi-bin/wms?>.

The field methods used conform to the Routine Onsite Method of the *1987 U.S. Army Corps of Engineers' (USACE) Wetland Delineation Manual*, as enhanced by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (Version 2.0) (U.S. Army Corps of Engineers, 2010). Soil characteristics were examined by digging pits with a 16-inch tile spade, and in cases where thick A horizons were encountered, an Eijkelkamp Edelman soil auger for combination soils with a 3-inch diameter by 6-inch-long barrel was employed to sample at depth. This soil auger was used to periodically test soils on both the upland and wetland sides of the boundary line. Soil pits were left open for a minimum of 15 minutes to adequately assess the water table. Munsell Soil Color charts were used to determine the hue, value, and chroma for the matrix and any redoximorphic features in each soil layer. Hydrologic indicators were visually assessed.

Vegetation was documented on Midwest Regional automated data forms provided by the USACE. Percent cover of each species in each stratum was estimated. The herbaceous stratum was sampled within a 5-foot radius plot, a 15-foot radius plot for the shrub/sapling stratum, and a 30-foot radius plot for the tree and woody vine stratum. The *2020 National Wetland Plant List* (USACE, 2020) was used to determine the wetland indicator status for each species, and the 50/20 rule was applied to determine dominance.

Antecedent precipitation was assessed following procedures developed by the NRCS and following guidance from the Minnesota Board of Water and Soil Resources (BWSR, 2015). Precipitation data three months prior to fieldwork was compared to 40-year precipitation averages (1971-2010) to determine if hydrologic conditions were normal, wetter, or drier than normal for the area.

The Ordinary High Water Mark (OHWM) of the tributary stream within the AOI was assessed by observation of indicators of the OHWM including shelving, presence of litter and debris, wracking, scour, deposition, bed and banks, and change in plant community, among others, while in the field. Supporting background information used in the determination included historic aerial photographs, permit documents, and construction plan sets.

All area within the AOI was examined. A total of 24 data points—thirteen in uplands and eleven in wetlands—were established to characterize the range of soil, vegetation, and hydrologic conditions. Wetland boundary points were indicated by wire pin flags placed approximately 25-50 feet apart. These sampling points and wetland boundary flags were surveyed with a Trimble R1 GPS receiver capable of sub-meter accuracy and mapped using Geographic Information System (GIS) software. Wire pin flags set in agricultural areas or in roadside ditches were removed after survey so farming or mowing operations would not be impacted.

3. Results and Discussion

3.1 Site Description

The AOI covers approximately 164.4 acres centered on Runway 12/30. A small section of the AOI is situated across the railroad on the west side. This area is included due to the presence of trees potentially penetrating Part 77, approach, or departure surfaces. Areas within airport property are farmed or periodically hayed. The southeastern portion of the larger AOI includes farmed lands to the east of Cedar Avenue (County Road 23) and south of 225th Street. Some areas on the west end of the AOI between the Runway 12 end and Highview Avenue are hayed periodically, and outside of the AOI farmed fields lie to the south of the runway within Airport property. The AOI is shown on the Project Location Map provided in Appendix A.

Surrounding land use consists of developed lands to the north with a variety of industrial and commercial enterprises, while lands to the south are primarily in agricultural production, with corn and beans being the dominant crops. An orchard lies directly south of Airport property along Hamburg Avenue.

Topography over the airfield is relatively flat, with the Runway 30 end at approximately 950 feet (NAVD 1988) and the Runway 12 end at approximately 960 feet. The hangar development and other airport facilities on the north side of the runway are also at approximately 950 feet. The south hangar area currently being developed sits somewhat higher at 960 feet as the area to the south grades to higher elevations along 225th Street. To the south and east of the Cedar Avenue and 225th Street intersection, topography slopes towards the Vermillion River floodplain, which flows in an easterly direction south of Airport property. The AOI is wholly within the Mississippi River–Lake Pepin major watershed. Topographic mapping from the LiDAR Elevation Data for Minnesota project is provided in Appendix B.

Nearly all infield areas consist of common grasses and forbs and are mown on a regular basis. Areas outside the airfield are in agricultural production, including a large area in the southeastern corner of the AOI. Fields contained either corn or beans at the time of fieldwork.

At the time of the August site visit, most area on the active airfield had been mowed, with adequate regrowth observed, making upland vegetation identifiable in most cases. Upland areas were dominated

by a mix of grasses and forbs consisting of Kentucky blue grass, creeping wild rye, smooth brome, foxtail/yellow bristle grass, red clover, white clover, Bird's-foot trefoil, bladder campion, great plantain, dandelion, common milkweed, annual ragweed, and Canada thistle.

3.1.1 Soils Mapping

A majority of the AOI (91.7%) is covered by soils rated as non-hydric. The largest portion of the AOI (63.6%) is covered by soils from two Waukegan silt loam units (411A and 411B) on slopes from 0 to 6 percent. Found on stream terraces and outwash plains, these units are deep and well drained. Loamy soils from two non-hydric Ostrander series (2B and 2C) cover another 19.6% of the AOI and are found on moraines.

Three predominantly hydric soils units cover 6.9% of the AOI. Soils from the Marshan series (252) are mapped across the central portion of the runway. Two units from the poorly and very poorly drained Mayer series (255 and 318) are found at the eastern extent of the AOI.

Soils present within the AOI are summarized in Table 1. Soils rated as predominantly hydric are in bold. Soils mapping for the AOI is presented in Appendix B.

TABLE 1. SUMMARY OF SOILS IN THE AOI

Map Unit Symbol	Map Unit Name	Percent of AOI	Primary Landform	Hydric Rating (percent)
2B	Ostrander loam, 1 to 6 percent slopes	19.3%	Moraines	Non-Hydric (0)
2C	Ostrander loam, 6 to 12 percent slopes	0.2%	Moraines	Non-Hydric (0)
39B	Wadena loam, 2 to 6 percent slopes	2.5%	Outwash plains, terraces	Non-Hydric (0)
41B	Estherville sandy loam, 2 to 6 percent slopes	1.1%	Outwash plains, terraces	Predominantly Non-hydric (1)
129	Cylinder loam, 0 to 2 percent slopes	0.1%	Outwash plains, terraces; Depressions on outwash plains	Predominantly Non-hydric (15)
213B	Klinger silt loam, 1 to 5 percent slopes	0.1%	Moraines, Drainageways on moraines	Predominantly Non-hydric (5)
250	Kennebec silt loam	1.3%	Outwash plains	Non-Hydric (0)
252	Marshan silty clay loam	5.6%	Flats on stream terraces, flats on outwash plains	Predominantly Hydric (90)
255	Mayer silt loam	0.6%	Flats on stream terraces, flats on outwash plains	Predominantly Hydric (90)
318	Mayer loam, swales	0.7%	Depressions on outwash plains, depressions on stream terraces	Predominantly Hydric (90)
411A	Waukegan silt loam, 0 to 1 percent slopes	52.8%	Stream terraces, outwash plains	Non-Hydric (0)
411B	Waukegan silt loam, 1 to 6 percent slopes	10.8%	Stream terraces, outwash plains	Non-Hydric (0)

Map Unit Symbol	Map Unit Name	Percent of AOI	Primary Landform	Hydric Rating (percent)
415B	Kanaranzi loam, 2 to 6 percent slopes	0.6%	Outwash plains	Non-Hydric (0)
857A	Urban land-Waukegan complex, 0 to 1 percent slopes	2.6%	Outwash plains	Non-Hydric (0)
1078	Anthropotic Udorthents, 2 to 9 percent slopes	1.6%	Outwash plains	Non-Hydric (0)

3.1.2 Aquatic Resources

Aquatic resources including Minnesota Public Waters, designated trout streams, and wetlands, are shown on the maps provided in Appendix C, as are Federal Emergency Management Agency (FEMA) floodplains.

3.1.2.1 Streams and Water Bodies

An unnamed Minnesota Department of Natural Resources (DNR) public watercourse (M-049-012-001) flows through the airfield starting at the Highview Avenue bridge crossing on the west and exits the AOI near Hamburg Avenue. It is a tributary to an unnamed designated trout stream that flows to the Vermillion River approximately three miles downstream from the Airport. A portion of the on-Airport tributary is carried via storm pipes under Runway 12/30 and Taxiway A to the north.

The stream north of the runway was likely realigned at the time of the Airport's construction as can be seen in historic aerial photographs from pre- and post-construction images (1964 and 1970) provided in Appendix E.

Realignment of a 1,400-foot section of the stream south of the runway occurred in 1999 as part of construction related to Taxiway B and the south hangar development. The two segments of the relocated stream total approximately 2,000 feet in length and are designed as a meandered channel. Appendix C contains construction plans, channel specifications, a typical cross section plan, and the proposed drainage system plan for the permitted realignment (MNDNR Permit #99-6034).

According to channel design specifications, the channel width is 2-3 feet and the depth is 0.8-1.0 foot. The belt width is 15 feet. Other design specifications can be found in Appendix C.

No DNR Public Waters Basins are within the AOI.

3.1.2.2 Wetlands

The Minnesota update (2009-2014) of the National Wetland Inventory (NWI) indicates areas of mapped wetlands within the AOI. On the west side of the AOI, a partially drained/ditched emergent area (PEM1Ad) is mapped in conjunction with the western portion of the relocated stream. An area of emergent wetland (PEM1A) is mapped north of Taxiway B; this wetland is a detention area constructed at the time the stream was relocated in 1999. Both of these are

classified as Seasonally Flooded Basins or Flats (Type 1) under the Circular 39 classification system.

At the southeastern end of the AOI, a large wetland complex consisting of emergent and forested areas extends beyond the AOI. A farmed emergent area (PEM1Af) is mapped within a farm field in this area. The wetlands in this area are classified as Seasonally Flooded Basin or Flat (Type 1) or as Shallow March (Type 3) under the Circular 39 classification system.

3.1.2.3 Floodplains

The Vermillion River floodplain lies just south of the AOI and includes an area of Zone AE within the AOI. Just north of 220th Street and outside of the AOI, a mapped Zone A floodplain is associated with the tributary stream. No regulatory floodways are within the AOI.

3.1.3 Antecedent Climatic Conditions

An assessment of antecedent climatic conditions was made using precipitation data for the three months prior to each site visit. This analysis indicated that climatic conditions were drier than normal range for the August field visit (see Appendix D). During the August site visit, approximately 0.3 inches of precipitation fell on the night of August 2 as recorded by the Airport rain gauge. Environmental conditions prior to the September visit were within normal range.

3.1.4 Historic Aerial Photography and Hydrology Review

Mead & Hunt reviewed historic aerial photographs for the AOI covering the years 1991, 2003, 2004, 2006, 2008, 2009, 2010, 2013, 2015, 2016, 2017, 2019, 2020, and 2021. In addition, three images taken prior to the Airport's construction were also reviewed along with one taken just after construction. These date from the years 1937, 1951, 1964, and 1970. Aerial photography was accessed from the MnGEO WMS Imagery service, USDA NAIP photography program, and the Dakota County Air Photo Time Machine, and are presented in Appendix E.

3.1.4.1 General Site History

The early history of the Airport site shows lands primarily in agricultural production with four farmsteads present within the AOI: one near the central part of the AOI that later became the terminal area and three in the southeastern portion of the AOI. Once the runway and associated facilities are constructed in 1967, only two of the farmsteads remained in the southeastern portion.

A stream is present in all of the pre-construction photos and flows in an easterly direction through the central portion of the AOI. Post-construction, the stream is carried under the newly constructed runway and parallels the runway before turning south to connect to the natural stream to the west of Highview Avenue.

By 1991, the north side of the airfield has seen development of a hangar complex and a series of buildings along the northern end of the runway. The stream on the north side of the runway has

been straightened and re-routed around airfield buildings and along what became 220th Street. The two remaining farmsteads in the southeast are now gone but lands in the southeastern portion remain in agricultural production.

By 2003, the buildings at the north end of the runway, south of 220th Street, are gone; Taxiway B and associated connectors on the south side have been constructed; and the stream has been re-routed parallel to the runway with a crossing under Taxiway B1. Across the main rail line at the west end of the AOI, a detention area was constructed by the City of Lakeville within Airport property.

The stream realignment associated with the Taxiway B and south hangar area construction was permitted in 1999. The relocation of the stream included constructing a meandered channel along the entire length of the stream corridor. A large detention area north of Taxiway B was also constructed at this time. The 2003 photograph shows the airfield in its current configuration.

The south hangar area is currently under development. A smaller detention area east of the large detention was added in 2020 for additional stormwater needs related to the development.

3.1.4.2 Hydrology Review

As much of the southeastern extent of the AOI is in agricultural production, an off-site review of available data sources including historic aerial photographs, soils mapping, and NWI wetland mapping was performed to identify areas of farmed wetland. This analysis aided in identifying specific wet areas within farmed fields to inspect, which otherwise may be obscured by mature crops at the time of field work.

Following the procedures provided in *Guidance for Offsite Hydrology/Wetland Determinations* (USACE, 2016), two areas were identified and examined for wet signatures including crop stress or no cropping, soil wetness signatures, and normal vegetative cover. Seventeen aerial photographs were used to assess these areas. Additional data sources, including NRCS soils mapping and the NWI, provided corroboratory information about each area.

3.1.5 Atypical Conditions Analysis

The Airport has a long history within Dakota County, having begun operations in 1967. Within airport property, construction activities over the Airport's history have affected many areas on the landscape. Farm fields within the AOI have been in agricultural production for decades. Area within the AOI has experienced some or all of the following disturbances:

- Grading, filling, mixing, transportation, and compaction of native soils.
- Introduction of cool-season turf grasses.
- Changes to topography and drainage patterns.

- Regular mowing on the airfield.
- Regular plowing, tilling, and harvesting in farmed areas on Airport property, which has increased soil compaction and led to disturbance to soil surface layers within fields.
- Potential alteration of drainage patterns and hydrological function due to tilling in the eastern farm fields.

Within the active airfield, normal circumstances were considered to be present due to the long period of time since construction and that regular vegetation maintenance is largely confined to upland areas. In farmed areas, normal circumstances were not considered to be present due to the seasonal disking and planting within the eastern fields south of 225th Street. Vegetative growth in maintained areas was sufficient to make plant identification reliable.

3.2 Findings

3.2.1 Level 1 Review

Both areas identified from the off-site review were field verified during fieldwork. The results of this analysis are presented in Appendix E. Table 2 summarizes the results of field investigations in areas identified in the off-site review.

TABLE 2. SUMMARY OF LEVEL 1 HISTORIC AERIAL PHOTO REVIEW AND HYDROLOGY ANALYSIS

Investigation Area	Level 1 Review Summary	Field Summary for each Investigation Area
Area A	Wetland (W)	No hydrophytic vegetation or wet areas observed. Area is an old farmstead site; site was planted to soy beans after recent grading at the site. See Photo 16 in Appendix I.
Area B	Field Verify (FV)	No hydrophytic vegetation or wet areas observed; upland topographic position. See sampling point DP21 and Photo 79 in Appendix I.

3.2.2 Streams

Three segments of a tributary stream were delineated by an OHWM determination. The three tributary channels are not mown and, at the time of the August field visit, were dominated by reed canary grass. This heavy growth obscured direct observation of OHWM indicators including shelving, presence of litter and debris, wracking, scour, deposition, and bed and banks. Under drier than normal environmental conditions, no standing water was present in the channel at this time. Therefore, the OHWM determination relies on high-resolution historic aerial photography (Dakota County and the seven-county metro area) and construction plans. This determination utilized imagery over multiple recent photograph acquisition dates in the early growing season, observation of bankfull conditions within the narrow meandered 2- to 3-foot-wide channel in the

images, and for Tributaries 1 and 2, the design channel belt width of 15 feet as a basis. Later season images are either too low resolution (NAIP images are generally 1m) or are too obscured with vegetation to reliably observe the channel.

Images and antecedent precipitation conditions used for this determination are summarized in Table 3.

TABLE 3. IMAGE DATES AND ANTECEDENT PRECIPITATION CONDITIONS FOR OHWM DETERMINATION

Image Date	Image Source	Antecedent Precipitation
4/1/2021	Dakota County	Normal (13)
4/5/2020	7 County	Wet (15)
4/23/2019	Dakota County	Wet (17)
4/13/2016	7 County	Normal (13)

Tributaries 1 and 2 are segments of the relocated stream. Tributary 3 is a segment of an earlier relocation of the stream completed at the time of construction of the Airport. Tributary 3 does not have a meandered channel and the OHWM determination relied on observation of water levels seen as inundated areas within the channel.

Maps of the aerial photographs used to make the determination are provided in Appendix F. Design plans for Tributaries 1 and 2 are found in Appendix C. Table 4 summarizes the results of OHWM determination.

TABLE 4. SUMMARY OF TRIBUTARIES WITHIN THE AOI

Tributary ID	Length (ft) within AOI	Width (ft)	Meandered? (Yes/No)
1	712.34	15-19	Yes
2	1,214.81	15-20	Yes
3	451.97	15-17	No

3.2.3 Wetlands

A total of twelve (12) wetlands were delineated within the AOI. Wetlands consist of three types: Type 1 (Seasonally Flooded Basin), Fresh (Wet) Meadow (Type 2), and Type 3 (Shallow Marsh), which are discussed below.

Wetland boundary maps with sampling point locations are presented in Appendix G followed by data sheets and field photographs in Appendices H and I. Table 5 summarizes the delineated wetlands, which are described in more detail in the Wetland Site Descriptions section below.

TABLE 5. SUMMARY OF DELINEATED WETLANDS WITHIN THE AOI

Wetland ID	Cowardin Type	Circular 39 Type/Wetland Community	Dominant Vegetation	Total Area within AOI (acres)	Total Area within AOI (sq. ft.)
1	PEM1	Fresh (Wet) Meadow (Type 2)	<i>Phalaris arundinacea</i> (FACW), <i>Cornus alba</i> (FACW), <i>Echinocystis lobata</i> (FACW)	1.430	62,301.81
2	PFO1	Seasonally Flooded Basin (Type 1)	<i>Salix</i> sp., <i>Cornus alba</i> (FACW), <i>Phalaris arundinacea</i> (FACW)	0.007	325.90
3	PEM1, PFO1	Shallow Marsh (Type 3), Seasonally Flooded Basin (Type 1)	<i>Salix interior</i> (FACW), <i>S. X fragilis</i> (FAC), <i>S. discolor</i> (FACW), <i>Populus deltoides</i> (FAC), <i>Cornus alba</i> (FACW), <i>Typha angustifolia</i> (OBL), <i>Phalaris arundinacea</i> (FACW), <i>Equisetum fluviale</i> (OBL), <i>Vitis riparia</i> (FACW), <i>Parthenocissus quinquefolia</i> (FACU)	0.156	6,802.40
4	PEM1	Seasonally Flooded Basin (Type 1)	<i>Phalaris arundinacea</i> (FACW), <i>Setaria pumila</i> (FAC), <i>Urtica dioica</i> (FACW); <i>Ambrosia artemisiifolia</i> (FACU)	0.379	16,487.93
5	PEM1	Seasonally Flooded Basin (Type 1)	<i>Phalaris arundinacea</i> (FACW)	0.310	13,484.72
6	PEM1	Seasonally Flooded Basin (Type 1)	<i>Phalaris arundinacea</i> (FACW)	0.125	5,462.34
7	PEM1	Seasonally Flooded Basin (Type 1)	<i>Polygonum aviculare</i> (FAC), <i>Poa pratensis</i> (FAC)	0.020	866.49
8	PEM1	Seasonally Flooded Basin (Type 1)	<i>Phalaris arundinacea</i> (FACW)	0.900	39,192.21
9	PEM1	Seasonally Flooded Basin (Type 1)	<i>Setaria pumila</i> (FAC), <i>Persicaria pensylvanica</i> (FACW)	0.047	2,035.09
10	PEM1	Seasonally Flooded Basin (Type 1)	<i>Eleocharis obtusa</i> (OBL), <i>Setaria pumila</i> (FAC)	0.014	598.00
11	PEM1	Seasonally Flooded Basin (Type 1)	<i>Eleocharis obtusa</i> (OBL), <i>Echinochloa crus-galli</i> (FACW)	0.021	900.48
12	PFO1	Seasonally Flooded Basin (Type 1)	<i>Populus deltoides</i> (FAC), <i>Ambrosia trifida</i> (FAC), <i>Phalaris arundinacea</i> (FACW)	0.193	8,390.30
			Total	3.601	156,847.672

3.2.3.1 Type 1 (Seasonally Flooded Basin)

The majority of wetlands delineated in the AOI are of this type: Wetland 2, a portion of Wetland 3, and Wetlands 4 through 12.

Wetland 2 is a shallow swale dominated by woody vegetation that connects to Wetland 1 via a culvert under an abandoned road.

The east side of Wetland 3, a depressional basin, is dominated by crack willow (*Salix X fragilis*: FAC) and cottonwoods (*Populus deltoides*: FAC) in the tree stratum and water horsetail (*Equisetum fluviatile*: OBL) in the herb stratum.

Wetlands 4, 5, and 6 are associated with the relocated tributary stream above the OHWM. Reed canary grass (*Phalaris arundinacea*: FACW) is dominant in all three areas. In addition to reed canary grass, Wetland 4 is dominated by yellow bristle grass (*Setaria pumila*: FAC) and stinging nettle (*Urtica dioica*: FACW). Wetland 4 receives overflow drainage via a culvert from the detention area in Wetland 8. Wetland 4 includes swale areas that drain to two large culverts that carry flows under the runway to Wetland 6. Wetland 5 is connected to Wetland 4 via a large culvert under Taxiway B1.

Wetland 7 is a shallow swale located between the apron and taxiway on the north side. The exit culvert appeared blocked so this is likely a closed depression with no connection to Wetland 6. It is dominated by yard knotweed (*Polygonum aviculare*: FAC) and Kentucky blue grass (*Poa pratensis*: FAC).

Wetland 8 is a large detention area constructed initially to manage stormwater for the south hangar development area and is dominated by reed canary grass.

Wetlands 9 and 10 are small wetlands within a newly constructed (2020) detention area to manage stormwater flows from the developing south hangar area.

Wetland 11 is a roadside ditch located along Cedar Avenue that flows south toward an unnamed tributary to the Vermillion River. A blocked culvert in a field access driveway inhibits flow along this ditch. The wetland is dominated by blunt spike rush (*Eleocharis obtusa*: OBL) and barnyard grass (*Echinochloa crus-galli*: FACW).

Wetland 12 is a swale on the west side of the rail line along Highview Avenue. This area contains trees that potentially will be removed as part of obstruction clearing activities. Cottonwoods (*Populus deltoides*: FAC) dominate this wetland along with reed canary grass and giant ragweed (*Ambrosia trifida*: FAC). Sampling point 22, taken in the middle of the swale, characterized this eroded swale, connecting to a large detention area. The A horizon was no longer present at this sampling point, perhaps due to high-flow events causing significant erosion over time, and soils did not meet hydric soils criteria. However, due to the dominance of cottonwoods and weedy

facultative annuals, and the presence of wetland hydrology indicators, further areas were investigated. At wetland sampling point 23, taken along the toeslope, a more intact A horizon was found and all wetland criteria were satisfied, and the swale was delineated.

The boundary determination for these wetlands relied on distinct topographic changes along ditch and swale profiles or detention areas, a transition to upland vegetation, and a lack of wetland hydrology indicators, even as hydric soils crossed the boundary in some cases.

3.2.3.2 Type 2 (Fresh (Wet) Meadow)

Wetland 1 is a fresh (wet) meadow dominated by reed canary grass, cattails (*Typha angustifolia*: OBL), and hairy-fruited sedge (*Carex trichocarpa*: OBL) at wetland sampling point DP19. Invasive reed canary grass dominates but interior areas of the wetland were marked by the presence of vervain (*Verbena hastata*: FACW), late goldenrod (*Solidago gigantea*: FACW), joe pye weed (*Eutrochium maculatum*: OBL), tussock sedge (*Carex stricta*: OBL), and large expanses of hairy-fruited sedge. Significant topographic changes along the rim of the basin are covered by thickets of box elder (*Acer negundo*: FAC), willow (*Salix* sp.), and red osier (*Cornus alba*: FACW). Isolated box elder and elm (*Ulmus americana*: FACW) trees and shrub thickets dot the wetland throughout. Farm fields lie to the north and west. This wetland extends beyond the AOI boundary.

3.2.3.3 Type 3 (Shallow Marsh)

The open west portion of Wetland 3 is covered by cattails below significant slopes dominated by woody vegetation, including sandbar willow (*Salix interior*: FACW), red osier, and small cottonwoods.

The boundary determination for Wetlands 2 and 3 relied on distinct topographic changes, a transition to upland vegetation, a lack of wetland hydrology, and an absence of hydric soils indicators.

3.2.3.4 Wetland Site Descriptions

Information and descriptions on the 12 wetlands in the AOI are provided on the following pages.

Wetland 1*	
Site Information	
Sampling Date	8/1/2022
Cowardin Type	PEM1
Circular 39 Type	Fresh (Wet) Meadow (Type 2)
Wetland Description	Wetland 1 is a fresh (wet) meadow dominated by reed canary grass, cattails, and hairy-fruited sedge. It was previously mapped as PEM1C. At the wetland sampling point (DP19), taken near the field edge, invasive reed canary grass dominates but interior areas of the wetland were marked by the presence of vervain, late goldenrod, joe pye weed, tussock sedge, and large expanses of hairy-fruited sedge. Significant topographic changes along the rim of the basin are covered by thickets of box elder, willow, and red osier. Isolated box elder and elm trees and shrub thickets dot the wetland throughout. The wetland extends beyond the AOI boundary.
Mapped NWI Type	PEM1C
Mapped Soil Type/ Hydric Rating	Mayer loam, swales (318) (Predominantly Hydric)
Photo Numbers**	Photos 1 - 4
Associated Data Pts***	DPs 19-20
Comments	Depressional basin
Wetland Criteria	
Dominant Vegetation	Phalaris arundinacea (FACW), Cornus alba (FACW), Echinocystis lobata (FACW)
Hydric Soil Indicators	Redox Dark Surface (F6)
Hydrology Indicators	Oxidized Rhizospheres on Living Roots (C3), Geomorphic Position (D2), FAC-Neutral (D5)
Boundary Determination	
Description	The boundary was determined by transition to upland vegetation, a lack of wetland hydrology, and hydric soils indicators. Distinct topographic changes along the depressional basin were observed in transition to uplands.

* See Appendix G for Wetland Mapping

** See Appendix I for Photos

*** See Appendix H for Wetland Data Sheets

Wetland 2*	
Site Information	
Sampling Date	8/1/2022
Cowardin Type	PFO1
Circular 39 Type	Seasonally Flooded Basin (Type 1)
Wetland Description	Wetland 2 is a shallow swale that likely receives drainage from the adjacent farm field. This wetland likely was part of Wetland 1 at one time. At the eastern end, a culvert connects this wetland to Wetland 1 under what appears to be an abandoned farm access road. The wetland is dominated by willow, red osier, and reed canary grass. Mature box elders were also observed.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Mayer loam, swales (318) (Predominantly Hydric), Estherville sandy loam, 2 to 6 percent slopes (41B) (Predominantly Non-hydric)
Photo Numbers**	Photos 5 - 6
Associated Data Pts***	N/A
Comments	Swale
Wetland Criteria	
Dominant Vegetation	Salix sp., Cornus alba (FACW), Phalaris arundinacea (FACW)
Hydric Soil Indicators	Observed Redox Dark Surface (F6)
Hydrology Indicators	Observed Geomorphic Position (D2), FAC-Neutral (D5)
Boundary Determination	
Description	The boundary was determined by transition to upland vegetation and a lack of wetland hydrology. Distinct topographic changes along the swale were observed in transition to uplands.

* See Appendix G for Wetland Mapping

** See Appendix I for Photos

*** See Appendix H for Wetland Data Sheets

Wetland 3*	
Site Information	
Sampling Date	8/1/2022
Cowardin Type	PEM1, PFO1
Circular 39 Type	Shallow Marsh (Type 3), Seasonally Flooded Basin (Type 1)
Wetland Description	This depressional wetland consists of two types: an open, cattail-dominated emergent shallow marsh area on the west side and a forested seasonally flooded area on the east side dominated by willows, cottonwood, and red osier. Wetland 3 is previously mapped as PEM1C/PFO1A. The boundary on the west side is formed by steep-sided slopes that transition to more gradual grades on the east side.
Mapped NWI Type	PEM1C/PFO1A
Mapped Soil Type/ Hydric Rating	Kanaranzi loam, 2 to 6 percent slopes (415B) (Non-hydric)
Photo Numbers**	Photos 7 - 13
Associated Data Pts***	DPs 15 - 18
Comments	
Wetland Criteria	
Dominant Vegetation	Salix interior (FACW), S. X fragilis (FAC), S. discolor (FACW), Populus deltoides (FAC), Cornus alba (FACW), Typha angustifolia (OBL), Phalaris arundinacea (FACW), Equisetum fluviatile (OBL), Vitis riparia, Parthenocissus quinquefolia (FACU)
Hydric Soil Indicators	Black Histic (A3), Sandy Redox (S5)
Hydrology Indicators	High Water Table (A2), Saturation (A3), Geomorphic Position (D2), FAC-Neutral (D5)
Boundary Determination	
Description	The boundary was determined by transition to upland vegetation, a lack of wetland hydrology, and hydric soils indicators. Significant topographic changes along the steep-sided depressional basin on the west side were observed in transition to uplands; on the east side, distinct topographic changes aided in the boundary determination.

* See Appendix G for Wetland Mapping

** See Appendix I for Photos

*** See Appendix H for Wetland Data Sheets

Wetland 4*	
Site Information	
Sampling Date	8/2/2022
Cowardin Type	PEM1
Circular 39 Type	Seasonally Flooded Basin (Type 1)
Wetland Description	The OHWM was delineated along the channel belt width and wetland area above the OHWM was dominated by reed canary grass. The relocated tributary channel was dominated by reed canary grass as well. Stinging nettle and yellow bristle grass were dominant at wetland sampling point (DP1) and small patches of cattails were observed throughout. East and south of the channel, vegetation in swales was dominated by reed canary grass and annual ragweed (DP3). Wetland 8 connects to Wetland 4 via a large culvert. Outflows from Wetland 4 are passed through two large culverts under the runway to Wetland 6.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Waukegan silt loam, 0 to 1 percent slopes (411A) (Non-hydric), Marshan silty clay loam (252) (Predominantly Hydric)
Photo Numbers**	Photos 42 - 50
Associated Data Pts***	DPs 1 - 4
Comments	Relocated tributary
Wetland Criteria	
Dominant Vegetation	Phalaris arundinacea (FACW), Setaria pumila (FAC), Urtica dioica (FACW); Ambrosia artemisiifolia (FACU)
Hydric Soil Indicators	Redox Dark Surface (F6)
Hydrology Indicators	Geomorphic Position (D2), FAC-Neutral (D5)
Boundary Determination	
Description	The boundary was determined by transition to upland vegetation, a lack of wetland hydrology, and hydric soils indicators. Distinct topographic changes along the tributary profile were observed in transition to uplands. Along the infield swales on the east side, minor topographic changes were observed.

* See Appendix G for Wetland Mapping

** See Appendix I for Photos

*** See Appendix H for Wetland Data Sheets

Wetland 5*	
Site Information	
Sampling Date	8/2/2022
Cowardin Type	PEM1
Circular 39 Type	Seasonally Flooded Basin (Type 1)
Wetland Description	The OHWM was delineated along the channel belt width and wetland area above the OHWM was dominated by reed canary grass. Wetland 5 was previously mapped as PEM1Ad. The relocated tributary channel was dominated by reed canary grass. Wetland 5 connects to Wetland 4 via a large culvert under Taxiway B1. The meandered channel section transitions to a natural channel near the railroad crossing where box elder was dominant. In uplands here, stream banks were dominated by honeysuckle, elderberry, smooth brome, and Canada goldenrod.
Mapped NWI Type	PEM1Ad
Mapped Soil Type/ Hydric Rating	Waukegan silt loam, 0 to 1 percent slopes (411A) (Non-hydric)
Photo Numbers**	Photos 51 - 59
Associated Data Pts***	DPs 9 - 10
Comments	Relocated tributary
Wetland Criteria	
Dominant Vegetation	Phalaris arundinacea (FACW)
Hydric Soil Indicators	Redox Dark Surface (F6)
Hydrology Indicators	Geomorphic Position (D2), FAC-Neutral (D5)
Boundary Determination	
Description	The boundary was determined by a lack of wetland hydrology and hydric soils indicators. Distinct topographic changes along the tributary profile were observed in transition to uplands.

* See Appendix G for Wetland Mapping

** See Appendix I for Photos

*** See Appendix H for Wetland Data Sheets

Wetland 6*	
Site Information	
Sampling Date	8/3/2022
Cowardin Type	PEM1
Circular 39 Type	Seasonally Flooded Basin (Type 1)
Wetland Description	The OHWM was delineated along the observable channel and wetland area above the OHWM was dominated by reed canary grass. The channel was also dominated by reed canary grass. This section of the tributary was relocated around the time of airfield construction. Wetland 6 connects to Wetland 4 via two large culverts and drains north and then east outside of the AOI. Wetland 6 extends beyond the AOI.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Waukegan silt loam, 0 to 1 percent slopes (411A) (Non-hydric)
Photo Numbers**	Photos 69 - 74
Associated Data Pts***	DPs 5 -6
Comments	Relocated tributary
Wetland Criteria	
Dominant Vegetation	Phalaris arundinacea (FACW)
Hydric Soil Indicators	Redox Dark Surface (F6)
Hydrology Indicators	Geomorphic Position (D2), FAC-Neutral (D5)
Boundary Determination	
Description	The boundary was determined by transition to upland vegetation, a lack of wetland hydrology, and hydric soils indicators. Distinct topographic changes along the tributary profile were observed in transition to uplands.

* See Appendix G for Wetland Mapping

** See Appendix I for Photos

*** See Appendix H for Wetland Data Sheets

Wetland 7*	
Site Information	
Sampling Date	8/3/2022
Cowardin Type	PEM1
Circular 39 Type	Seasonally Flooded Basin (Type 1)
Wetland Description	Wetland 7 is a shallow drainage swale located between the apron and taxiway on the north side. The exit culvert on the northwest side appeared blocked so this is likely a closed depression with no connection to Wetland 6. Two input culverts are located at the southeast end. Wetland 7 is dominated by yard knotweed and Kentucky blue grass.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Marshan silty clay loam (252) (Predominantly Hydric)
Photo Numbers**	Photos 75 - 77
Associated Data Pts***	DPs 7 - 8
Comments	Swale
Wetland Criteria	
Dominant Vegetation	Polygonum aviculare (FAC), Poa pratensis (FAC)
Hydric Soil Indicators	Depleted Matrix (F3)
Hydrology Indicators	Geomorphic Position (D2), FAC-Neutral (D5)
Boundary Determination	
Description	The boundary was delineated at the toeslope of the swale. In transition to uplands, hydrophytic vegetation crossed the boundary but hydrology and hydric soils indicators were absent on the steep-sided swale slope.

* See Appendix G for Wetland Mapping

** See Appendix I for Photos

*** See Appendix H for Wetland Data Sheets

Wetland 8*	
Site Information	
Sampling Date	8/3/2022
Cowardin Type	PEM1
Circular 39 Type	Seasonally Flooded Basin (Type 1)
Wetland Description	Wetland 8 is a detention area constructed as part of the south hangar expansion in 1999. This wetland area was previously mapped as PEM1A. While dominated by reed canary grass, other species seen include blunt spike rush, curly dock, chufa, and field horsetail.
Mapped NWI Type	PEM1A
Mapped Soil Type/ Hydric Rating	Waukegan silt loam, 0 to 1 percent slopes (411A) (Non-hydric), Marshan silty clay loam (252) (Predominantly Hydric)
Photo Numbers**	Photos 38 - 41
Associated Data Pts***	DPs 11 - 12
Comments	Detention Area
Wetland Criteria	
Dominant Vegetation	Phalaris arundinacea (FACW)
Hydric Soil Indicators	Depleted Matrix (F3), Depleted Below Dark Surface (A11)
Hydrology Indicators	Water-Stained Leaves (B9), Saturation Visible on Aerial Imagery (C9), Geomorphic Position (D2), FAC-Neutral (D5)
Boundary Determination	
Description	The boundary was delineated at the toeslope of the detention area. A transition to upland vegetation, a lack of hydrology and hydric soils indicators aided the boundary determination.

* See Appendix G for Wetland Mapping

** See Appendix I for Photos

*** See Appendix H for Wetland Data Sheets

Wetland 9*	
Site Information	
Sampling Date	8/3/2022
Cowardin Type	PEM1
Circular 39 Type	Seasonally Flooded Basin (Type 1)
Wetland Description	Wetlands 9 and 10 are small wetlands separated by a slight upland ridge within a detention area constructed for the hangar development to the south. This area connects to Wetland 8 via a line of rip rap at the western corner. Wetland 9 is dominated by yellow bristle grass and smartweed. Yard knotweed and some cattails on the northern edges were also observed.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Waukegan silt loam, 0 to 1 percent slopes (411A) (Non-hydric)
Photo Numbers**	Photos 34 - 37
Associated Data Pts***	DPs 13 - 14
Comments	Detention Area
Wetland Criteria	
Dominant Vegetation	Setaria pumila (FAC), Persicaria pensylvanica (FACW)
Hydric Soil Indicators	Redox Dark Surface (F6)
Hydrology Indicators	Saturation Visible on Aerial Imagery (C9), Geomorphic Position (D2), FAC-Neutral (D5)
Boundary Determination	
Description	The boundary was delineated at the toeslope of the detention area on the north and west sides, while a lack of hydrophytic vegetation and hydric soils indicators marked the boundary on the south and east sides.

* See Appendix G for Wetland Mapping

** See Appendix I for Photos

*** See Appendix H for Wetland Data Sheets

Wetland 10*	
Site Information	
Sampling Date	8/3/2022
Cowardin Type	PEM1
Circular 39 Type	Seasonally Flooded Basin (Type 1)
Wetland Description	Wetlands 9 and 10 are small wetlands separated by a slight upland ridge within a detention area constructed for the hangar development to the south. This detention area connects to Wetland 8 via a line of rip rap at the western corner. Wetland 10, on the southern edge of the detention area, had some standing water. Blunt spike rush, curly dock, reed canary grass, Torrey's rush, and redtop were observed in the wetter areas.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Waukegan silt loam, 0 to 1 percent slopes (411A) (Non-hydric)
Photo Numbers**	Photos 34 - 37
Associated Data Pts***	N/A
Comments	Detention Area
Wetland Criteria	
Dominant Vegetation	Eleocharis obtusa (OBL), Setaria pumila (FAC)
Hydric Soil Indicators	N/A
Hydrology Indicators	Observed Geomorphic Position (D2), FAC-Neutral (D5), standing water in parts
Boundary Determination	
Description	The boundary was delineated at the toeslope of the detention area on the south and west sides, while a lack of hydrophytic vegetation and hydric soils indicators marked the boundary on the north and east sides.

* See Appendix G for Wetland Mapping

** See Appendix I for Photos

*** See Appendix H for Wetland Data Sheets

Wetland 11*	
Site Information	
Sampling Date	8/3/2022
Cowardin Type	PEM1
Circular 39 Type	Seasonally Flooded Basin (Type 1)
Wetland Description	Wetland 11 is a roadside ditch located along Cedar Avenue that flows south toward an unnamed tributary to the Vermillion River. A blocked culvert in a field access driveway on the south end inhibits flow along this ditch. The wetland is dominated by blunt spike rush and barnyard grass.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Ostrander loam, 1 to 6 percent slopes (2B) (Non-hydric)
Photo Numbers**	Photos 20 - 21
Associated Data Pts***	N/A
Comments	Roadside Ditch
Wetland Criteria	
Dominant Vegetation	Eleocharis obtusa (OBL), Echinochloa crus-galli (FACW)
Hydric Soil Indicators	Observed Redox Dark Surface (F6)
Hydrology Indicators	Observed Geomorphic Position (D2), FAC-Neutral (D5), Saturation Visible on Aerial Imagery (C9)
Boundary Determination	
Description	The boundary was determined by a lack of wetland hydrology indicators and hydrophytic vegetation and distinct topographic changes along the roadside swale.

* See Appendix G for Wetland Mapping

** See Appendix I for Photos

*** See Appendix H for Wetland Data Sheets

Wetland 12*	
Site Information	
Sampling Date	9/8/2022
Cowardin Type	PFO1
Circular 39 Type	Seasonally Flooded Basin (Type 1)
Wetland Description	Wetland 12 is a swale on the west side of the rail line along Highview Avenue. Cottonwoods dominate this wetland along with reed canary grass and giant ragweed. Sampling point DP22, taken in the middle of the swale, characterized this eroded swale connecting to a large detention area to the south. The A horizon was no longer present at this sampling point, perhaps due to high-flow events causing significant erosion over time, and soils did not meet hydric soils criteria. However, due to the dominance of cottonwoods and weedy facultative annuals, and the presence of wetland hydrology indicators, further areas were investigated. At wetland sampling point DP23, taken along the toeslope, a more intact A horizon was found and all wetland criteria were satisfied and the swale was delineated.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Waukegan silt loam, 0 to 1 percent slopes (411A) (Non-hydric), Cylinder loam, 0 to 2 percent slopes (129) (Predominantly Non-hydric)
Photo Numbers**	Photos 80 - 85
Associated Data Pts***	DPs 22 - 24
Comments	Swale
Wetland Criteria	
Dominant Vegetation	Populus deltoides (FAC), Ambrosia trifida (FAC), Phalaris arundinacea (FACW)
Hydric Soil Indicators	Redox Dark Surface (F6)
Hydrology Indicators	Saturation Visible on Aerial Imagery (C9), Geomorphic Position (D2), FAC-Neutral (D5)
Boundary Determination	
Description	The boundary was determined by a lack of wetland hydrology indicators and hydrophytic vegetation, an absence of hydric soils indicators, and distinct topographic changes along the swale.

* See Appendix G for Wetland Mapping

** See Appendix I for Photos

*** See Appendix H for Wetland Data Sheets

3.3 Uplands

Uplands within the AOI consisted primarily of managed landscapes on the active airfield covered by a mixture of grasses and forbs. Areas outside of the airfield are in agricultural production, including a large area in the southeastern corner of the AOI. Fields were in either corn or beans at the time of fieldwork. Wetlands to the southeast (Wetlands 1-3) exhibited a woody fringe dominated by Siberian elm, blackberry, honeysuckle, and Virginia creeper.

Dominant vegetation found at upland sampling points on the airfield included Kentucky blue grass, smooth brome, red clover, yellow sweet clover, Bird's-foot trefoil, giant ragweed, and annual ragweed, and, in farm fields, Canada goldenrod, smooth amaranth, and narrow-leaved hawk's-beard.

Other species observed included creeping wild rye, timothy, red and white clover, alfalfa, catnip, bladder campion, great plantain, dandelion, common milkweed, and Canada thistle. Transition to uplands was marked, in most cases, by distinct topographic changes, a lack of wetland hydrology and hydrophytic vegetation, and/or an absence of hydric soils. Hydrophytic vegetation and/or hydric soils crossed the boundary particularly along drainageways.

Table 6 lists the species found at upland sampling points and observed while on site.

TABLE 6. UPLAND SPECIES OBSERVED WITHIN THE AOI

Scientific Name	Common Name	Wetland Indicator Status
<i>Amaranthus hybridus</i>	Smooth amaranth	UPL
<i>Ambrosia artemisiifolia</i>	Common ragweed	FACU
<i>Ambrosia trifida</i>	Giant ragweed	FAC
<i>Asclepias syriaca</i>	Common milkweed	FACU
<i>Bromus inermis</i>	Smooth brome	FACU
<i>Cirsium arvense</i>	Canada thistle	FACU
<i>Crepis tectorum</i>	Narrow-leaved hawk's-beard	UPL
<i>Elymus repens</i>	Creeping wild rye	FACU
<i>Lonicera tatarica</i>	Honeysuckle	FACU
<i>Lotus corniculata</i>	Bird's-foot trefoil	FACU
<i>Medicago sativa</i>	Alfalfa	UPL
<i>Melilotus officinalis</i>	Yellow sweet clover	FACU
<i>Nepeta cataria</i>	Catnip	FACU
<i>Parthenocissus quinquefolia</i>	Virginia creeper	FACU
<i>Phleum pratense</i>	Timothy	FACU
<i>Plantago major</i>	Great plantain	FAC
<i>Poa pratensis</i>	Kentucky blue grass	FAC
<i>Rubus occidentalis</i>	Blackberry	UPL
<i>Silene vulgaris</i>	Bladder campion	FACU
<i>Solidago canadensis</i>	Canada goldenrod	FACU
<i>Taraxacum officinale</i>	Common dandelion	FACU

Scientific Name	Common Name	Wetland Indicator Status
<i>Trifolium pratense</i>	Red clover	FACU
<i>Trifolium repens</i>	White clover	FACU
<i>Ulmus pumila</i>	Siberian elm	UPL

3.4 Summary

In summary, a majority of the AOI (91.7%) is covered by soils rated as non-hydric. The largest portion of the AOI (63.6%) is covered by soils from two Waukegan silt loam units (411A and 411B) on slopes from 0 to 6 percent. Loamy soils from two non-hydric Ostrander series (2B and 2C) cover another 19.6% of the AOI and are found on moraines. Three predominantly hydric soils units cover 6.9% of the AOI.

Twelve total wetlands were delineated within the AOI: Eleven (11) wetlands were identified under drier than normal environmental conditions and one wetland was identified under normal environmental conditions. Twenty-four (24) sampling points document conditions within the AOI. Normal circumstances were found to be present with the exception of farmed areas located outside of the active airfield. The wetland boundary was determined by the observation of multiple indicators of wetland hydrology associated with wetland vegetation on soils exhibiting Black Histic (A3), Depleted Below Dark Surface (A11), Depleted Matrix (F3), Redox Dark Surface (F6), and Sandy Redox (S5). Wetland hydrology was indicated by primary and secondary indicators observed as High Water Table (A2), Saturation (A3), Water-Stained Leaves (B9), Oxidized Rhizospheres on Living Roots (C3), Saturation Visible on Aerial Imagery (C9), Geomorphic Position (D2), and positive FAC-Neutral Test (D5). The boundary determinations primarily relied on the absence of one or more wetland criteria: lack of hydrophytic vegetation, wetland hydrology indicators, and hydric soils. Distinct topographic breaks often found in association with ditch or depressional areas also aided the boundary determination.

4. Conclusions

A total of twelve (12) separate wetland boundaries enclosing 3.601 acres were delineated within the AOI at the Airport. A jurisdictional determination for these wetlands will be needed from the USACE as they may be considered jurisdictional water bodies. A Section 404 wetland fill permit from the USACE will be needed for any construction activities within the jurisdictional wetland boundaries. A Section 401 water quality certification of the 404 permit will also be required by the Minnesota Pollution Control Agency, and additional permits may be required from the Local Government Unit (LGU) under the Minnesota Wetland Conservation Act. Independent review by the LGU may also be required. Final authority over the project rests with the above federal, state, and local agencies.

The wetland boundaries established by this work are valid only for the subject project and any use or interpretation of its findings for areas outside the project AOI is not supported. The user of this wetland boundary report is advised that changing environmental conditions may affect the future validity of the wetland boundaries so established.

5. Certifications and Limitations

The undersigned does hereby certify and state that she is an employee of Mead & Hunt, Inc., that she has 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 *1987 Wetland Delineation Manual* as enhanced by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (U.S. Army Corps of Engineers, 2010).

This wetland delineation report documents vegetation, soils, and hydrology conditions on the above-referenced parcel according to these standard accepted practices, and the wetland boundary so established is valid only for the designated area. No uses or interpretations of wetland conditions or boundaries outside of the work area are supported by this work.

The mapped wetland boundaries are valid under the environmental conditions existing at the time of delineation. The user of this information is hereby notified that changing environmental conditions may affect the future validity of the wetland boundary.

MEAD & HUNT, Inc.



Brauna Hartzell
Wetland Ecologist & GIS Analyst

Date: September 2022

6. References

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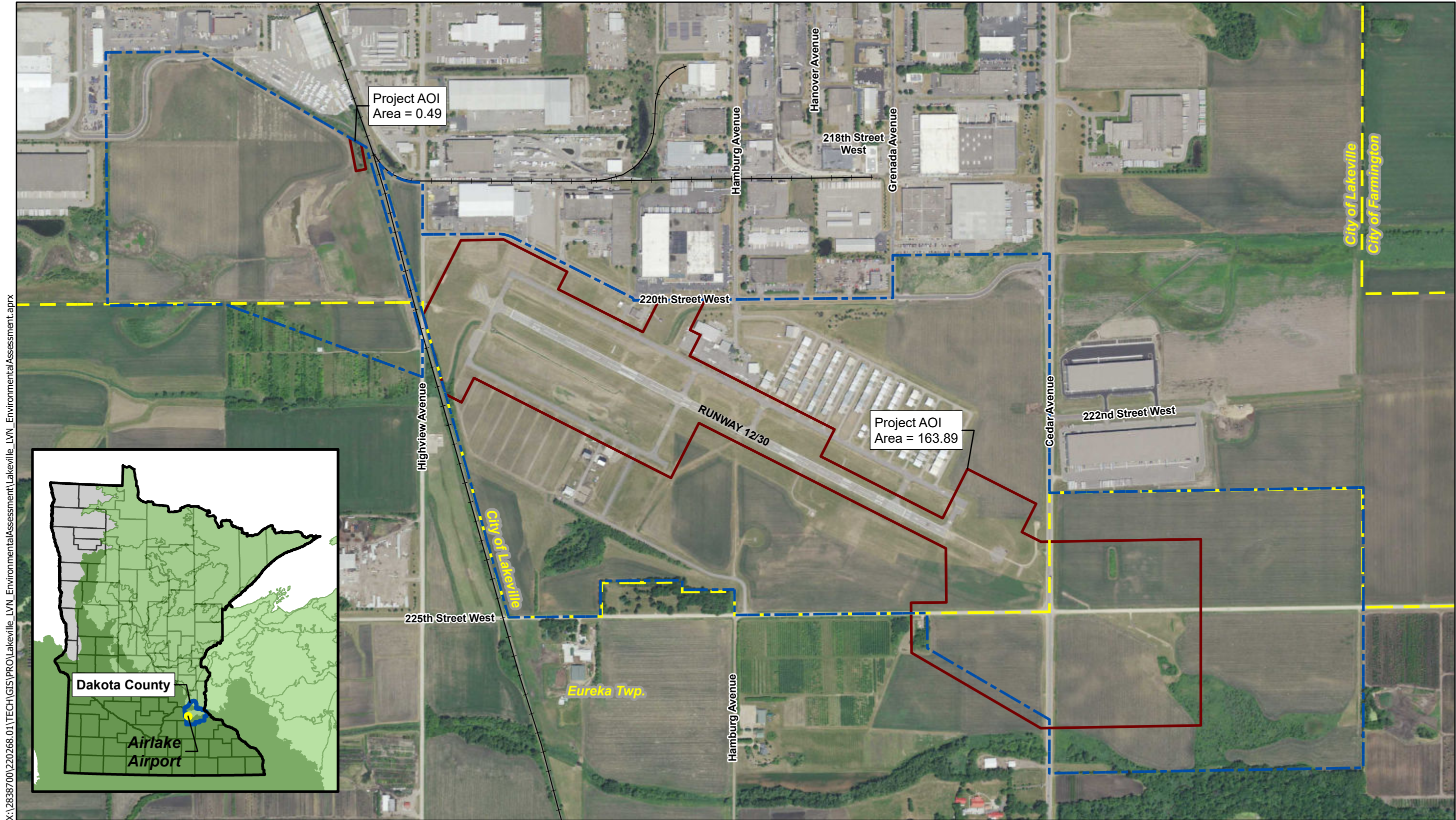
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Appendix A. Project Location Map



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PROJECT LOCATION MAP

AIRLAKE AIRPORT



Airport Property Boundary
 Project Area of Interest (AOI)

Railroad
 Corporate Boundary

LRRSYM

K
 M

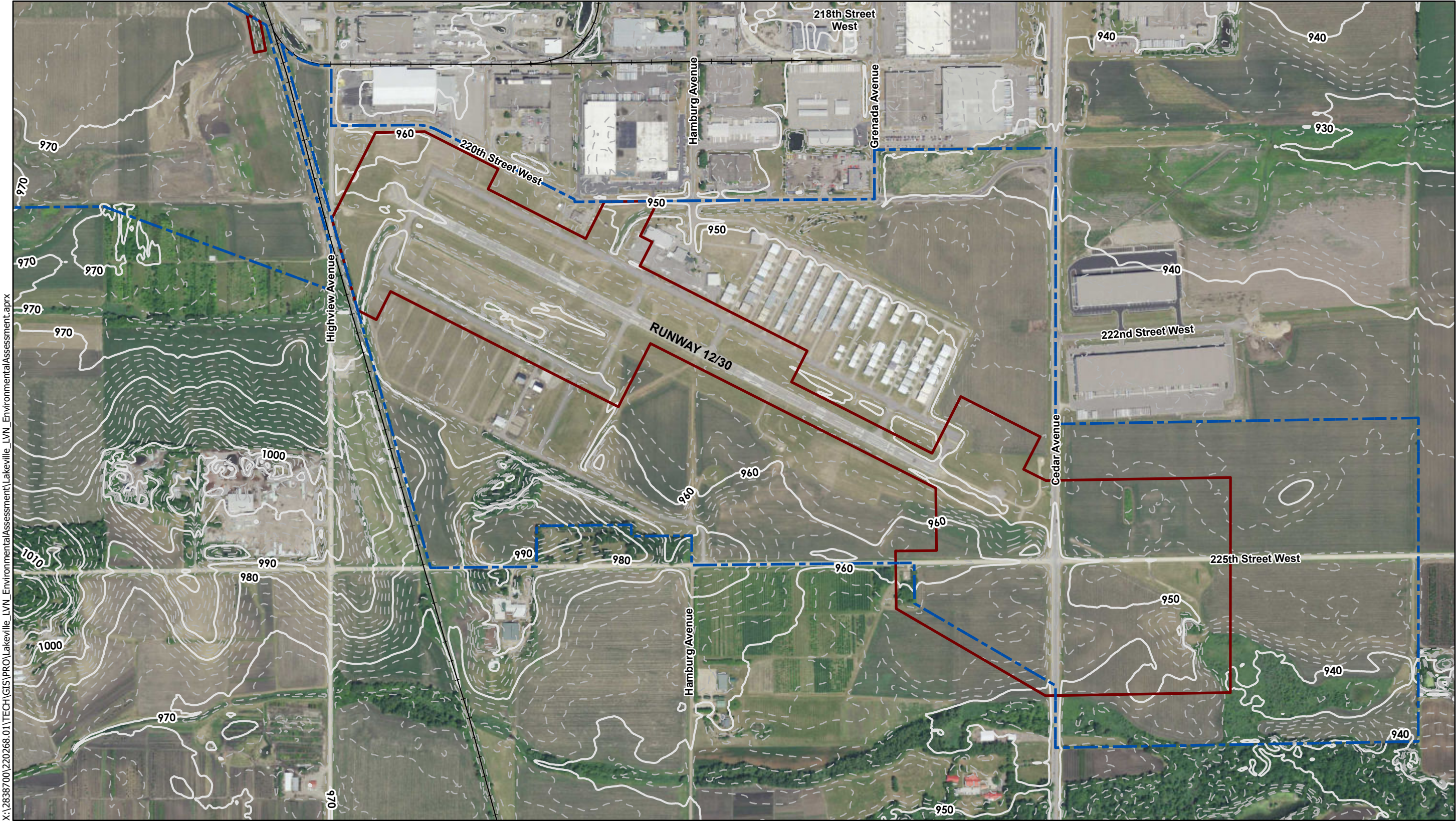
DATA SOURCES

- Image Source: MnGeo WMS Image Service, NAIP 2021, accessed at <https://imageserver.gisd.ata.mn.gov/cgi-bin/wms?>
- Township, Range, and Section (TRS) Boundaries from MN Geospatial Commons accessed at <https://gisdata.mn.gov/dataset/plan-mngeo-trs>
- Corporate boundaries from Counties and Cities and Townships 2020, Twin Cities Metropolitan Area accessed at <https://gisdata.mn.gov/dataset/us-mn-state-metc-bdry-census2020counties-ctus>

PROJECT LOCATION

Sections 32 and 33, T114, R20W
 Sections 3 and 4, T113, R20W
 City of Lakeville
 Dakota County, MN
 LRR Subregion: M
 USACE Regional Supplement: Midwest
 Area = 164.4 acres
 Field work conducted August 1 - 4 and
 September 8, 2022

Appendix B. Detailed Topography and NRCS Soils Mapping



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DETAILED TOPOGRAPHY MAP

AIRLAKE AIRPORT



Legend

- | | | | |
|--|--------------------------------|--|--------------|
| | Airport Property Boundary | | Contour Type |
| | Project Area of Interest (AOI) | | Intermediate |
| | Railroad | | |

DATA SOURCES

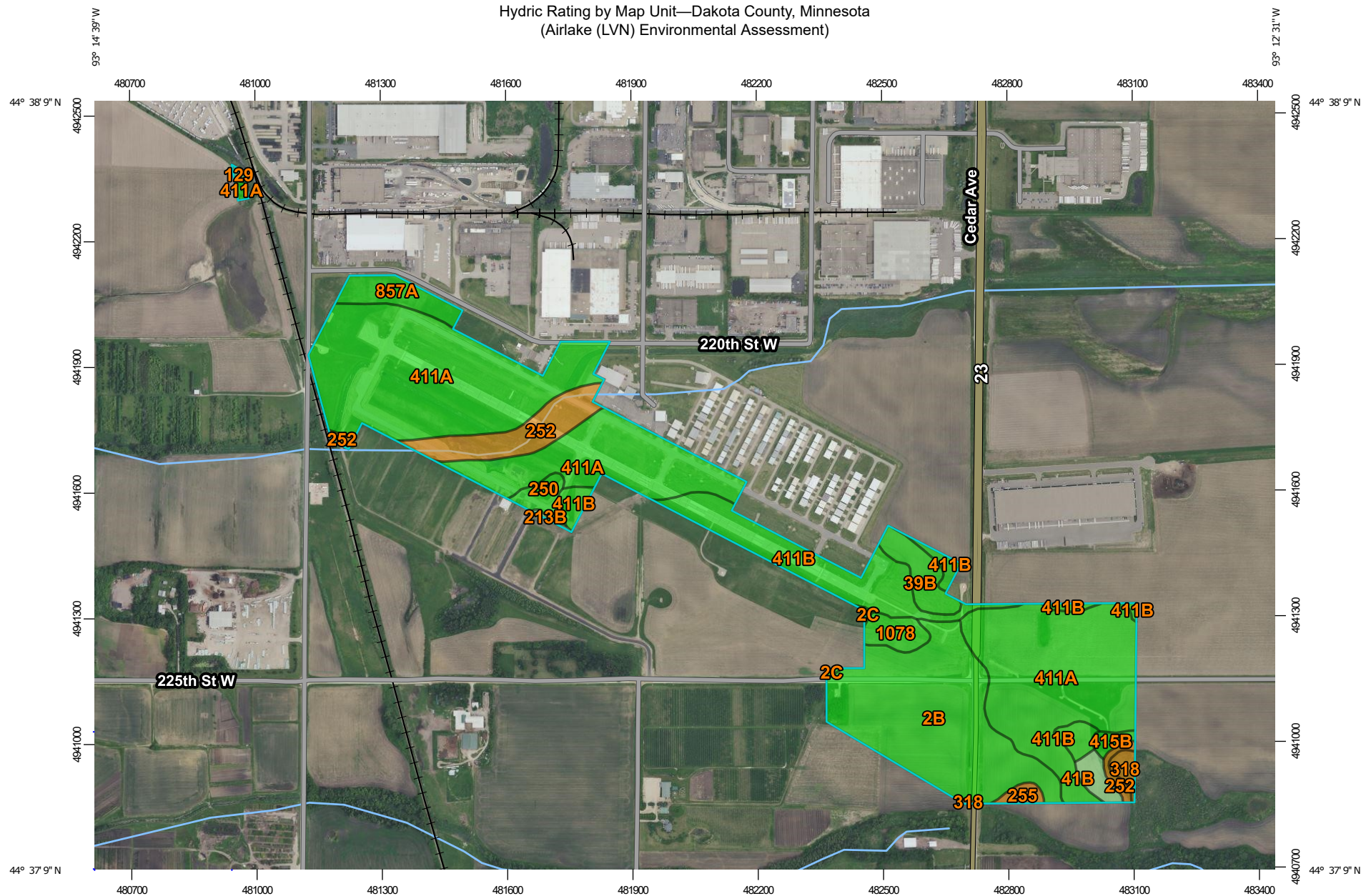
1. Image Source: MGeo WMS Image Service, NAIP 2021, accessed at <https://imageserver.gisdata.mn.gov/cgi-bin/wms?>

2. Contours derived from LIDAR data collected in 2008 for SE Minnesota LiDAR Collection Project. Contour interval is 2 feet. Accessed at <http://arcgis.dnr.state.mn.us/maps/mntopo/>

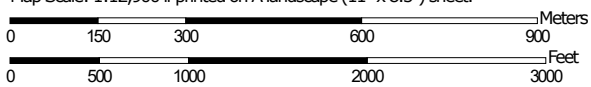
PROJECT LOCATION

Sections 32 and 33, T114, R20W
Sections 3 and 4, T113, R20W
City of Lakeville
Dakota County, MN
LRR Subregion: M
USACE Regional Supplement: Midwest
Area = 164.4 acres
Field work conducted August 1 - 4 and
September 8, 2022

Hydric Rating by Map Unit—Dakota County, Minnesota (Airlake (LVN) Environmental Assessment)



Map Scale: 1:12,900 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

9/21/2022
Page 1 of 5

Hydric Rating by Map Unit—Dakota County, Minnesota
(Airlake (LVN) Environmental Assessment)

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 1:15,800.

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: Dakota County, Minnesota
 Survey Area Data: Version 17, Sep 10, 2021

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

Date(s) aerial images were photographed: May 15, 2020—Jun 9, 2020

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
2B	Ostrander loam, 1 to 6 percent slopes	0	31.8	19.3%
2C	Ostrander loam, 6 to 12 percent slopes	0	0.3	0.2%
39B	Wadena loam, 2 to 6 percent slopes	0	4.1	2.5%
41B	Estherville sandy loam, 2 to 6 percent slopes	1	1.9	1.1%
129	Cylinder loam, 0 to 2 percent slopes	15	0.2	0.1%
213B	Klinger silt loam, 1 to 5 percent slopes	5	0.2	0.1%
250	Kennebec silt loam	0	2.1	1.3%
252	Marshan silty clay loam	90	9.2	5.6%
255	Mayer silt loam	90	1.0	0.6%
318	Mayer loam, swales	90	1.2	0.7%
411A	Waukegan silt loam, 0 to 1 percent slopes	0	86.9	52.8%
411B	Waukegan silt loam, 1 to 6 percent slopes	0	17.8	10.8%
415B	Kanaranzi loam, 2 to 6 percent slopes	0	1.0	0.6%
857A	Urban land-Waukegan complex, 0 to 1 percent slopes	0	4.3	2.6%
1078	Anthropotic Udorthents, 2 to 9 percent slopes	0	2.7	1.6%
Totals for Area of Interest			164.4	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

Hydric Soil List - All Components

This table lists the map unit components and their hydric status in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

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). These soils, under natural conditions, 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).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
 - A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - B. Show evidence that the soil meets the definition of a hydric soil;
3. Soils that are frequently ponded for long or very long duration during the growing season.
 - A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - B. Show evidence that the soil meets the definition of a hydric soil;
4. Map unit components that are frequently flooded for long duration or very long duration during the growing season that:
 - A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - B. Show evidence that the soil meets the definition of a hydric soil;

Hydric Condition: Food Security Act information regarding the ability to grow a commodity crop without removing woody vegetation or manipulating hydrology.

References:

- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. Doc. 2012-4733 Filed 2-28-12. February, 28, 2012. Hydric soils of 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. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.
- Vasilas, L.M., G.W. Hurt, and C.V. Noble, editors. Version 7.0, 2010. Field indicators of hydric soils in the United States.

Report—Hydric Soil List - All Components

Hydric Soil List - All Components—MN037-Dakota County, Minnesota					
Map symbol and map unit name	Component/Local Phase	Comp. pct.	Landform	Hydric status	Hydric criteria met (code)
2B: Ostrander loam, 1 to 6 percent slopes	Ostrander	85	Moraines	No	—
	Dickinson	8	—	No	—
	Klinger	7	—	No	—
2C: Ostrander loam, 6 to 12 percent slopes	Ostrander	85	Moraines	No	—
	Dickinson	8	—	No	—
	Klinger	7	—	No	—
39B: Wadena loam, 2 to 6 percent slopes	Wadena	75-95	Outwash plains,terraces	No	—
	Estherville	5-15	Outwash plains,terraces	No	—
	Dickinson	0-10	Outwash plains,terraces	No	—
41B: Estherville sandy loam, 2 to 6 percent slopes	Estherville	75-95	Outwash plains,terraces	No	—
	Dickinson	5-10	Outwash plains,terraces	No	—
	Wadena	0-10	Outwash plains,terraces	No	—
	Biscay	0-5	Outwash plains,terraces	Yes	2
129: Cylinder loam, 0 to 2 percent slopes	Cylinder	75-95	Outwash plains,terraces	No	—
	Biscay	5-15	Outwash plains,terraces	Yes	2
	Biscay-Depressional	0-10	Depressions on outwash plains	Yes	2
213B: Klinger silt loam, 1 to 5 percent slopes	Klinger	90	Moraines	No	—
	Maxfield	5	Drainageways on moraines	Yes	2
	Ostrander	5	—	No	—
250: Kennebec silt loam	Kennebec	100	Outwash plains	No	—
252: Marshan silty clay loam	Marshan	90	Flats on stream terraces,flats on outwash plains	Yes	2
	Cylinder	10	—	No	—
255: Mayer silt loam	Mayer	90	Flats on stream terraces,flats on outwash plains	Yes	2
	Cylinder	10	—	No	—

Hydric Soil List - All Components--MN037-Dakota County, Minnesota					
Map symbol and map unit name	Component/Local Phase	Comp. pct.	Landform	Hydric status	Hydric criteria met (code)
318: Mayer loam, swales	Mayer-Swales	90	Depressions on outwash plains, depressions on stream terraces	Yes	2,3
	Cylinder	10	—	No	—
411A: Waukegan silt loam, 0 to 1 percent slopes	Waukegan	90	Stream terraces, outwash plains	No	—
	Kanarazni	5	—	No	—
	Estherville	5	—	No	—
411B: Waukegan silt loam, 1 to 6 percent slopes	Waukegan	90	Stream terraces, outwash plains	No	—
	Estherville	5	—	No	—
	Kanarazni	5	—	No	—
415B: Kanarazni loam, 2 to 6 percent slopes	Kanarazni	100	Outwash plains	No	—
857A: Urban land-Waukegan complex, 0 to 1 percent slopes	Urban land	90	Outwash plains	No	—
	Waukegan	10	Outwash plains	No	—
1078: Anthroportic Udorthents, 2 to 9 percent slopes	Anthroportic Udorthents	100-100	—	Unranked	—

Data Source Information

Soil Survey Area: Dakota County, Minnesota

Survey Area Data: Version 17, Sep 10, 2021

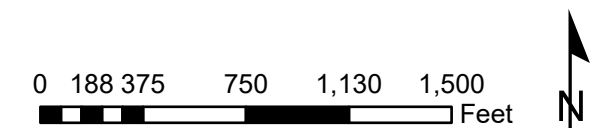
Appendix C. Aquatic Resources and FEMA Floodplain Mapping

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AQUATIC RESOURCES MAP

AIRLAKE AIRPORT



Airport Property Boundary

Project Area of Interest (AOI)

Railroad

DNR Public Waters Basin

DNR Public Watercourse

DNR Trout Stream

Confluences and Flow Direction

NWI Cowardin Class

Aquatic Bed/Nonpersistent Emergent

Emergent

Forested

Scrub-Shrub

Unconsolidated Bottom (Open Water)

DATA SOURCES

1. Image Source: MnGeo WMS Image Service, NAIP 2021, accessed at <https://imageserver.gisdata.mn.gov/cgi-bin/wms?>

2. DNR Public Waters Basins and Watercourses, accessed at <https://gisdata.mn.gov/dataset/water-mn-public-waters>

3. State Designated Trout Streams, Minnesota, accessed at <https://gisdata.mn.gov/dataset/env-trout-stream-designations>

4. National Wetland Inventory for Minnesota (2009-2014), accessed at <https://gisdata.mn.gov/dataset/water-nat-wetlands-inv-2009-2014>

5. DNR River and Stream Centerlines (Flow) - Hydrography Dataset, accessed at <https://gisdata.mn.gov/dataset/water-dnr-hydrography>

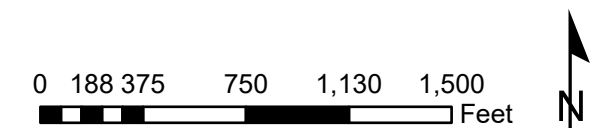
PROJECT LOCATION

Sections 32 and 33, T114, R20W
Sections 3 and 4, T113, R20W
City of Lakeville
Dakota County, MN
LRR Subregion: M
USACE Regional Supplement: Midwest
Area = 164.4 acres
Field work conducted August 1 - 4 and September 8, 2022

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FEMA FLOODPLAIN MAP
AIRLAKE AIRPORT



Legend

Airport Property Boundary

Project Area of Interest (AOI)

Railroad

Flood Hazard Zones

1% Annual Chance Flood Hazard

Regulatory Floodway

0.2% Annual Chance Flood Hazard

Flood Hazard Boundaries

Limit Lines

SFHA / Flood Zone Boundary

DATA SOURCES

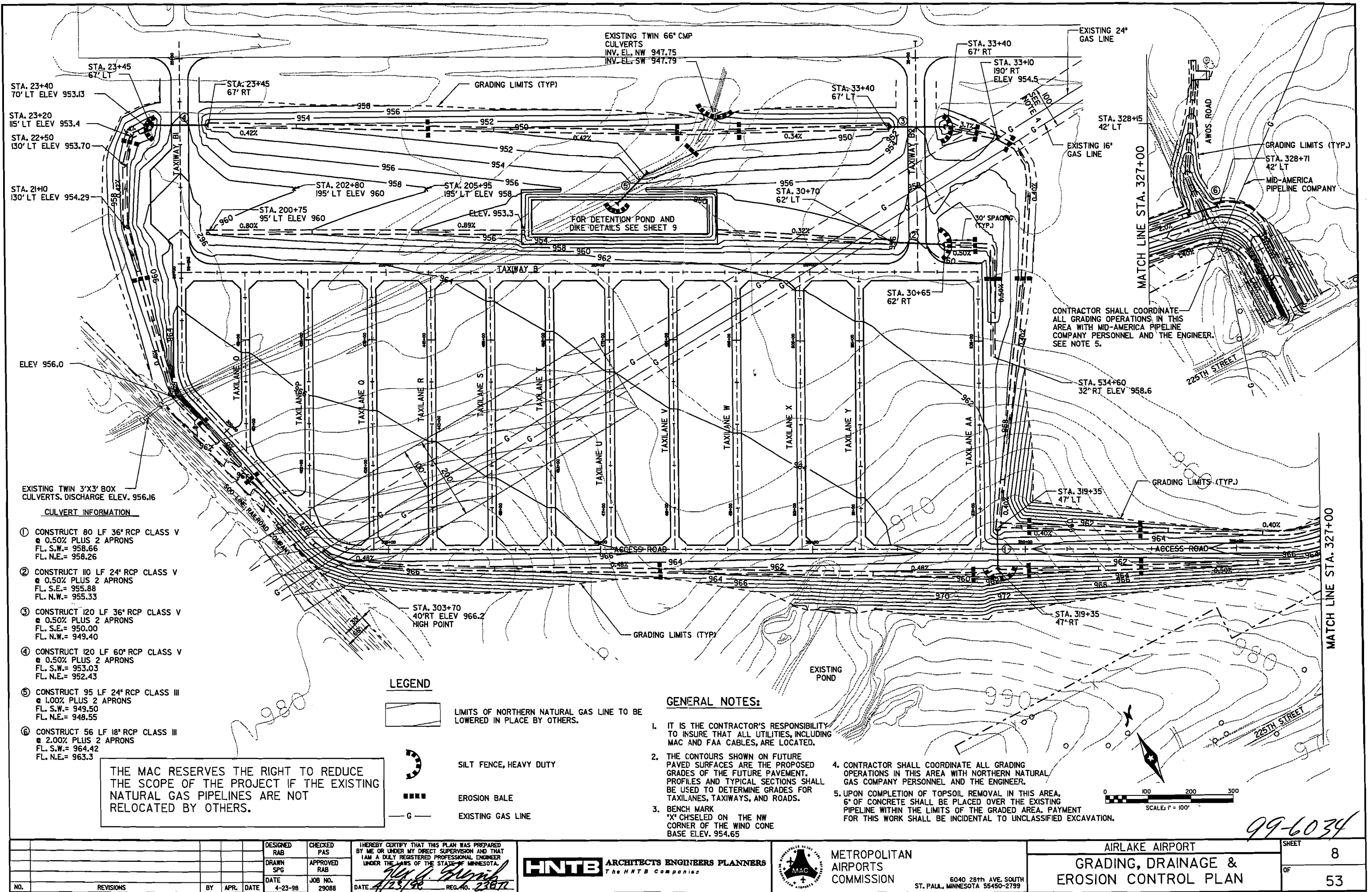
1. Image Source: MnGeo WMS Image Service, NAIP 2021, accessed at <https://imageserver.gisdata.mn.gov/cgi-bin/wms?>

2. DNR River and Stream Centerlines (Flow) - Hydrography Dataset, accessed at <https://gisdata.mn.gov/dataset/water-dnr-hydrography>

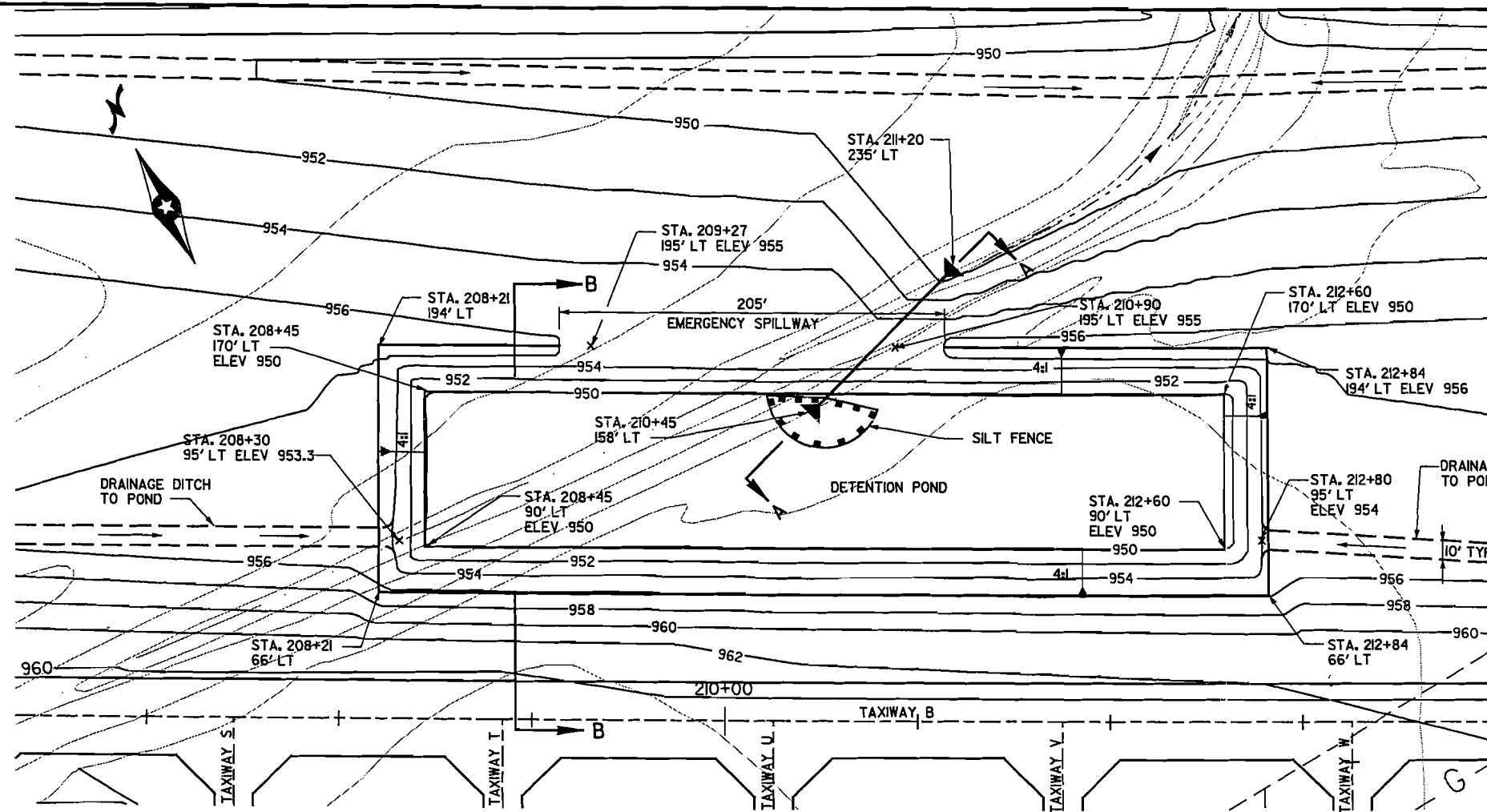
3. FEMA National Flood Hazard Layer (NFHL), accessed at <https://hazards.fema.gov/gis/nfhl/services>

PROJECT LOCATION

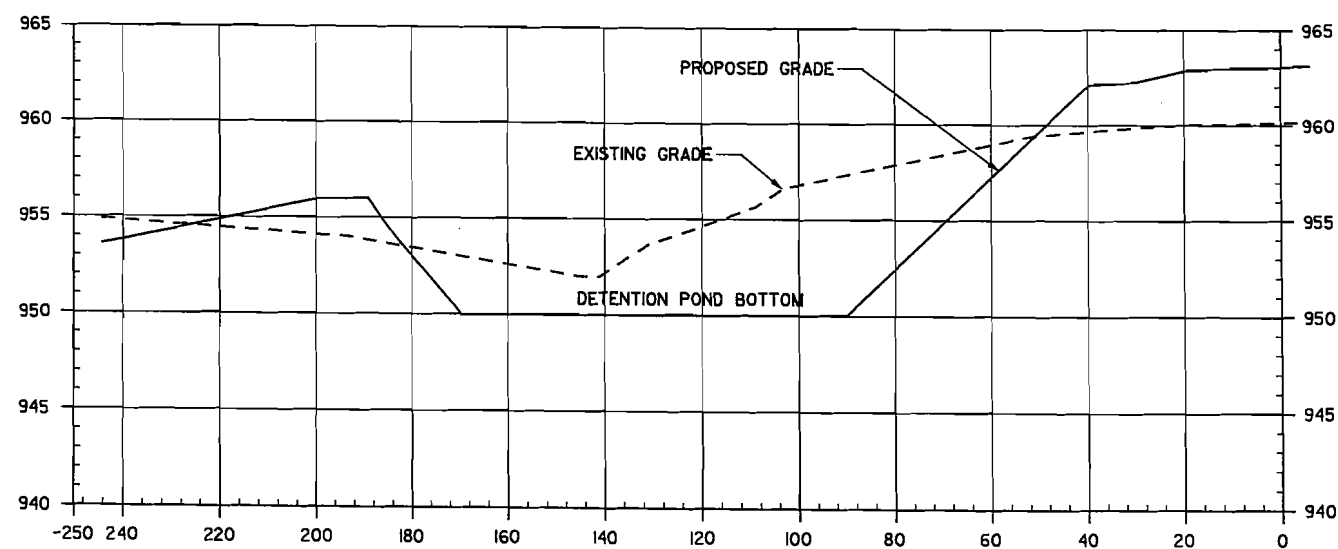
Sections 32 and 33, T114, R20W
Sections 3 and 4, T113, R20W
City of Lakeville
Dakota County, MN
LRR Subregion: M
USACE Regional Supplement: Midwest
Area = 164.4 acres
Field work conducted August 1 - 4 and September 8, 2022



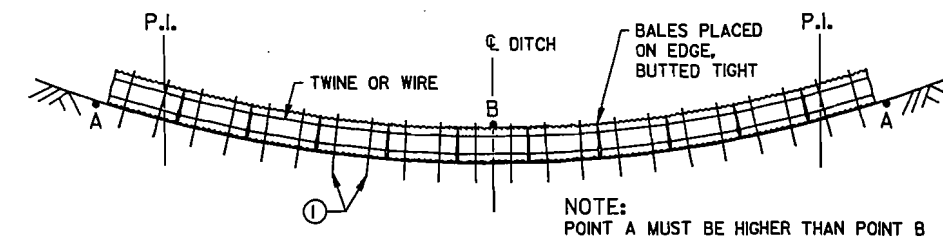
DESIGNED RAB				CHECKED PAS				I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.				HNTB ARCHITECTS ENGINEERS PLANNERS The HNTB Companies				METROPOLITAN AIRPORTS COMMISSION 6040 28th AVE. SOUTH ST. PAUL, MINNESOTA 55450-2799				AIRLAKE AIRPORT GRADING, DRAINAGE & EROSION CONTROL PLAN				SHEET 8 OF 53			
DRAWN SPG				APPROVED RAB				DATE 4/23/98				JOB NO. 29088				REG. NO. 23872											
NO.				REVISIONS				BY				APR. DATE				4-23-98											



DETENTION POND DETAIL
SCALE: 1"=40'

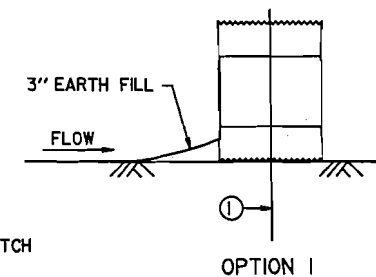


SECTION B-B

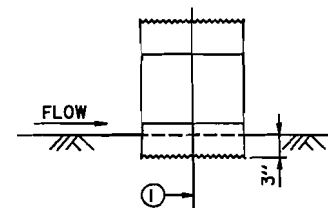


BALE DITCH SEDIMENT CHECK

NO SCALE



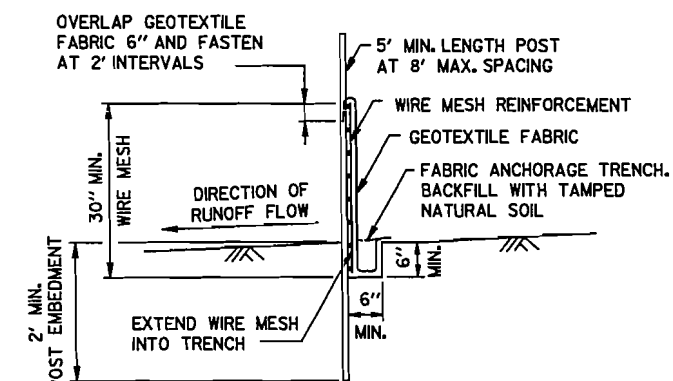
OPTION 1



OPTION 2

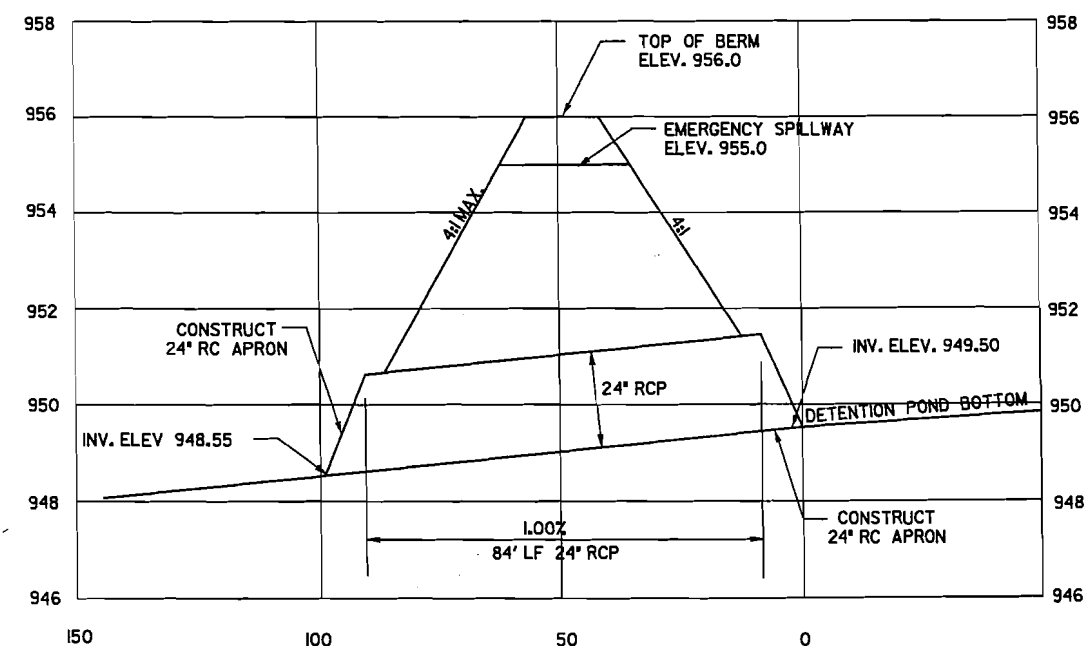
BALE CHECK DETAILS

NO SCALE

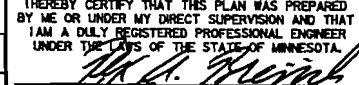


SILT FENCE, HEAVY DUTY DETAIL

NO SCALE



SECTION A-A
SKEWED CROSS SECTION VIEW OF
24" OUTLET FOR DETENTION POND

DESIGNED RAB	CHECKED PAS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. 
DRAWN SPG	APPROVED RAB	
DATE 4-23-98	JOB NO. 29088	
NO.	REVISIONS	DATE 4/23/98 REG. NO. 23072

HNTB ARCHITECTS ENGINEERS PLANNERS
The HNTB Companies



METROPOLITAN
AIRPORTS
COMMISSION

6040 28th AVE. SOUTH
ST. PAUL, MINNESOTA 55450-2799

AIRLAKE AIRPORT
DETENTION POND, EROSION
CONTROL AND DIKE DETAILS

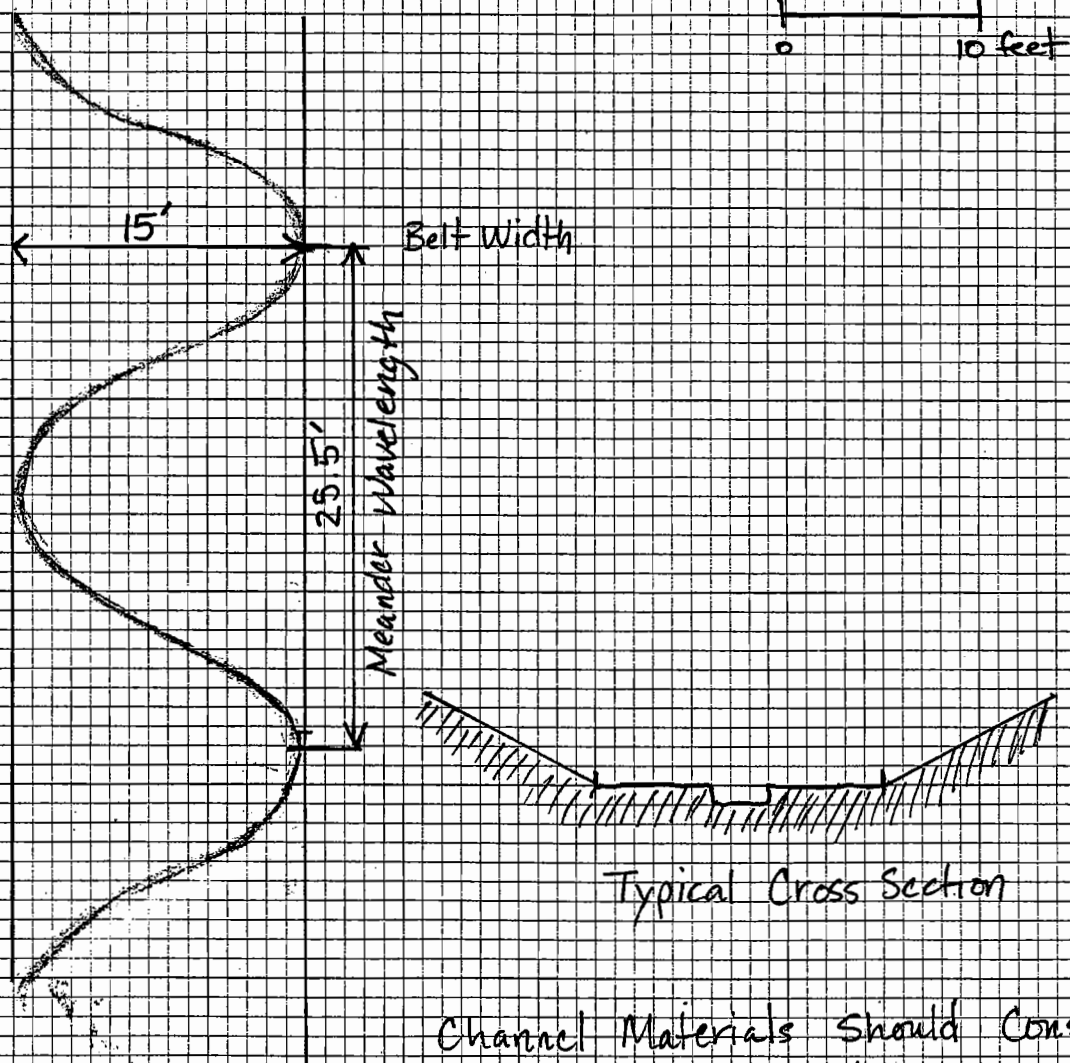
SHEET
9
OF
53

99-6034

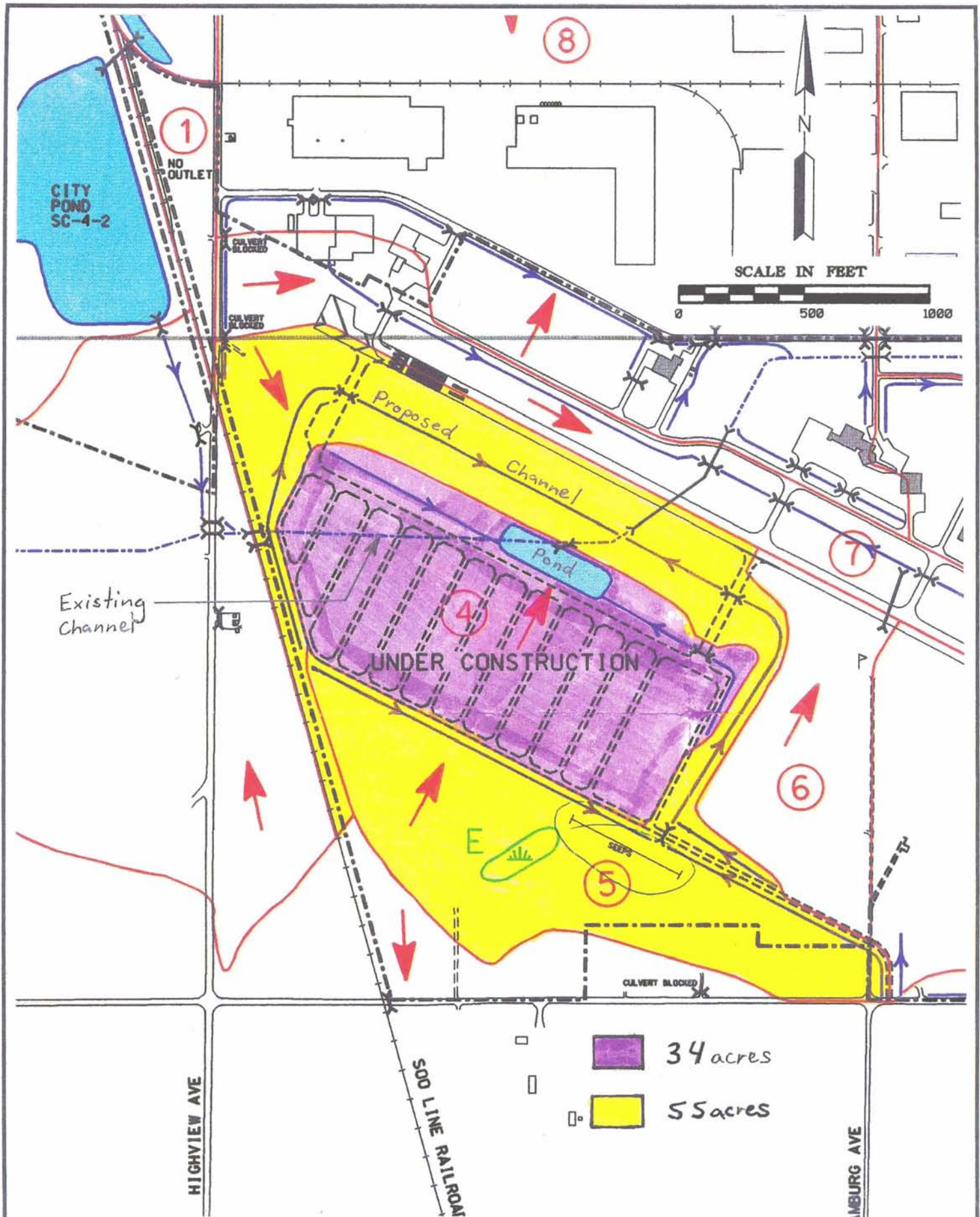
Design Specifications For Trout Stream Relocation at Airlake Airport:

Meander Wavelength = 24 - 27 feet
Belt Width = 15 feet
Radius of Curvature = 5.3 feet
Channel Width = 2 - 3 feet
Channel Depth = 0.8 - 1.0 feet

The channel was constructed per this drawing.



Channel Materials should consist of cohesive silt and clay as in existing channel



METROPOLITAN AIRPORTS COMMISSION

Proposed Drainage System

COPYRIGHT



Wenck

Wenck Associates, Inc. 1800 Pioneer Creek Ctr.
Environmental Engineers Maple Plain, MN 55359

JAN 1999

Figure 5

Appendix D. WETS Analysis and Climatic Normals

WETS Analysis Worksheet

Project Name: **Lakeville Environmental Assessment**
 Period Of Interest: May - July
 Station: **Farmington 3NW, MN**
 County: Dakota, MN
 Normals Period: 1971 - 2010
 Site Visit: **Aug 1 - 4, 2022**

Long-term rainfall records

	Month	30% chance <	Normal	30% chance >
1st month prior:	July	2.53	3.83	4.59
2nd month prior:	June	2.97	4.48	5.38
3rd month prior:	May	2.61	3.46	4.04

Sum = **11.77**

Sum =

Site Determination

Site Rainfall (in)	Condition (Dry/Normal*/Wet)	Condition** Value	Month Weight	Product
1.38	Dry	1	3	3
0.95	Dry	1	2	2
3.71	Normal	2	1	2
6.04			Sum***=	7

* Normal precipitation with 30% to 70% probability of occurrence

Determination: Wet
 X Dry
 Normal

**Condition value:

Dry = 1

Normal = 2

Wet = 3

***If sum is:

6 to 9 then period has been drier than normal

10 to 14 then period has been normal

15 to 18 then period has been wetter than normal

Precipitation data source:

<http://agacis.rcc-acis.org/>

Reference:

Donald E. Woodward, ed. 1997. *Hydrology Tools for Wetland Determination* , Chapter 19. Engineering Field Handbook. U.S. Department of Agriculture, Natural Resources Conservation Service, Fort Worth, TX.

WETS Analysis Worksheet

Project Name: **Lakeville Environmental Assessment**
 Period Of Interest: June - August
 Station: **Farmington 3NW, MN**
 County: Dakota, MN
 Normals Period: 1971 - 2010
 Site Visit: **8-Sep-22**

Long-term rainfall records

	Month	30% chance <	Normal	30% chance >
1st month prior:	August	3.4	4.57	5.36
2nd month prior:	July	2.53	3.83	4.59
3rd month prior:	June	2.97	4.48	5.38
Sum =		12.88		

Sum =

Site Determination

Site Rainfall (in)	Condition (Dry/Normal*/Wet)	Condition** Value	Month Weight	Product
4.94	Normal	2	3	6
1.38	Dry	1	2	2
0.95	Normal	2	1	2
7.27			Sum***=	10

* Normal precipitation with 30% to 70% probability of occurrence

Determination: _____ Wet
 _____ Dry
 X Normal

**Condition value:

***If sum is:

Dry = 1

6 to 9 then period has been drier than normal

Normal = 2

10 to 14 then period has been normal

Wet = 3

15 to 18 then period has been wetter than normal

Precipitation data source:

<http://agacis.rcc-acis.org/>

Reference:

Donald E. Woodward, ed. 1997. *Hydrology Tools for Wetland Determination* , Chapter 19. Engineering Field Handbook. U.S. Department of Agriculture, Natural Resources Conservation Service, Fort Worth, TX.

Minnesota State Climatology Office

State Climatology Office - DNR Division of Ecological and Water Resources

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Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:

county: **Dakota** township number: **113N**
township name: **Eureka** range number: **20W**
nearest community: **Lakeville** section number: **4**

Aerial photograph or site visit date:

Monday, August 1, 2022

Score using 1991-2020 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	first prior month: July 2022	second prior month: June 2022	third prior month: May 2022
estimated precipitation total for this location:	1.79R	1.26R	4.30R
there is a 30% chance this location will have less than:	3.02	4.09	2.86
there is a 30% chance this location will have more than:	5.38	5.47	5.15
type of month: dry normal wet	dry	dry	normal
monthly score	3 * 1 = 3	2 * 1 = 2	1 * 2 = 2
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	7 (Dry)		

Other Resources:

- [retrieve daily precipitation data](#)
- [view radar-based precipitation estimates](#)
- [view weekly precipitation maps](#)
- [Evaluating Antecedent Precipitation Conditions](#) (BWSR)

WETS Table

WETS Station: FARMINGTON 3NW, MN													
Requested years: 1971 - 2010													
Month	Avg Max Temp	Avg Min Temp	Avg Mean Temp	Avg Precip	30% chance precip less than	30% chance precip more than	Avg number days precip 0.10 or more	Avg Snowfall					
Jan	22.4	5.0	13.7	0.79	0.41	0.93	3	9.1					
Feb	28.2	10.8	19.5	0.69	0.37	0.81	2	7.2					
Mar	40.6	22.9	31.8	1.78	1.15	2.14	4	8.2					
Apr	58.1	36.2	47.1	2.54	1.42	3.10	6	2.9					
May	70.6	47.8	59.2	3.46	2.61	4.04	8	0.0					
Jun	79.2	57.3	68.2	4.48	2.97	5.38	8	0.0					
Jul	82.9	61.3	72.1	3.83	2.53	4.59	6	0.0					
Aug	80.1	58.9	69.5	4.57	3.40	5.36	7	0.0					
Sep	71.9	50.2	61.0	3.28	2.04	3.96	6	0.0					
Oct	58.9	38.4	48.6	2.31	1.32	2.81	5	0.1					
Nov	41.4	25.2	33.3	1.75	0.85	2.11	4	6.5					
Dec	26.4	10.4	18.4	0.95	0.50	1.15	2	9.2					
Annual:					27.67	34.14							
Average	55.0	35.4	45.2	-	-	-	-	-					
Total	-	-	-	30.44			62	43.2					
GROWING SEASON DATES													
Years with missing data:	24 deg = 3	28 deg = 3	32 deg = 3										
Years with no occurrence:	24 deg = 0	28 deg = 0	32 deg = 0										
Data years used:	24 deg = 37	28 deg = 37	32 deg = 37										
Probability	24 F or higher	28 F or higher	32 F or higher										
50 percent *	4/5 to 10/28: 206 days	4/18 to 10/13: 178 days	4/27 to 10/2: 158 days										
70 percent *	4/1 to 11/1: 214 days	4/13 to 10/18: 188 days	4/24 to 10/6: 165 days										
* Percent chance of the growing season occurring between the Beginning and Ending dates.													
STATS TABLE - total precipitation (inches)													
Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annl
1888				2.60	4.87	3.30	4.95	3.75	2.80		0.21	0.57	23.05
1889	0.93	0.95	0.91		2.31		1.80		0.82	0.01	0.72	3.11	11.56
1890		1.21	2.30	1.90	3.46	8.20	0.37	3.06	4.00	2.42	0.50	0.46	27.88
1891	1.03	2.00	1.60	1.80	2.00	4.13	2.28	2.11	0.81	1.50	1.10	4.73	25.09
1892	0.18	2.60	1.23	1.09	5.46	6.87	9.21	3.42	2.93	0.25	0.83	0.69	34.76
1893	M1.03	M1.16	M2.43	M4.22	2.14	1.66	2.42	2.90	2.16	1.68	M1.25	M3.25	26.30
1894	M1.22	M0.05	2.80	4.09	1.83	1.12	0.22	M0.62	1.88	M3.86	M0.95	1.47	20.11
1895	1.70	0.92	0.93	2.37	3.24	3.07	3.43	1.16	5.71	M0.27	1.34	0.40	24.54
1896	0.98	0.25	3.74	5.41	4.97	3.22	1.98	2.43	2.	3.	5.18	1.10	34.

									28	25		79
1897	1.77	1.35	3.29	2.15	0.85	6.87	4.29	3.44	1.20	2.65	0.80	0.25 28.91
1898	0.25	1.69	1.45	1.98	2.35	3.63	1.02	2.32	0.91	5.35	1.10	T 22.05
1899	0.90	1.30	3.20	2.04	1.81	6.16	1.38	4.73	1.33	3.46	0.64	1.13 28.08
1900	0.55	0.75	1.80	2.64	0.23	0.86	7.83	4.47	8.13	7.41	0.55	0.55 35.77
1901	0.60	0.40	1.58	1.44	1.67	5.08	2.32	1.29	5.16	3.34	0.61	0.60 24.09
1902	0.55	1.70	0.81	2.91	6.41	2.14	7.17	5.26	3.63	1.45	2.47	2.72 37.22
1903	0.35	0.35	1.95	4.03	6.39	1.10	3.09	5.35	7.85	3.92	0.40	0.70 35.48
1904	0.50	0.80	1.77	1.94	2.55	3.34	4.52	4.39	4.61	4.69	0.23	0.50 29.84
1905	0.90	0.75	1.54	0.76	5.46	5.40	3.54	4.61	3.03	3.03	2.52	0.10 31.64
1906	1.75	0.20	2.63	3.38	7.71	3.55	4.25	3.49	5.41	2.14	2.68	1.07 38.26
1907	1.47	0.90	1.00	1.24	1.75	4.54	3.19	7.54	4.57	1.27	1.22	0.95 29.64
1908	0.60	1.02	2.14	3.54	8.01	7.50	2.51	0.39	1.58	2.84	0.93	0.80 31.86
1909	1.46	1.80	0.80	2.37	3.57	4.26	1.56	3.54	6.09	0.97	M3.53	1.14 31.09
1910	0.85	0.15	0.04	0.55	1.54	0.43	2.65	2.03	1.66	1.67	0.50	0.28 12.35
1911	1.10	0.90	1.14	1.89	2.89	4.95	4.42	3.78	4.55	8.75	M1.12	1.91 37.40
1912	0.38	0.11	0.26	2.11	3.61	2.12	5.33	7.04	1.90	1.40	0.48	1.36 26.10
1913	0.20	0.42	2.12	1.03	3.48	4.90	6.21	1.85	6.29	2.29	0.74	T 29.53
1914	0.54	0.19	M1.22	3.79	1.79	6.00	2.03	3.66	1.53	1.02	0.10	0.12 21.99
1915	1.27	1.47	0.86	1.67	M3.21	4.99	4.27	3.46	2.26	1.90	2.34	0.34 28.04
1916	2.76	0.32	0.84	2.36	4.09	4.58	1.23	0.99	2.51	0.90	1.00	0.89 22.47
1917	2.20	0.32	1.42	1.81	3.62	2.77	2.59	2.27	1.43	1.67	0.05	0.39 20.54
1918	0.58	1.66	0.60	0.75	5.38	1.30	5.37	M6.79	2.12	M2.38	3.66	M1.24 31.83
1919	0.30	1.32	0.53	3.93	1.24	3.26	5.66	1.00			1.65	0.60 19.49
1920	1.40	M0.55	M3.00	2.55	1.68	5.25	2.47	0.75	0.75	2.90	1.63	2.10 25.03
1921	1.05	0.60	M1.55	1.75	3.95	2.34	2.98	M1.95	3.70	0.40	1.75	0.45 22.47
1922	1.10	1.10	0.75	2.55	3.38	2.65	1.55	M0.65			M0.40	0.20 14.33
1923	1.60	M0.60	1.70	1.10	2.28	5.50	0.85				M0.20	0.90 14.73
1924	0.70	1.50	2.35	2.80	M1.00	5.50	2.20	10.55	3.10			1.35 31.05
1925	0.60	0.80	0.20	0.70	1.80	6.79	3.50	T	4.34	1.15	0.80	0.85 21.53
1926	1.35	M0.70	1.50	1.05	0.75	2.70	2.28	M0.30	7.10	1.90	M1.32	1.70 22.65
1927	1.10	0.35	2.60	2.30	3.60	M0.39	1.30	0.40	M3.10			3.15 18.29
1928	1.15	M1.40	0.60	2.95	M2.25	2.21	5.60	4.13	1.15	2.25	MT	0.40 24.09
1929	M1.70	1.10	0.55	M2.67	M1.49	M0.00	3.46	2.15	M3.26	1.50		1.00 18.88
1930	1.70	0.80	0.40	0.90	4.12	2.98	2.77	0.25	3.	0.		0.20 18.

										85	95	92	
1931	T	0.75	1.75	1.68	2.50	3.02	0.57	3.08	2. 23	4. 49	M2. 80	0.25	23. 12
1932	2.65	1.75	1.70	1.85	2.65	3.06	2.00	M3.68	0. 55	0. 65	2.35	1.60	24. 49
1933	M1.80	1.20	1.90	0.90	8.25	0.64	4.73	1.50	3. 05	0. 60	M0. 44	0.35	25. 36
1934	0.89	0.24	0.65	3.35	0.22	2.31	2.54	2.03	4. 67	2. 05	4.05	1.39	24. 39
1935	1.80	0.19	0.62	2.24	3.64	5.06	3.45	4.05	0. 72	2. 45	0.99	1.19	26. 40
1936	0.60	1.82	2.33	1.06	2.47	1.59	1.11	2.54	1. 16	0. 10	0.63	1.74	17. 15
1937	1.49	1.14	1.17	1.51	5.66	2.45	0.35	4.02	2. 40	1. 56	0.50	0.32	22. 57
1938	0.43	0.87	1.91	3.99	9.28	5.87	5.13	3.25	7. 16	0. 80	2.04	0.75	41. 48
1939	1.39	M1.16	0.45	2.47	1.64	4.68	1.18	3.95	1. 65	1. 61	T	1.22	21. 40
1940	0.40	0.72	1.85	1.73	1.68	7.73	3.89	5.41	0. 10	2. 99	5.17	1.52	33. 19
1941	0.98	1.18	1.06	2.05	4.37	3.17	2.38	2.69	4. 79	5. 36	2.20	0.70	30. 93
1942	0.15	0.18	1.69	2.17	7.41	4.89	4.28	1.89	12. 68	0. 92	0.46	1.59	38. 31
1943	1.44	0.60	0.97	0.78	4.21	3.72	5.70	1.89	4. 23	1. 37	1.25	0.00	26. 16
1944	0.45	1.15	0.99	2.60	8.83	5.42	4.12	4.03	0. 75	0. 42	1.48	0.31	30. 55
1945	0.57	1.70	2.30	1.94	4.06	7.05	6.84	4.49	1. 94	0. 48	0.99	1.56	33. 92
1946	1.12	1.20	1.51	0.62	2.90	3.30	0.99	1.14	6. 00	3. 96	1.27	0.63	24. 64
1947	0.64	0.07	0.79	3.32	3.57	5.83	1.64	3.87	5. 29	1. 18	2.51	0.63	29. 34
1948	0.29	M1.11	1.33	1.59	0.87	2.28	1.36	4.55	0. 83	0. 98	2.18	1.02	18. 39
1949	1.88	0.22	4.83	2.85	1.54	3.40	2.48	M0.53	2. 36	1. 89	0.13	1.48	23. 59
1950	1.38	0.72	M3.00	2.56	3.02	2.16	3.25	2.08	1. 49	1. 06	0.56	1.54	22. 82
1951	0.72	2.24	3.49	2.61	3.29	8.19	5.15	3.67	5. 80	1. 80	M1. 61	1.04	39. 61
1952	0.68	1.05	2.51	1.07	M3.19	5.16	7.21	5.43	0. 28	T	0.92	0.42	27. 92
1953	0.77	1.15	1.37	3.03	2.22	M6.74	4.99	4.31	0. 37	T	1.55	1.96	28. 46
1954	0.18	0.40	2.45	2.81	4.16	5.40	3.29	4.55	5. 56	2. 66	0.62	0.68	32. 76
1955	0.63	1.81	0.43	1.22	0.96	2.97	8.37	5.01	1. 20	2. 40	0.87	0.96	26. 83
1956	0.86	0.21	2.54	0.99	3.30	9.10	4.15	6.11	0. 75	2. 25	2.00	0.19	32. 45
1957	0.18	0.59	1.53	1.02	4.80	6.72	5.76	9.52	1. 56	1. 95	2.21	0.23	36. 07
1958	0.13	0.12	0.41	M2.83	1.44	4.02	4.98	2.35	1. 91	1. 62	0.84	0.16	20. 81
1959	0.41	0.87	0.64	1.11	4.40	6.69	3.37	11.76	2. 82	2. 90	0.68	3.18	38. 83
1960	0.56	0.25	0.76	2.56	5.82	3.81	1.16	3.40	3. 67	0. 60	0.98	0.61	24. 18
1961	0.19	1.14	2.93	1.90	5.52	0.91	3.97	2.22	2. 89	3. 40	1.05	1.56	27. 68
1962	0.64	2.16	1.45	2.08	5.73	2.11	5.34	3.59	1. 89	1. 41	0.32	0.18	26. 90
1963	0.59	0.49	1.19	1.89	3.19	2.67	2.77	1.48	3. 27	1. 35	0.45	0.62	19. 96
1964	0.51	T	1.44	3.46	4.24	1.38	1.79	6.30	5.	0.	1.01	1.21	27.

									62	74		70
1965	0.49	2.01	4.46	3.44	3.78	5.21	7.08	2.63	7.00	0.25	2.06	1.70 40.11
1966	0.69	1.60	2.83	1.05	1.77	3.32	3.64	3.67	3.00	4.30	0.70	1.51 28.08
1967	3.06	1.43	0.85	3.71	2.66	10.00	2.28	1.83	0.50	2.21	0.03	0.16 28.72
1968	0.65	0.15	0.97	3.35	3.97	7.79	5.04	0.75	5.29	5.91	0.67	2.96 37.50
1969	2.24	0.29	1.69	1.75	1.24	1.74	3.37	1.23	0.35	3.45	1.03	1.03 19.41
1970	0.46	0.15	2.04	2.64	6.67	1.51	2.75	1.29	4.15	5.42	4.73	0.74 32.55
1971	1.40	2.82	1.00	0.68	3.38	5.87	4.90	2.33	2.11	3.82	2.44	0.76 31.51
1972	0.95	0.49	0.90	1.96	2.69	2.38	6.19	3.05	3.25	2.18	1.40	1.22 26.66
1973	1.08	1.04	2.04	2.50	3.57	1.55	3.85	5.19	3.20	0.95	2.35	1.47 28.79
1974	0.14	1.11	1.60	2.96	3.15	5.00	1.71	3.74	0.67	1.73	0.81	0.47 23.09
1975	2.62	0.73	1.47	5.49	4.72	7.29	2.18	5.84	1.50	0.49	4.53	1.07 37.93
1976	0.38	0.44	3.15	1.31	0.74	2.67	2.03	1.78	2.02	0.63	0.10	0.48 15.73
1977	0.29	1.27	4.15	3.48	4.01	4.05	2.97	4.16	5.20	3.05	1.59	1.59 35.81
1978	0.36	0.14	0.33	4.60	4.39	4.84	5.00	5.72	5.15	0.35	1.92	1.10 33.90
1979	0.85	0.68	3.62	1.22	3.56	5.30	2.95	6.56	2.44	2.81	1.81	0.63 32.43
1980	0.76	0.47	0.80	1.75	2.81	4.76	2.17	6.92	5.26	1.45	0.20	0.39 27.74
1981	0.09	2.37	0.47	4.16	2.73	4.66	3.80	6.88	1.12	1.91	1.50	1.09 30.78
1982	2.20	M0.36	2.10	1.81	5.25	1.78	1.83	4.96	3.13	4.49	3.34	M4.92 36.17
1983	0.45	1.24	3.20	4.38	5.97	4.26	3.31	3.85	3.72	2.47	4.89	1.55 39.29
1984	0.37	1.77	1.37	3.59	2.60	5.33	5.10	3.50	2.84	5.40	1.02	2.84 35.73
1985	0.69	0.20	3.80	1.63	1.91	2.85	1.76	4.84	4.62	3.75	1.48	0.88 28.41
1986	0.44	0.54	2.57	6.22	3.52	5.17	5.12	3.32	8.12	2.03	0.43	0.20 37.68
1987	0.37	T	0.90	0.29	2.73	1.48	8.50	4.88	1.09	0.78	2.21	1.11 24.34
1988	1.09	0.20	1.33	1.43	4.13	0.30	1.63	3.86	3.15	0.74	3.30	0.51 21.67
1989	0.52	0.46	1.80	2.70	4.04	3.36	3.95	3.46	1.66	0.50	1.51	0.08 24.04
1990	0.11	0.56	3.39	3.36	4.02	8.56	4.72	1.47	1.58	1.40	0.40	0.82 30.39
1991	0.15	0.75	2.95	2.83	6.23	1.48	3.30	3.23	5.95	1.17	4.33	0.84 33.21
1992	0.99	0.65	1.66	2.23	1.20	6.05	6.37	4.41	7.27	2.59	2.48	1.06 36.96
1993	1.22	0.40	1.71	2.32	4.95	7.19	5.33	5.69	2.64	0.70	1.54	0.56 34.25
1994	0.98	0.66	0.34	4.44	2.83	6.60	3.79	4.01	6.46	4.71	1.48	0.50 36.80
1995	0.51	0.18	2.56	2.03	3.60	3.74	3.47	4.22	1.59	4.06	1.03	1.24 28.23
1996	2.44	0.08	1.48	0.63	2.71	4.46	1.23	4.36	1.46	4.98	5.26	1.35 30.44
1997	1.30	0.15	1.11	1.41	2.21	4.89	11.57	5.98	3.06	2.05	0.87	0.19 34.79
1998	1.85	0.72	4.15	2.44	5.02	8.85	3.06	6.56	1.	2.	1.58	0.42 39.

									60	92			17
1999	1.70	0.44	1.36	4.69	5.74	4.86	6.61	4.24	1.56	1.01	1.54	0.48	34.23
2000	1.18	1.38	1.04	1.08	3.81	4.77	5.55	4.27	0.74	1.24	3.23	1.32	29.61
2001	0.86	1.36	0.87	4.82	3.79	3.97	1.31	2.31	2.44	1.21	2.31	0.51	25.76
2002	0.39	0.56	1.53	3.87	2.00	9.46	5.08	6.85	6.13	4.68	0.16	0.40	41.11
2003	0.34	0.51	1.44	1.88	4.92	1.89	2.63	1.02	M0.51	M0.17			15.31
2004				M0.75	M3.25	M1.49	M1.51		M3.92	2.31	0.99	M0.28	14.50
2005	M0.10		M0.00	M0.11	3.37	M5.43	2.42	M3.49	5.72	M3.15	M0.81	MT	24.60
2006	M0.30	MT		M1.78	1.96	M1.59	2.49	8.00	2.36	0.51	M0.86		19.85
2007	MT	MT	M2.30	0.33	M2.97	2.61	0.83	M8.24	3.32	3.50	T	M0.60	24.70
2008	MT	M0.00	MT	M3.75	2.98	2.90	M2.36	2.18	1.74	2.05	M0.66	M0.75	19.37
2009	MT	MT	1.43	M1.95	M1.29	3.35	M1.82	M7.09	M2.05	M3.90	M0.16	MT	23.04
2010	M0.55	M0.00	M0.00	M1.10	M1.71	M6.46	M6.51	M5.89	M6.70	M0.00			28.92
2011													
2012													
2013													
2014													
2015													
2016													
2017													
2018													
2019													
2020													
2021			M1.03	M0.00	MT	2.03	1.10	5.78	M2.64	2.12	0.87	1.74	17.31
2022	0.38	0.50	2.91	M4.65	3.71	M0.95	M1.38	4.94	M0.00				19.42

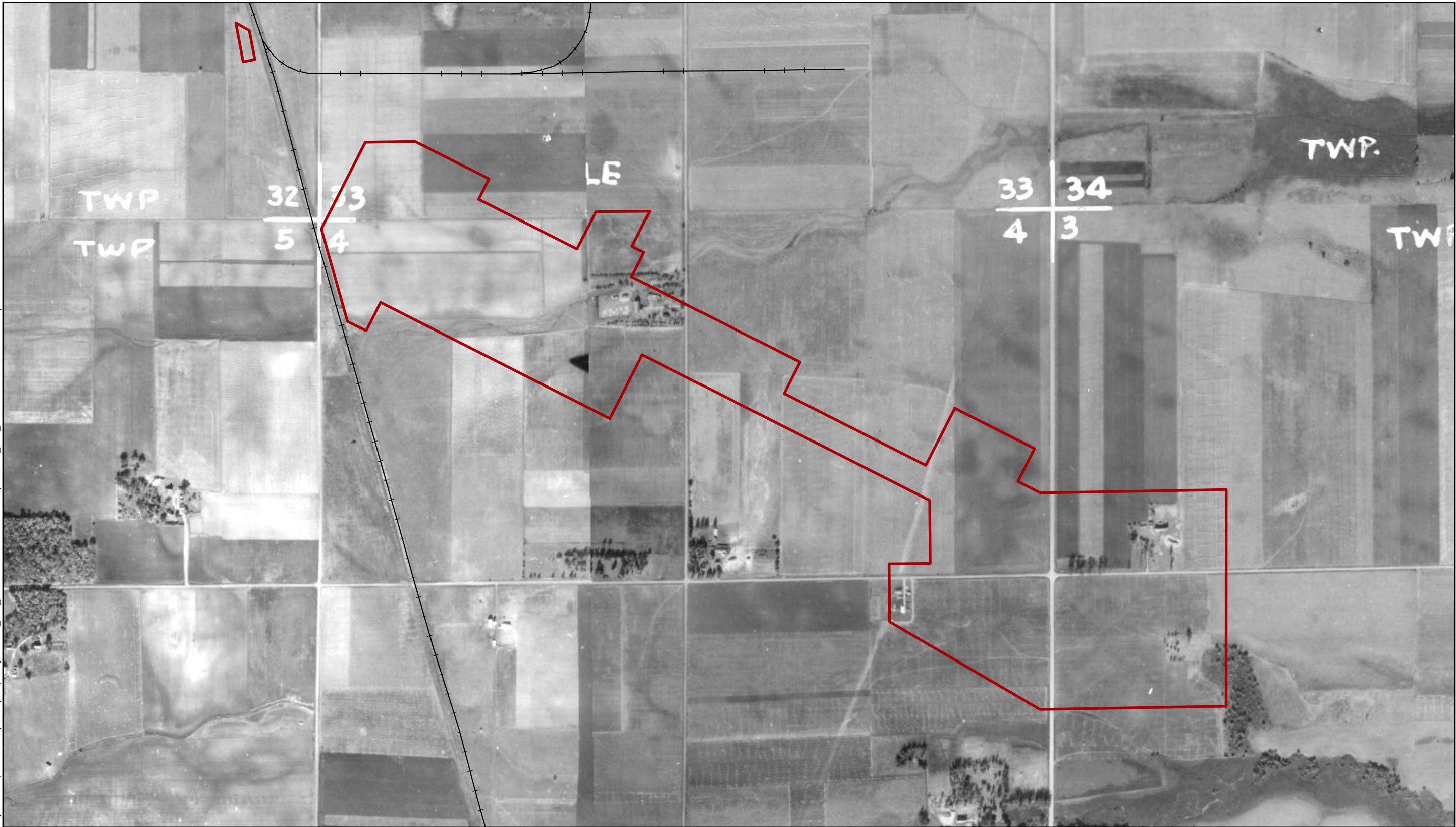
Notes: Data missing in any month have an "M" flag. A "T" indicates a trace of precipitation.

Data missing for all days in a month or year is blank.

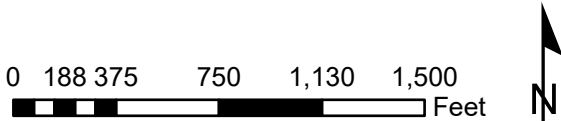
Creation date: 2022-09-07

Appendix E. Historic Aerial Photo Review and Hydrological Analysis

X:\2838700\220268.01\TECH\GIS\PRO\Lakeville_LVN_EnvironmentalAssessment\Lakeville_LVN_EnvironmentalAssessment.aprx



HISTORIC AERIAL IMAGE REVIEW
AIRLAKE AIRPORT



- Legend**
- +— Railroad
 - ▭ ProjectAOI

IMAGE INFORMATION

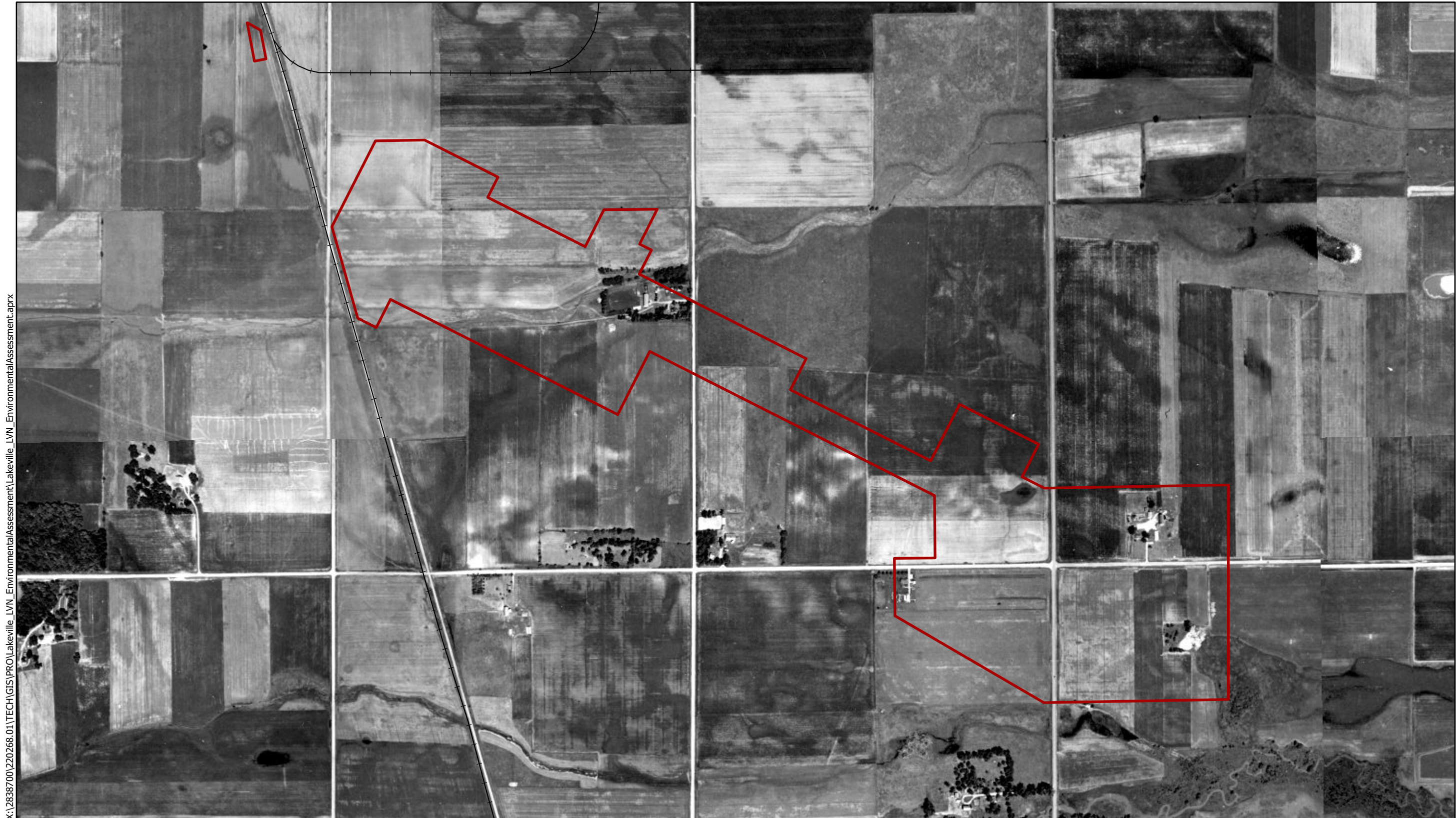
IMAGE DATE: 1937
SOURCE: Dakota County

Image from Dakota County Air Photo Time Machine
accessed at <https://gisimg.co.dakota.mn.us/arcgis/services/AerialPhotography/>

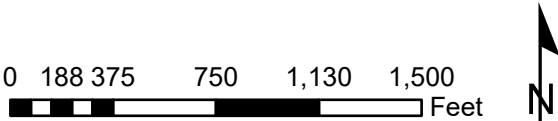
PROJECT LOCATION

Sections 32 and 33, T114, R20W
Sections 3 and 4, T113, R20W
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LRR Subregion: M
USACE Regional Supplement: Midwest
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HISTORIC AERIAL IMAGE REVIEW
AIRLAKE AIRPORT



- Legend**
- +— Railroad
 - ▭ ProjectAOI

IMAGE INFORMATION

IMAGE DATE: 1951
SOURCE: Dakota County

Image from Dakota County Air Photo Time Machine
accessed at <https://gisimg.co.dakota.mn.us/arcgis/services/AerialPhotography/>

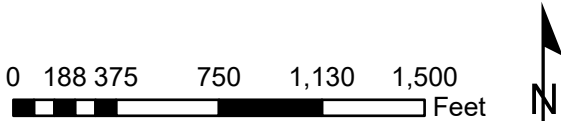
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HISTORIC AERIAL IMAGE REVIEW
AIRLAKE AIRPORT



- Legend**
- +— Railroad
 - ▭ ProjectAOI

IMAGE INFORMATION

IMAGE DATE: 1964
SOURCE: Dakota County

Image from Dakota County Air Photo Time Machine
accessed at <https://gisimg.co.dakota.mn.us/arcgis/services/AerialPhotography/>

PROJECT LOCATION

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HISTORIC AERIAL IMAGE REVIEW

AIRLAKE AIRPORT



- Legend**
- Railroad
 - ProjectAOI

IMAGE INFORMATION

IMAGE DATE: 1970
SOURCE: Dakota County

Image from Dakota County Air Photo Time Machine
accessed at <https://gisimg.co.dakota.mn.us/arcgis/services/AerialPhotography/>

PROJECT LOCATION

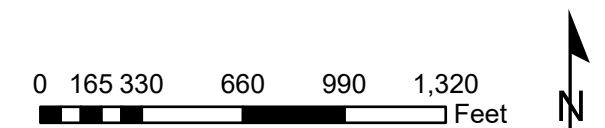
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Airlake Airport Aerial Photo Review					
Location:	44.62704N, 93.22766W				
County:	Dakota				
PLSS:	T113, R20W, Section 4				
	Dakota-Eureka-Lakeville				
			Area of Investigation		
Year	Month (Source)	Precipitation	Area A	Area B	
2021	4/1/2021 (Dakota County)	Normal (13)	NC	NV	
2021	6/18/2021 (FSA-NRCS)	Normal (11)	NC	NV	
2020	4/5/2020 (7 County)	Wet (15)	NC	CS	
2019	7/27/2019 (FSA-NRCS)	Normal (12)	NC	NV	
2019	4/23/2019 (Dakota County)	Wet (17)	NC	NV	
2017	10/16/2017 (FSA-NRCS)	Normal(14)	NC	NSS	
2016	4/13/2016 (7 County)	Normal(13)	NC	NSS	
2015	9/27/2015 (FSA-NRCS)	Normal(14)	NC	NSS	
2013	7/12/2013 (FSA-NRCS)	Wet(15)	NC	NSS	
2010	4/15/2010 (7 County)	Normal(11)	NC	NSS	
2010	7/2/2010 (FSA-NRCS)	Normal(14)	NC	NV	
2009	06/13/2009 (FSA-NRCS)	Dry(7)	NC	NV	
2008	07/30/2008 (FSA-NAIP)	Dry(7)	NC	CS	
2006	7/28/2006 (FSA-NRCS)	Normal(10)	NC	CS	
2004	6/30/2004 (FSA-NRCS)	Normal(14)	NC	NV	
2003	7/18/2003 (FSA-NRCS)	Dry(9)	NC	NV	
1991	April 1991 (USGS)	Normal(14)	NC	NSS	
Precipitation classification per Minnesota State Climatology Office website (July 1st date)					
CS = Crop Stress	NV = Normal Vegetative Cover		= Normal Precipitation		
DO = Drowned Out	NSS = No Soil Wetness				
NC = Not Cropped	AP = Altered Pattern				
SW = Standing Water	SS = Soil Wetness Signature				
WS = Wetland Signature					
			Area A	Area B	
	Hydric Soils		Non-hydric	Non-hydric	
			Waukegan silt loam, 0 to 1 percent slopes (411A)	Waukegan silt loam, 1 to 6 percent slopes (411B)	
	Soil Type				
	Percentage of Hydric Inclusions		0	0	
	NWI (Y/N)		N	N	
	Total Number of Years		17	17	
	Total Number of Years with Wetland		17	3	
	Frequency of Wetland Signature		100%	18%	
	Total Number of Years with Normal		11	11	
	Total Number of Years with Wet. Signatures in Normal Years		11	1	
	Frequency of Wet. Sig. Occurrence in Normal Determination (Wetland/Field)		100%	9%	
			Wetland (W)	Field Verify (FV)	
Decision Matrix for Offsite Wetland Determinations					
Hydric Soils	Mapped on NWI	Slides	Determination		
Yes or No	No	≤30%	Non-Wetland or PC (NW)		
Yes or No	No	30-50%	Field Verify (FV)		
Yes or No	No	≥50%	Wetland (W)		
Yes or No	Yes	≤30%	Field Verify (FV)		
Yes or No	Yes	30-50%	Wetland (W)		
Yes or No	Yes	≥50%	Wetland (W)		

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HISTORIC AERIAL IMAGE REVIEW
AIRLAKE AIRPORT



- Legend**
-  Investigation Area
 -  Project AOI

IMAGE INFORMATION AND PRECIPITATION

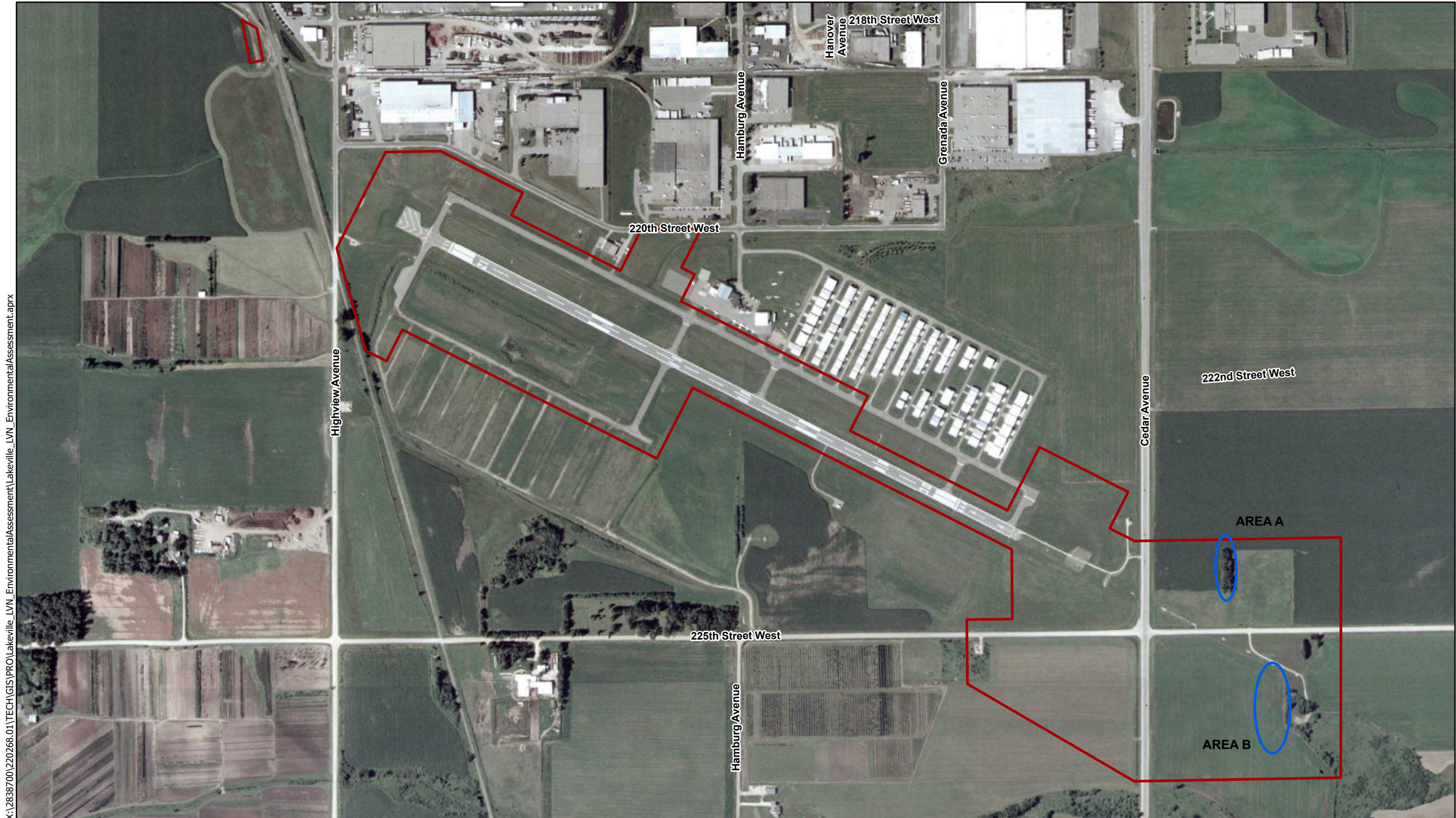
IMAGE DATE: 4/15/1991
SOURCE: USGS
PRECIPITATION: Normal(14)

Image from MnGeo WMS Image Service accessed at
<https://imageserver.gisdata.mn.gov/cgi-bin/wms?>

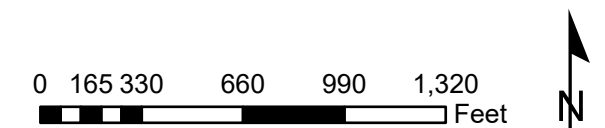
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HISTORIC AERIAL IMAGE REVIEW
AIRLAKE AIRPORT



- Legend**
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 - Project AOI

IMAGE INFORMATION AND PRECIPITATION

IMAGE DATE: 7/18/2003
SOURCE: FSA-NAIP
PRECIPITATION: Dry(9)

Image from MnGeo WMS Image Service accessed at
<https://imageserver.gisdata.mn.gov/cgi-bin/wms?>

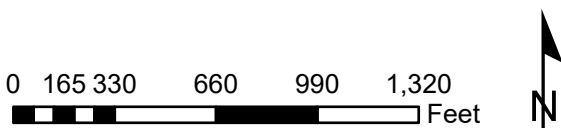
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HISTORIC AERIAL IMAGE REVIEW
AIRLAKE AIRPORT



- Legend**
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 -  Project AOI

IMAGE INFORMATION AND PRECIPITATION

IMAGE DATE: 6/30/2004
SOURCE: FSA-NAIP
PRECIPITATION: Normal(14)

Image from USDA Geospatial Data Gateway accessed at https://gdg.sc.egov.usda.gov/GDGHome_DirectDownload.aspx

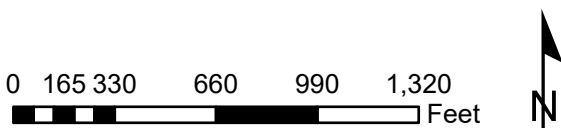
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AIRLAKE AIRPORT



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IMAGE INFORMATION AND PRECIPITATION

IMAGE DATE: 7/28/2006
SOURCE: FSA-NAIP
PRECIPITATION: Normal(10)

Image from USDA Geospatial Data Gateway accessed at https://gdg.sc.egov.usda.gov/GDGHome_DirectDownload.aspx

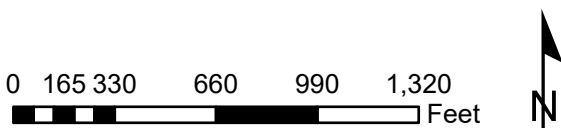
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HISTORIC AERIAL IMAGE REVIEW
AIRLAKE AIRPORT



- Legend**
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 - Project AOI

IMAGE INFORMATION AND PRECIPITATION

IMAGE DATE: 7/30/2008
SOURCE: FSA-NAIP
PRECIPITATION: Dry(7)

Image from MnGeo WMS Image Service accessed at <https://imageserver.gisdata.mn.gov/cgi-bin/wms?>

PROJECT LOCATION

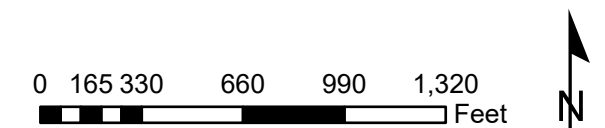
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HISTORIC AERIAL IMAGE REVIEW

AIRLAKE AIRPORT



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- Investigation Area
 - Project AOI

IMAGE INFORMATION AND PRECIPITATION

IMAGE DATE: 6/13/2009
SOURCE: FSA-NAIP
PRECIPITATION: Dry(7)

Image from MnGeo WMS Image Service accessed at
<https://imageserver.gisdata.mn.gov/cgi-bin/wms?>

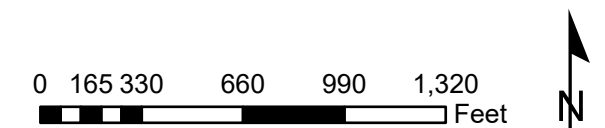
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AIRLAKE AIRPORT



- Legend**
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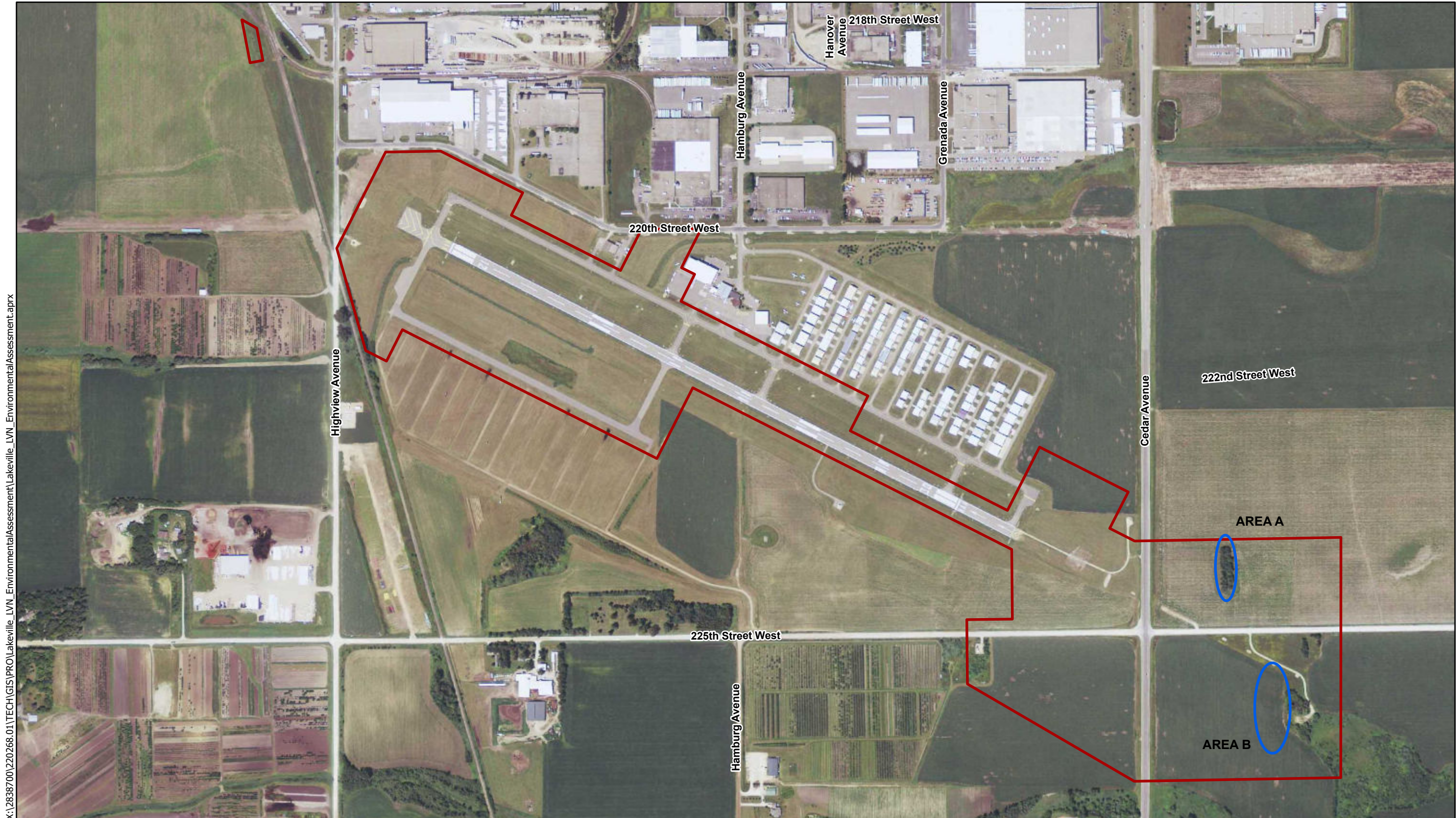
IMAGE DATE: 04/15/2010
SOURCE: 7 County
PRECIPITATION: Normal(11)

Image from MnGeo WMS Image Service accessed at
<https://imageserver.gisdata.mn.gov/cgi-bin/wms?>

PROJECT LOCATION

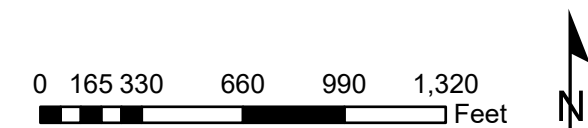
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AIRLAKE AIRPORT



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IMAGE INFORMATION AND PRECIPITATION

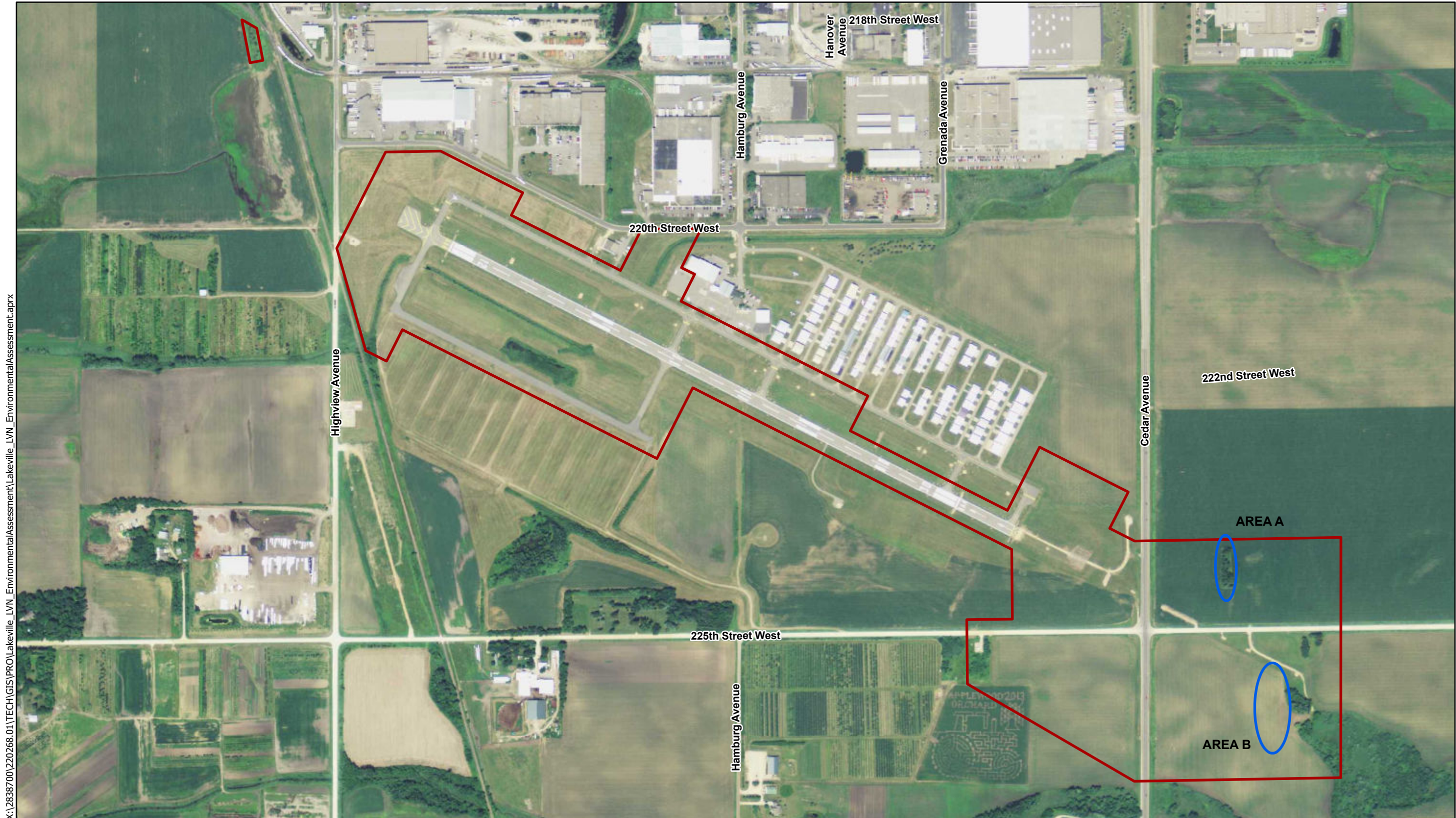
IMAGE DATE: 7/2/2010
SOURCE: FSA-NAIP
PRECIPITATION: Normal(14)

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<https://imageserver.gisdata.mn.gov/cgi-bin/wms?>

PROJECT LOCATION

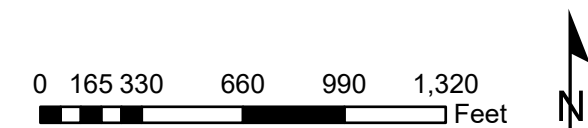
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HISTORIC AERIAL IMAGE REVIEW

AIRLAKE AIRPORT



- Legend**
- Investigation Area
 - Project AOI

IMAGE INFORMATION AND PRECIPITATION

IMAGE DATE: 7/12/2013
SOURCE: FSA-NAIP
PRECIPITATION: Wet(15)

Image from MnGeo WMS Image Service accessed at
<https://imageserver.gisdata.mn.gov/cgi-bin/wms?>

PROJECT LOCATION

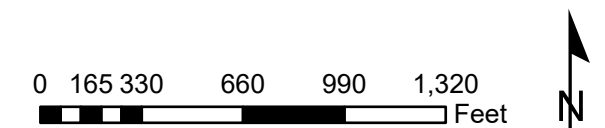
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HISTORIC AERIAL IMAGE REVIEW

AIRLAKE AIRPORT



- Legend**
- Investigation Area
 - Project AOI

IMAGE INFORMATION AND PRECIPITATION

IMAGE DATE: 9/27/2015
SOURCE: FSA-NAIP
PRECIPITATION: Normal (14)

Image from MnGeo WMS Image Service accessed at
<https://imageserver.gisdata.mn.gov/cgi-bin/wms?>

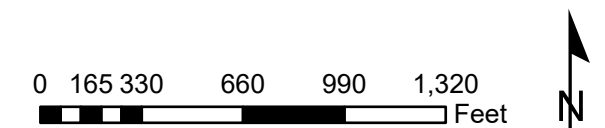
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HISTORIC AERIAL IMAGE REVIEW
AIRLAKE AIRPORT



- Legend**
- Investigation Area
 - Project AOI

IMAGE INFORMATION AND PRECIPITATION

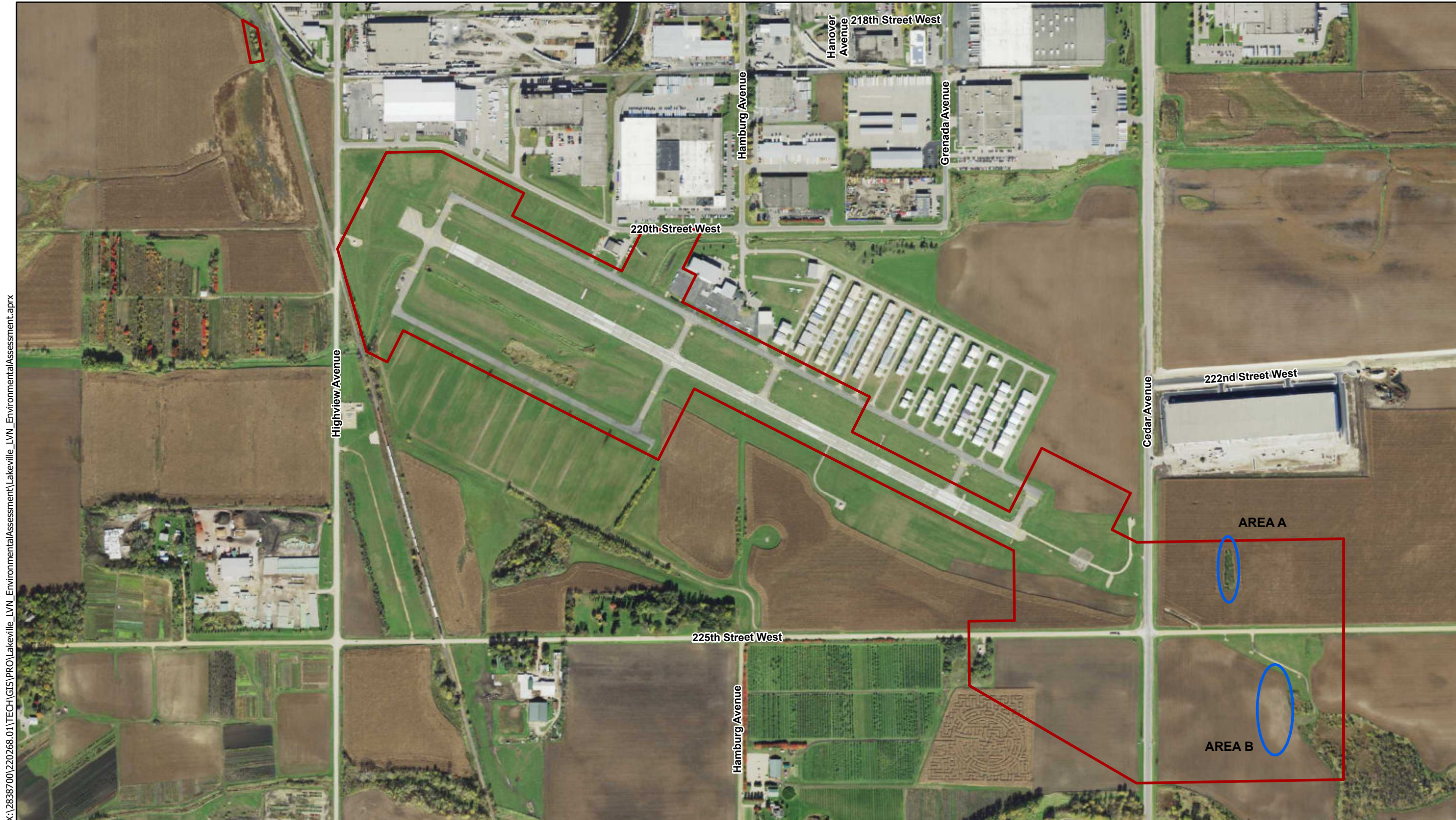
IMAGE DATE: 04/13/2016
SOURCE: 7 County
PRECIPITATION: Normal(13)

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<https://imageserver.gisdata.mn.gov/cgi-bin/wms?>

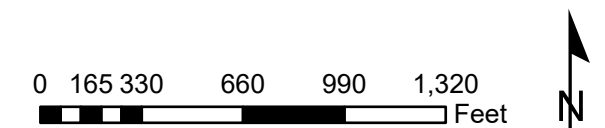
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HISTORIC AERIAL IMAGE REVIEW
AIRLAKE AIRPORT



- Legend**
-  Investigation Area
 -  Project AOI

IMAGE INFORMATION AND PRECIPITATION

IMAGE DATE: 10/16/2017
SOURCE: FSA-NAIP
PRECIPITATION: Normal (14)

Image from MnGeo WMS Image Service accessed at
<https://imageserver.gisdata.mn.gov/cgi-bin/wms?>

PROJECT LOCATION

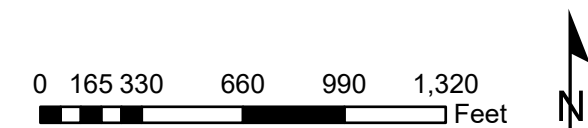
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HISTORIC AERIAL IMAGE REVIEW

AIRLAKE AIRPORT



- Legend**
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 - Project AOI

IMAGE INFORMATION AND PRECIPITATION

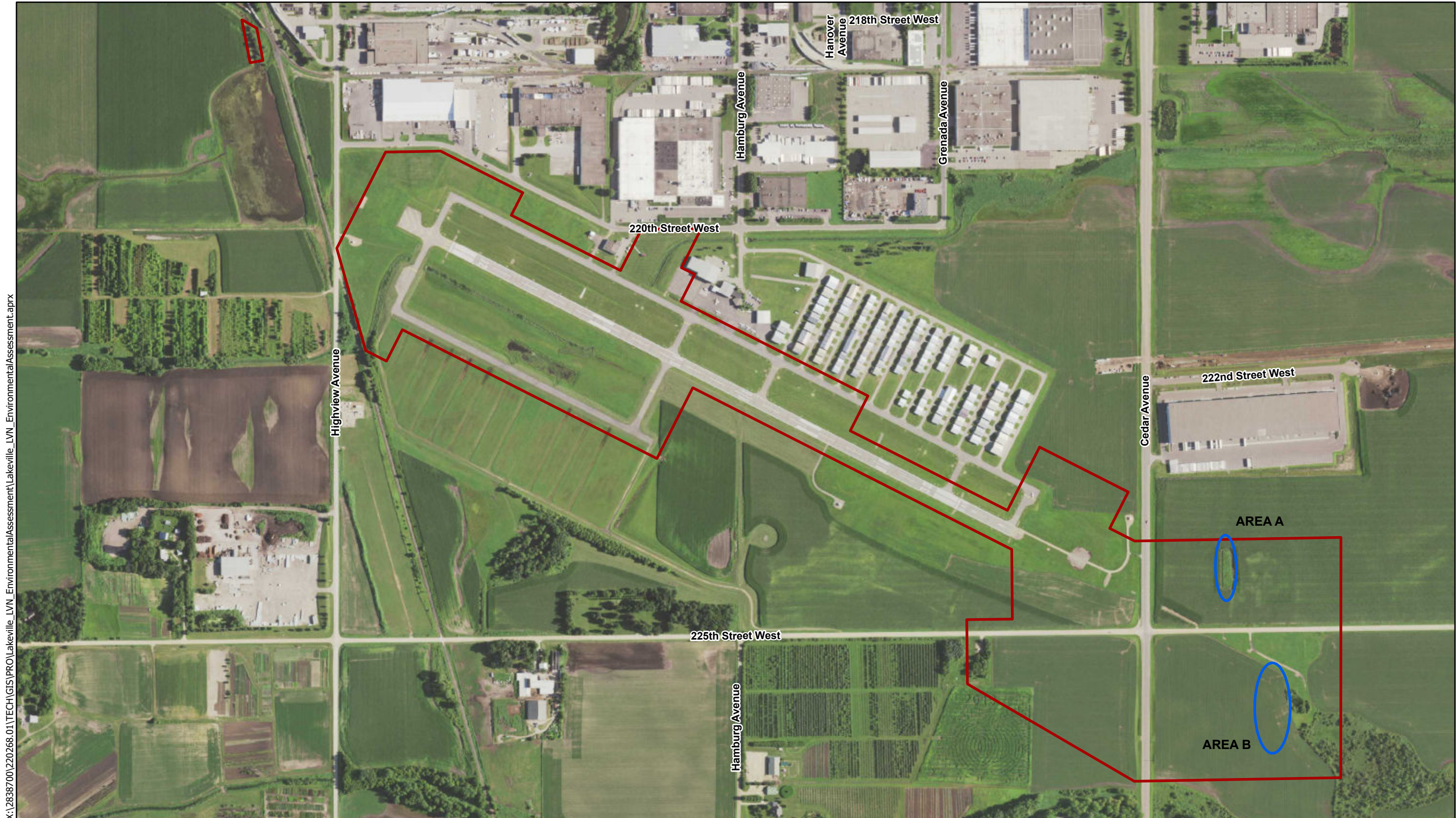
IMAGE DATE: 04/23/2019
SOURCE: Dakota County
PRECIPITATION: Wet(17)

Image from MnGeo WMS Image Service accessed at
<https://imageserver.gisdata.mn.gov/cgi-bin/wms?>

PROJECT LOCATION

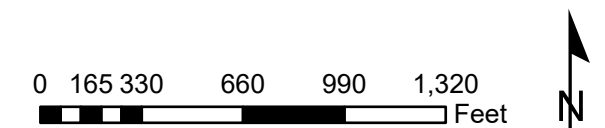
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HISTORIC AERIAL IMAGE REVIEW

AIRLAKE AIRPORT



- Legend**
- Investigation Area
 - Project AOI

IMAGE INFORMATION AND PRECIPITATION

IMAGE DATE: 7/27/2019
SOURCE: FSA-NAIP
PRECIPITATION: Normal (12)

Image from MnGeo WMS Image Service accessed at
<https://imageserver.gisdata.mn.gov/cgi-bin/wms?>

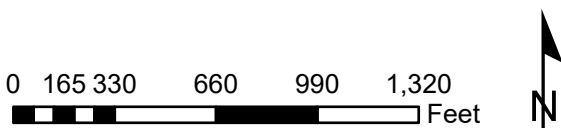
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AIRLAKE AIRPORT



- Legend**
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IMAGE INFORMATION AND PRECIPITATION

IMAGE DATE: 04/5/2020
SOURCE: 7 County
PRECIPITATION: Wet(15)

Image from MnGeo WMS Image Service accessed at
<https://imageserver.gisdata.mn.gov/cgi-bin/wms?>

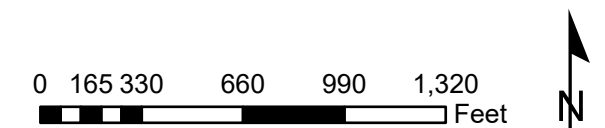
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IMAGE INFORMATION AND PRECIPITATION

IMAGE DATE: 04/1/2021
SOURCE: Dakota County
PRECIPITATION: Normal(13)

Image from MnGeo WMS Image Service accessed at <https://imageserver.gisdata.mn.gov/cgi-bin/wms?>

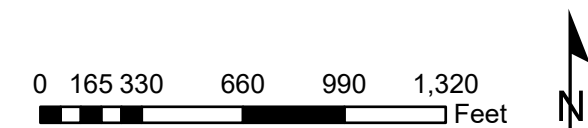
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HISTORIC AERIAL IMAGE REVIEW
AIRLAKE AIRPORT



- Legend**
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 - Project AOI
 - Railroad

IMAGE INFORMATION AND PRECIPITATION

IMAGE DATE: 6/18/2021
SOURCE: FSA-NAIP
PRECIPITATION: Normal (11)

Image from MnGeo WMS Image Service accessed at
<https://imageserver.gisdata.mn.gov/cgi-bin/wms?>

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Minnesota State Climatology Office

State Climatology Office - DNR Division of Ecological and Water Resources

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Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:

county: **Dakota** township number: **113N**
township name: **Eureka** range number: **20W**
nearest community: **Lakeville** section number: **4**

Aerial photograph or site visit date:

Monday, April 15, 1991

Score using 1991-2020 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	first prior month: March 1991	second prior month: February 1991	third prior month: January 1991
estimated precipitation total for this location:	2.81	0.83	0.20
there is a 30% chance this location will have less than:	1.32	0.57	0.62
there is a 30% chance this location will have more than:	2.04	1.08	1.10
type of month: dry normal wet	wet	normal	dry
monthly score	3 * 3 = 9	2 * 2 = 4	1 * 1 = 1
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	14 (Normal)		

Other Resources:

- [retrieve daily precipitation data](#)
- [view radar-based precipitation estimates](#)
- [view weekly precipitation maps](#)
- [Evaluating Antecedent Precipitation Conditions](#) (BWSR)

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Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:

county: **Dakota** township number: **113N**
township name: **Eureka** range number: **20W**
nearest community: **Lakeville** section number: **4**

Aerial photograph or site visit date:

Friday, July 18, 2003

Score using 1991-2020 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	first prior month: June 2003	second prior month: May 2003	third prior month: April 2003
estimated precipitation total for this location:	2.32	5.12	2.58
there is a 30% chance this location will have less than:	4.09	2.87	2.00
there is a 30% chance this location will have more than:	5.47	5.14	3.42
type of month: dry normal wet	dry	normal	normal
monthly score	3 * 1 = 3	2 * 2 = 4	1 * 2 = 2
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	9 (Dry)		

Other Resources:

- [retrieve daily precipitation data](#)
- [view radar-based precipitation estimates](#)
- [view weekly precipitation maps](#)
- [Evaluating Antecedent Precipitation Conditions](#) (BWSR)

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Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:

county: **Dakota** township number: **113N**
township name: **Eureka** range number: **20W**
nearest community: **Lakeville** section number: **4**

Aerial photograph or site visit date:

Wednesday, June 30, 2004

Score using 1991-2020 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates .	first prior month: May 2004	second prior month: April 2004	third prior month: March 2004
estimated precipitation total for this location:	7.45	1.77	2.60
there is a 30% chance this location will have less than:	2.87	2.00	1.32
there is a 30% chance this location will have more than:	5.14	3.42	2.04
type of month: dry normal wet	wet	dry	wet
monthly score	3 * 3 = 9	2 * 1 = 2	1 * 3 = 3
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	14 (Normal)		

Other Resources:

- [retrieve daily precipitation data](#)
- [view radar-based precipitation estimates](#)
- [view weekly precipitation maps](#)
- [Evaluating Antecedent Precipitation Conditions](#) (BWSR)

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Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:

county: **Dakota** township number: **113N**
township name: **Eureka** range number: **20W**
nearest community: **Lakeville** section number: **4**

Aerial photograph or site visit date:

Friday, July 28, 2006

Score using 1991-2020 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	first prior month: June 2006	second prior month: May 2006	third prior month: April 2006
estimated precipitation total for this location:	4.14	2.05	3.01
there is a 30% chance this location will have less than:	4.09	2.87	2.00
there is a 30% chance this location will have more than:	5.47	5.14	3.42
type of month: dry normal wet	normal	dry	normal
monthly score	3 * 2 = 6	2 * 1 = 2	1 * 2 = 2
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	10 (Normal)		

Other Resources:

- [retrieve daily precipitation data](#)
- [view radar-based precipitation estimates](#)
- [view weekly precipitation maps](#)
- [Evaluating Antecedent Precipitation Conditions](#) (BWSR)

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Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:

county: **Dakota** township number: **113N**
township name: **Eureka** range number: **20W**
nearest community: **Lakeville** section number: **4**

Aerial photograph or site visit date:

Wednesday, July 30, 2008

Score using 1991-2020 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	first prior month: June 2008	second prior month: May 2008	third prior month: April 2008
estimated precipitation total for this location:	3.72	2.49	3.35
there is a 30% chance this location will have less than:	4.09	2.87	2.00
there is a 30% chance this location will have more than:	5.47	5.14	3.42
type of month: dry normal wet	dry	dry	normal
monthly score	3 * 1 = 3	2 * 1 = 2	1 * 2 = 2
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	7 (Dry)		

Other Resources:

- [retrieve daily precipitation data](#)
- [view radar-based precipitation estimates](#)
- [view weekly precipitation maps](#)
- [Evaluating Antecedent Precipitation Conditions](#) (BWSR)

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Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:

county: **Dakota** township number: **113N**
township name: **Eureka** range number: **20W**
nearest community: **Lakeville** section number: **4**

Aerial photograph or site visit date:

Saturday, June 13, 2009

Score using 1991-2020 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates .	first prior month: May 2009	second prior month: April 2009	third prior month: March 2009
estimated precipitation total for this location:	1.02	1.97	1.52
there is a 30% chance this location will have less than:	2.87	2.00	1.32
there is a 30% chance this location will have more than:	5.14	3.42	2.04
type of month: dry normal wet	dry	dry	normal
monthly score	3 * 1 = 3	2 * 1 = 2	1 * 2 = 2
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	7 (Dry)		

Other Resources:

- [retrieve daily precipitation data](#)
- [view radar-based precipitation estimates](#)
- [view weekly precipitation maps](#)
- [Evaluating Antecedent Precipitation Conditions](#) (BWSR)

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Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:

county: **Dakota** township number: **113N**
township name: **Eureka** range number: **20W**
nearest community: **Lakeville** section number: **4**

Aerial photograph or site visit date:

Thursday, April 15, 2010

Score using 1991-2020 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	first prior month: March 2010	second prior month: February 2010	third prior month: January 2010
estimated precipitation total for this location:	0.91	1.11	0.67
there is a 30% chance this location will have less than:	1.32	0.57	0.62
there is a 30% chance this location will have more than:	2.04	1.08	1.10
type of month: dry normal wet	dry	wet	normal
monthly score	3 * 1 = 3	2 * 3 = 6	1 * 2 = 2
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	11 (Normal)		

Other Resources:

- [retrieve daily precipitation data](#)
- [view radar-based precipitation estimates](#)
- [view weekly precipitation maps](#)
- [Evaluating Antecedent Precipitation Conditions](#) (BWSR)

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Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:

county: **Dakota** township number: **113N**
township name: **Eureka** range number: **20W**
nearest community: **Lakeville** section number: **4**

Aerial photograph or site visit date:

Friday, July 2, 2010

Score using 1991-2020 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates .	first prior month: June 2010	second prior month: May 2010	third prior month: April 2010
estimated precipitation total for this location:	6.78	3.84	1.60
there is a 30% chance this location will have less than:	4.09	2.87	2.00
there is a 30% chance this location will have more than:	5.47	5.14	3.42
type of month: dry normal wet	wet	normal	dry
monthly score	3 * 3 = 9	2 * 2 = 4	1 * 1 = 1
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	14 (Normal)		

Other Resources:

- [retrieve daily precipitation data](#)
- [view radar-based precipitation estimates](#)
- [view weekly precipitation maps](#)
- [Evaluating Antecedent Precipitation Conditions](#) (BWSR)

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Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:

county: **Dakota** township number: **113N**
township name: **Eureka** range number: **20W**
nearest community: **Lakeville** section number: **4**

Aerial photograph or site visit date:

Friday, July 12, 2013

Score using 1991-2020 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	first prior month: June 2013	second prior month: May 2013	third prior month: April 2013
estimated precipitation total for this location:	5.35	7.11	4.90
there is a 30% chance this location will have less than:	4.09	2.87	2.00
there is a 30% chance this location will have more than:	5.47	5.14	3.42
type of month: dry normal wet	normal	wet	wet
monthly score	3 * 2 = 6	2 * 3 = 6	1 * 3 = 3
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	15 (Wet)		

Other Resources:

- [retrieve daily precipitation data](#)
- [view radar-based precipitation estimates](#)
- [view weekly precipitation maps](#)
- [Evaluating Antecedent Precipitation Conditions](#) (BWSR)

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Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:

county: **Dakota** township number: **113N**
township name: **Eureka** range number: **20W**
nearest community: **Lakeville** section number: **4**

Aerial photograph or site visit date:

Sunday, September 27, 2015

Score using 1991-2020 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates .	first prior month: August 2015	second prior month: July 2015	third prior month: June 2015
estimated precipitation total for this location:	4.04	7.90	5.00
there is a 30% chance this location will have less than:	3.40	3.00	4.09
there is a 30% chance this location will have more than:	5.65	5.35	5.47
type of month: dry normal wet	normal	wet	normal
monthly score	3 * 2 = 6	2 * 3 = 6	1 * 2 = 2
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	14 (Normal)		

Other Resources:

- [retrieve daily precipitation data](#)
- [view radar-based precipitation estimates](#)
- [view weekly precipitation maps](#)
- [Evaluating Antecedent Precipitation Conditions](#) (BWSR)

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Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:

county: **Dakota** township number: **113N**
township name: **Eureka** range number: **20W**
nearest community: **Lakeville** section number: **4**

Aerial photograph or site visit date:

Wednesday, April 13, 2016

Score using 1991-2020 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	first prior month: March 2016	second prior month: February 2016	third prior month: January 2016
estimated precipitation total for this location:	1.95	1.05	0.35
there is a 30% chance this location will have less than:	1.32	0.57	0.62
there is a 30% chance this location will have more than:	2.04	1.08	1.10
type of month: dry normal wet	normal	normal	dry
monthly score	3 * 2 = 6	2 * 2 = 4	1 * 1 = 1
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	11 (Normal)		

Other Resources:

- [retrieve daily precipitation data](#)
- [view radar-based precipitation estimates](#)
- [view weekly precipitation maps](#)
- [Evaluating Antecedent Precipitation Conditions](#) (BWSR)

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Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:

county: **Dakota** township number: **113N**
township name: **Eureka** range number: **20W**
nearest community: **Lakeville** section number: **4**

Aerial photograph or site visit date:

Monday, October 16, 2017

Score using 1991-2020 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	first prior month: September 2017	second prior month: August 2017	third prior month: July 2017
estimated precipitation total for this location:	1.88	6.18	3.86
there is a 30% chance this location will have less than:	1.86	3.40	3.00
there is a 30% chance this location will have more than:	5.79	5.65	5.35
type of month: dry normal wet	normal	wet	normal
monthly score	3 * 2 = 6	2 * 3 = 6	1 * 2 = 2
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	14 (Normal)		

Other Resources:

- [retrieve daily precipitation data](#)
- [view radar-based precipitation estimates](#)
- [view weekly precipitation maps](#)
- [Evaluating Antecedent Precipitation Conditions](#) (BWSR)

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Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:

county: **Dakota** township number: **113N**
township name: **Eureka** range number: **20W**
nearest community: **Lakeville** section number: **4**

Aerial photograph or site visit date:

Tuesday, April 23, 2019

Score using 1991-2020 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	first prior month: March 2019	second prior month: February 2019	third prior month: January 2019
estimated precipitation total for this location:	2.16	2.14	0.68
there is a 30% chance this location will have less than:	1.32	0.57	0.62
there is a 30% chance this location will have more than:	2.04	1.08	1.10
type of month: dry normal wet	wet	wet	normal
monthly score	3 * 3 = 9	2 * 3 = 6	1 * 2 = 2
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	17 (Wet)		

Other Resources:

- [retrieve daily precipitation data](#)
- [view radar-based precipitation estimates](#)
- [view weekly precipitation maps](#)
- [Evaluating Antecedent Precipitation Conditions](#) (BWSR)

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Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:

county: **Dakota** township number: **113N**
township name: **Eureka** range number: **20W**
nearest community: **Lakeville** section number: **4**

Aerial photograph or site visit date:

Saturday, July 27, 2019

Score using 1991-2020 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	first prior month: June 2019	second prior month: May 2019	third prior month: April 2019
estimated precipitation total for this location:	3.43	6.31	4.82
there is a 30% chance this location will have less than:	4.09	2.87	2.00
there is a 30% chance this location will have more than:	5.47	5.14	3.42
type of month: dry normal wet	dry	wet	wet
monthly score	3 * 1 = 3	2 * 3 = 6	1 * 3 = 3
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	12 (Normal)		

Other Resources:

- [retrieve daily precipitation data](#)
- [view radar-based precipitation estimates](#)
- [view weekly precipitation maps](#)
- [Evaluating Antecedent Precipitation Conditions](#) (BWSR)

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Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:

county: **Dakota** township number: **113N**
township name: **Eureka** range number: **20W**
nearest community: **Lakeville** section number: **4**

Aerial photograph or site visit date:

Sunday, April 5, 2020

Score using 1991-2020 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	first prior month: March 2020	second prior month: February 2020	third prior month: January 2020
estimated precipitation total for this location:	2.37	0.66	1.09
there is a 30% chance this location will have less than:	1.32	0.57	0.62
there is a 30% chance this location will have more than:	2.04	1.08	1.10
type of month: dry normal wet	wet	normal	normal
monthly score	3 * 3 = 9	2 * 2 = 4	1 * 2 = 2
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	15 (Wet)		

Other Resources:

- [retrieve daily precipitation data](#)
- [view radar-based precipitation estimates](#)
- [view weekly precipitation maps](#)
- [Evaluating Antecedent Precipitation Conditions](#) (BWSR)

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Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:

county: **Dakota** township number: **113N**
township name: **Eureka** range number: **20W**
nearest community: **Lakeville** section number: **4**

Aerial photograph or site visit date:

Thursday, April 1, 2021

Score using 1991-2020 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	first prior month: March 2021	second prior month: February 2021	third prior month: January 2021
estimated precipitation total for this location:	2.72	0.52	0.87
there is a 30% chance this location will have less than:	1.32	0.57	0.62
there is a 30% chance this location will have more than:	2.04	1.08	1.10
type of month: dry normal wet	wet	dry	normal
monthly score	3 * 3 = 9	2 * 1 = 2	1 * 2 = 2
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	13 (Normal)		

Other Resources:

- [retrieve daily precipitation data](#)
- [view radar-based precipitation estimates](#)
- [view weekly precipitation maps](#)
- [Evaluating Antecedent Precipitation Conditions](#) (BWSR)

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Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:

county: **Dakota** township number: **113N**
township name: **Eureka** range number: **20W**
nearest community: **Lakeville** section number: **4**

Aerial photograph or site visit date:

Friday, June 18, 2021

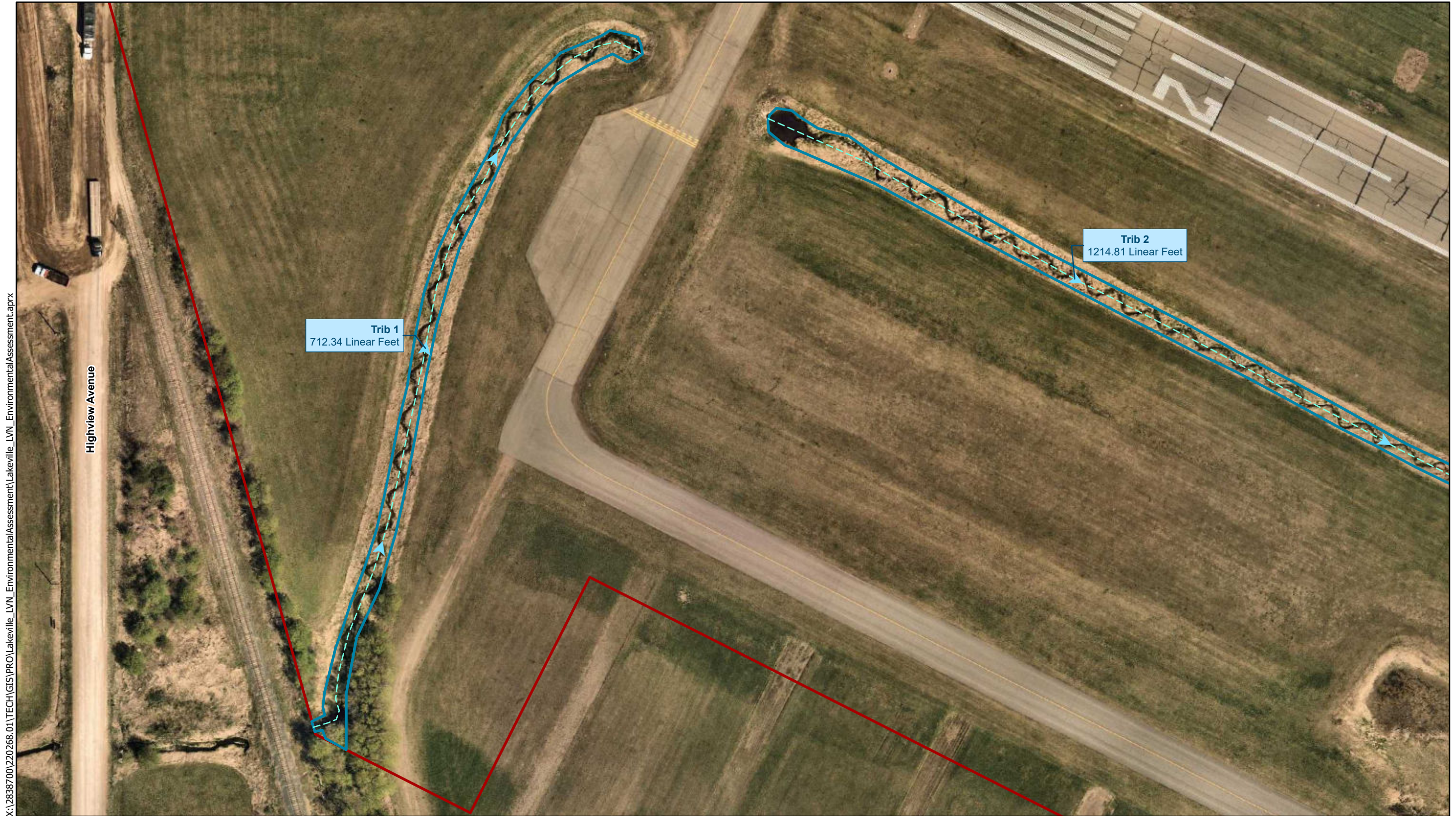
Score using 1991-2020 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates .	first prior month: May 2021	second prior month: April 2021	third prior month: March 2021
estimated precipitation total for this location:	3.60	1.81	2.72
there is a 30% chance this location will have less than:	2.87	2.00	1.32
there is a 30% chance this location will have more than:	5.14	3.42	2.04
type of month: dry normal wet	normal	dry	wet
monthly score	3 * 2 = 6	2 * 1 = 2	1 * 3 = 3
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	11 (Normal)		

Other Resources:

- [retrieve daily precipitation data](#)
- [view radar-based precipitation estimates](#)
- [view weekly precipitation maps](#)
- [Evaluating Antecedent Precipitation Conditions](#) (BWSR)

Appendix F. Ordinary High Water Mark Determination Maps



ORDINARY HIGH WATER MARK DETERMINATION HISTORIC AERIAL IMAGE REVIEW

AIRLAKE AIRPORT

0 20 40 80 120 160 Feet



- Legend**
- Project AOI
 - Tributary Boundary (OHWM)
 - Tributary Centerline

IMAGE INFORMATION AND PRECIPITATION

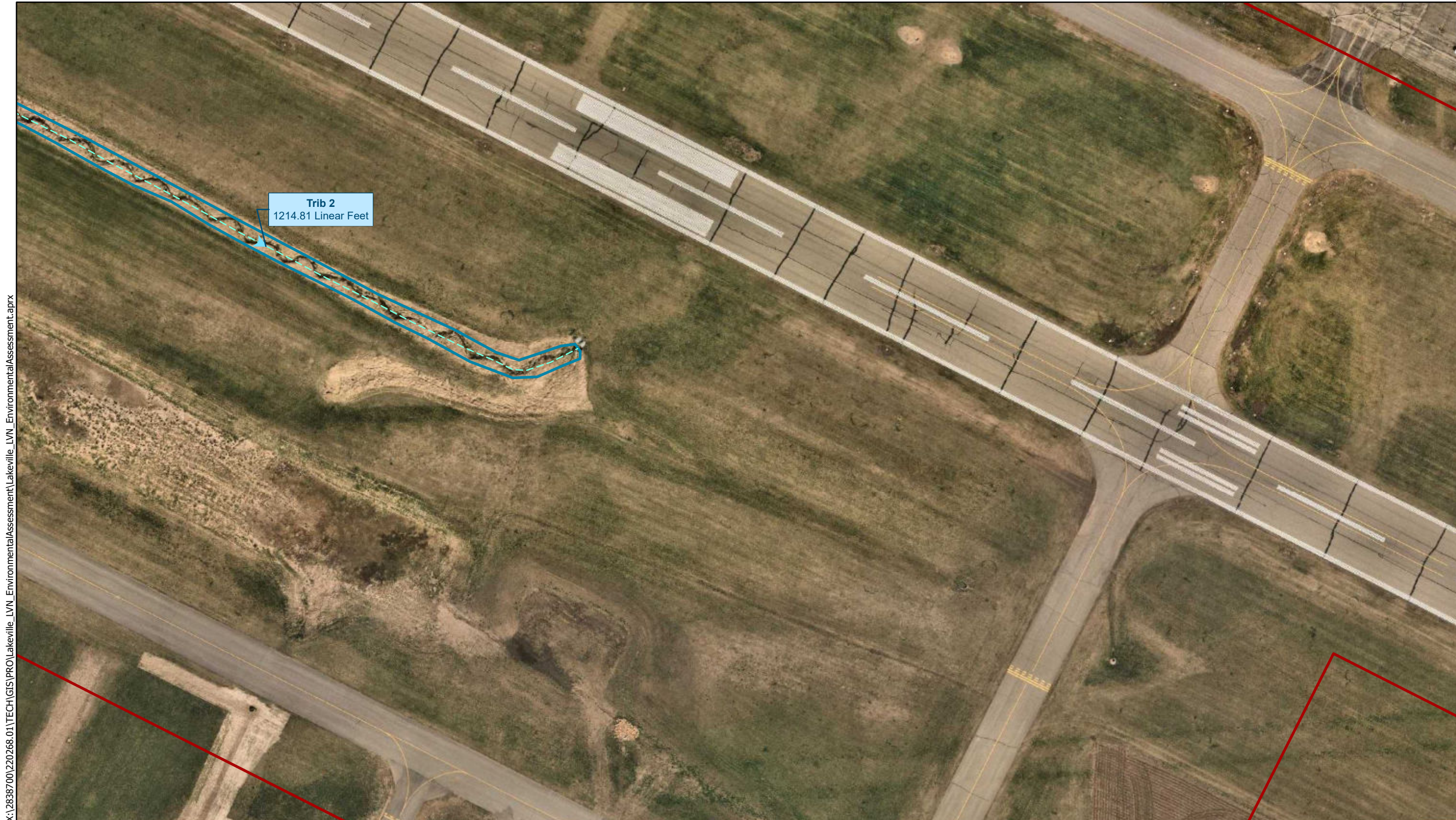
IMAGE DATE: 4/1/2021
SOURCE: Dakota County
PRECIPITATION: Normal (13)

Image from USDA Geospatial Data Gateway accessed at https://gdg.sc.egov.usda.gov/GDGHome_DirectDownload.aspx

PROJECT LOCATION

Sections 32 and 33, T114, R20W
Sections 3 and 4, T113, R20W
City of Lakeville
Dakota County, MN
LRR Subregion: M
USACE Regional Supplement: Midwest
Area = 164.4 acres
Field work conducted August 1 - 4 and September 8, 2022

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**ORDINARY HIGH WATER MARK DETERMINATION
HISTORIC AERIAL IMAGE REVIEW**
AIRLAKE AIRPORT



- Legend**
- Project AOI
 - Tributary Boundary (OHWM)
 - ➔ Tributary Centerline

IMAGE INFORMATION AND PRECIPITATION

IMAGE DATE: 4/1/2021
SOURCE: Dakota County
PRECIPITATION: Normal (13)

Image from USDA Geospatial Data Gateway accessed at https://gdg.sc.egov.usda.gov/GDGHome_DirectDownload.aspx

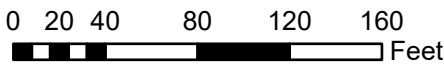
PROJECT LOCATION

Sections 32 and 33, T114, R20W
Sections 3 and 4, T113, R20W
City of Lakeville
Dakota County, MN
LRR Subregion: M
USACE Regional Supplement: Midwest
Area = 164.4 acres
Field work conducted August 1 - 4 and September 8, 2022

X:\2838700\220268.01\TECH\GIS\PRO\Lakeville_LVN_EnvironmentalAssessment.aprx



**ORDINARY HIGH WATER MARK DETERMINATION
HISTORIC AERIAL IMAGE REVIEW**
AIRLAKE AIRPORT



Legend

-  Project AOI
-  Tributary Boundary (OHWM)
-  Tributary Centerline

IMAGE INFORMATION AND PRECIPITATION

IMAGE DATE: 4/1/2021
SOURCE: Dakota County
PRECIPITATION: Normal (13)

Image from USDA Geospatial Data Gateway accessed
at https://gdg.sc.egov.usda.gov/GDGHome_DirectDownload.aspx

PROJECT LOCATION

Sections 32 and 33, T114, R20W
Sections 3 and 4, T113, R20W
City of Lakeville
Dakota County, MN
LRR Subregion: M
USACE Regional Supplement: Midwest
Area = 164.4 acres
Field work conducted August 1 - 4 and
September 8, 2022



ORDINARY HIGH WATER MARK DETERMINATION HISTORIC AERIAL IMAGE REVIEW

AIRLAKE AIRPORT

0 20 40 80 120 160 Feet



- Legend**
- Project AOI
 - Tributary Boundary (OHWM)
 - Tributary Centerline

IMAGE INFORMATION AND PRECIPITATION

IMAGE DATE: 4/5/2020
SOURCE: 7 County
PRECIPITATION: Wet (15)

Image from USDA Geospatial Data Gateway accessed at https://gdg.sc.egov.usda.gov/GDGHome_DirectDownload.aspx

PROJECT LOCATION

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Sections 3 and 4, T113, R20W
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**ORDINARY HIGH WATER MARK DETERMINATION
HISTORIC AERIAL IMAGE REVIEW**
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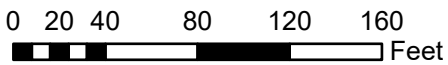
PROJECT LOCATION

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IMAGE INFORMATION AND PRECIPITATION

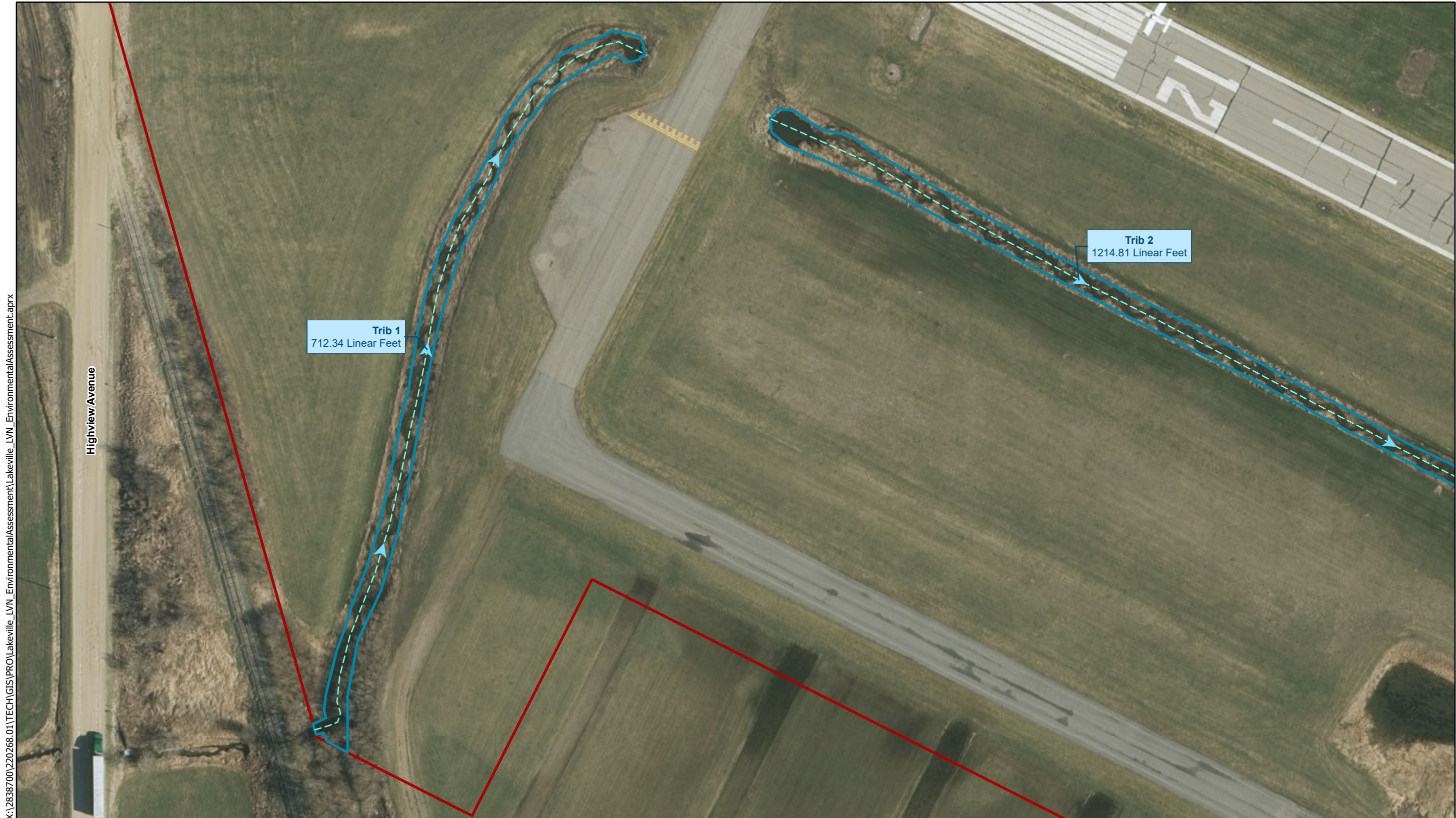
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IMAGE INFORMATION AND PRECIPITATION

IMAGE DATE: 4/23/2019
SOURCE: Dakota County
PRECIPITATION: Wet (17)

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**ORDINARY HIGH WATER MARK DETERMINATION
HISTORIC AERIAL IMAGE REVIEW**
AIRLAKE AIRPORT

0 20 40 80 120 160 Feet



Legend

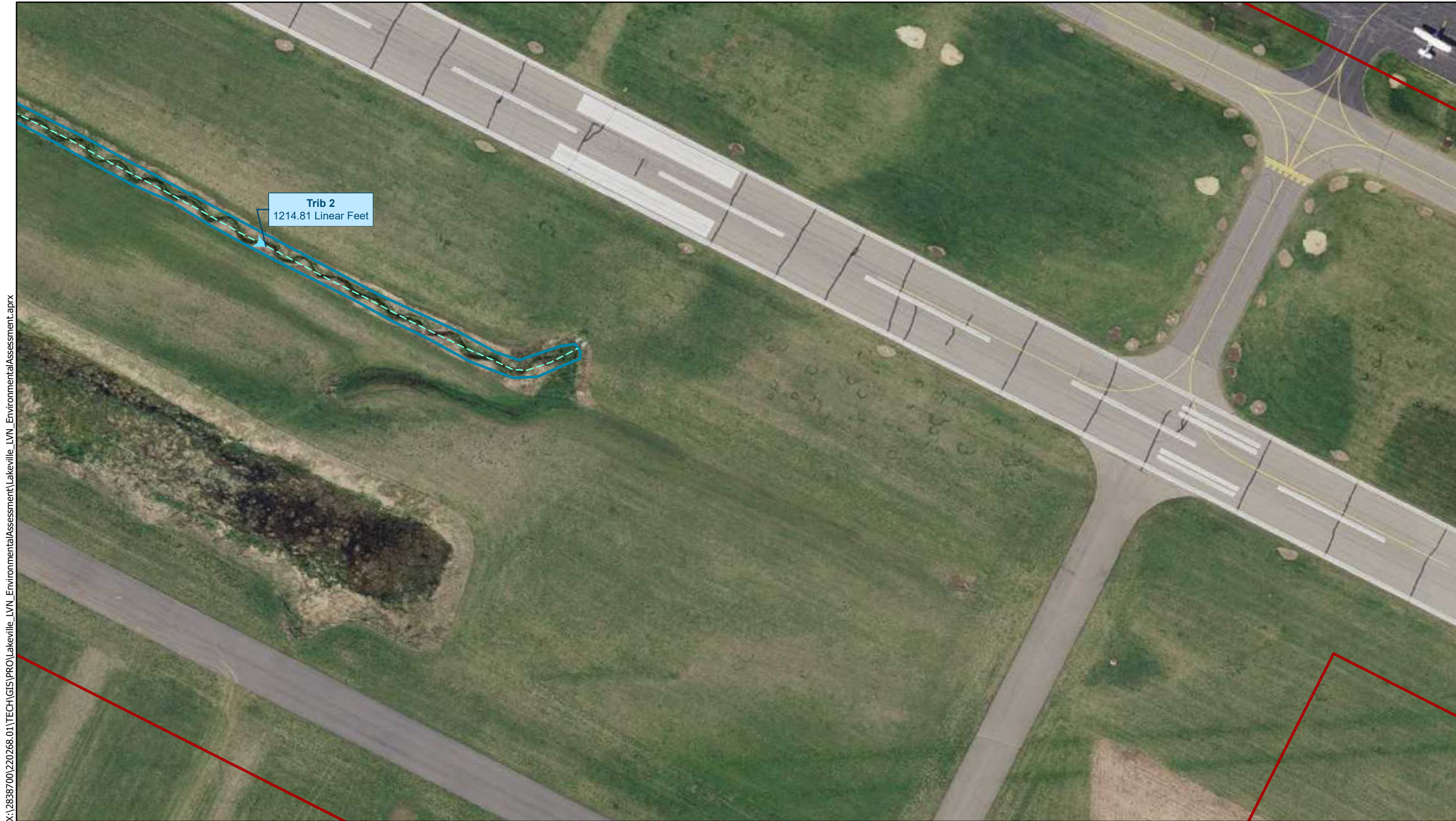
- Project AOI
- Tributary Boundary (OHWM)
- Tributary Centerline

IMAGE INFORMATION AND PRECIPITATION

IMAGE DATE: 4/23/2016
SOURCE: 7 County
PRECIPITATION: Normal (13)
Image from USDA Geospatial Data Gateway accessed
at [https://gdg.sc.egov.usda.gov/
GDGHome_DirectDownload.aspx](https://gdg.sc.egov.usda.gov/GDGHome_DirectDownload.aspx)

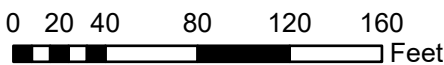
PROJECT LOCATION

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**ORDINARY HIGH WATER MARK DETERMINATION
HISTORIC AERIAL IMAGE REVIEW**
AIRLAKE AIRPORT



Legend

-  Project AOI
-  Tributary Boundary (OHWM)
-  Tributary Centerline

IMAGE INFORMATION AND PRECIPITATION

IMAGE DATE: 4/23/2016
SOURCE: 7 County
PRECIPITATION: Normal (13)
Image from USDA Geospatial Data Gateway accessed
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IMAGE INFORMATION AND PRECIPITATION

IMAGE DATE: 4/23/2016
SOURCE: 7 County
PRECIPITATION: Normal (13)

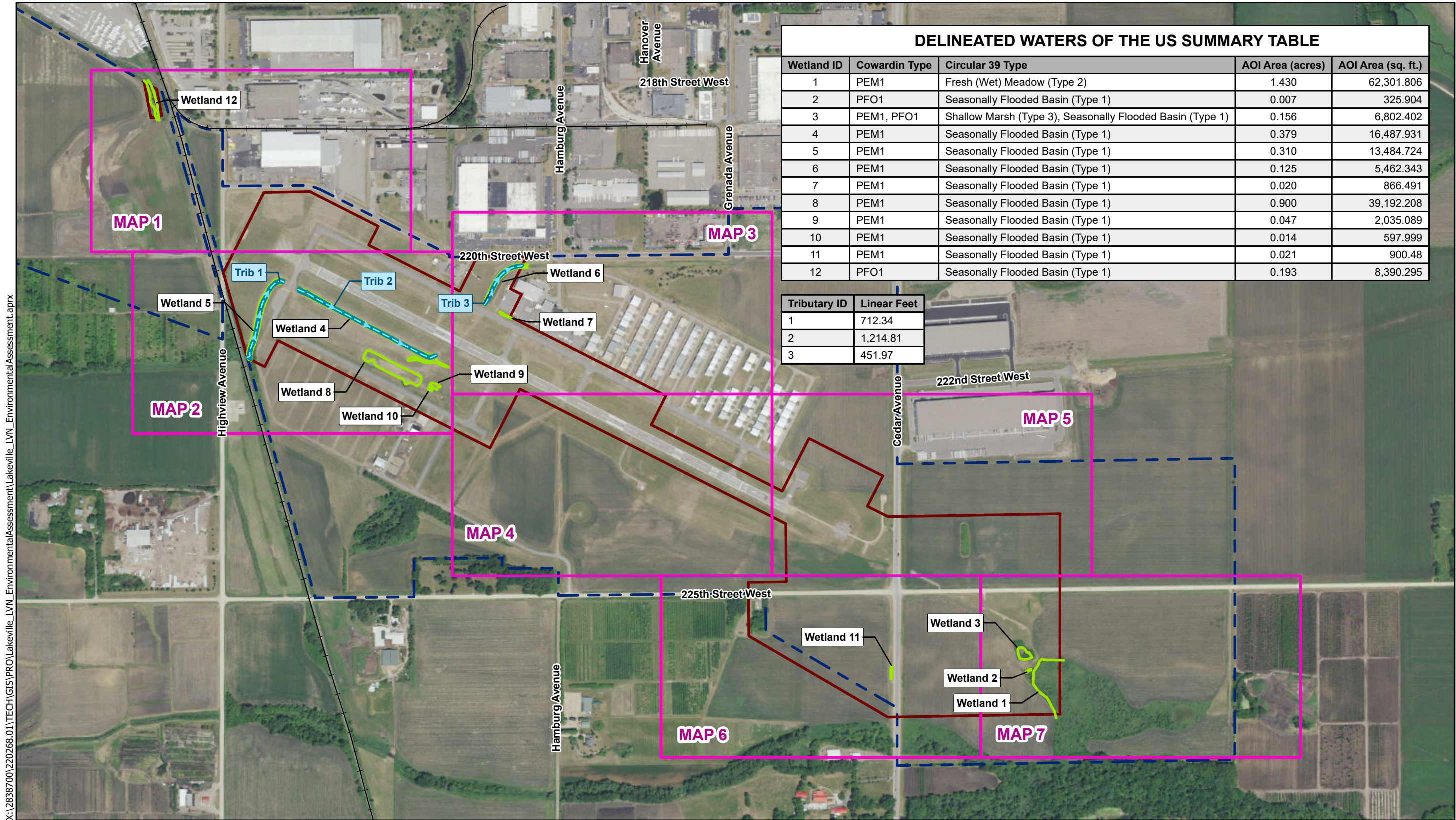
Image from USDA Geospatial Data Gateway accessed at https://gdg.sc.egov.usda.gov/GDGHome_DirectDownload.aspx

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Appendix G. Wetland Boundary Maps

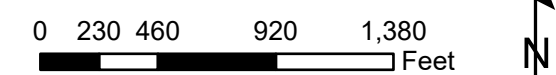
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DELINEATED WATERS OF THE US SUMMARY TABLE				
Wetland ID	Cowardin Type	Circular 39 Type	AOI Area (acres)	AOI Area (sq. ft.)
1	PEM1	Fresh (Wet) Meadow (Type 2)	1.430	62,301.806
2	PFO1	Seasonally Flooded Basin (Type 1)	0.007	325.904
3	PEM1, PFO1	Shallow Marsh (Type 3), Seasonally Flooded Basin (Type 1)	0.156	6,802.402
4	PEM1	Seasonally Flooded Basin (Type 1)	0.379	16,487.931
5	PEM1	Seasonally Flooded Basin (Type 1)	0.310	13,484.724
6	PEM1	Seasonally Flooded Basin (Type 1)	0.125	5,462.343
7	PEM1	Seasonally Flooded Basin (Type 1)	0.020	866.491
8	PEM1	Seasonally Flooded Basin (Type 1)	0.900	39,192.208
9	PEM1	Seasonally Flooded Basin (Type 1)	0.047	2,035.089
10	PEM1	Seasonally Flooded Basin (Type 1)	0.014	597.999
11	PEM1	Seasonally Flooded Basin (Type 1)	0.021	900.48
12	PFO1	Seasonally Flooded Basin (Type 1)	0.193	8,390.295

Tributary ID	Linear Feet
1	712.34
2	1,214.81
3	451.97

**DELINEATED WATERS OF THE US
OVERVIEW MAP**
AIRLAKE AIRPORT



- ProjectAOI
- Delineated Wetland

- Legend**
- Tributary Boundary (OHWM)
 - Tributary Centerline

- Railroad
- Airport Property Boundary
- Map Sheet

DATA SOURCES
1. Image Source: MnGeo WMS Image Service, NAIP 2021, accessed at <https://imageserver.gisdata.mn.gov/cgi-bin/wms?>

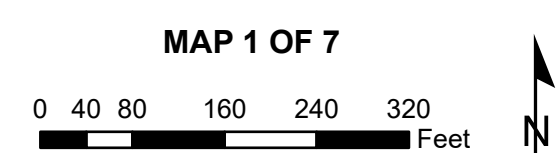
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DELINEATED WATERS OF THE US

AIRLAKE AIRPORT



- ProjectAOI
- Delineated Wetland
- Photo Location
- Culvert

- Data Point Type**
- Upland
 - Wetland
 - Tributary Boundary (OHWM)
 - Tributary Centerline

Legend

- Flow Type**
- Ditch Flow Direction
 - General Flow Direction
- Contour Type**
- Index
 - Intermediate

- Railroad
- Airport Property Boundary

DATA SOURCES

1. Image Source: MnGeo WMS Image Service, NAIP 2021, accessed at <https://imageserver.gisdata.mn.gov/cgi-bin/wms?>

2. Contours derived from LIDAR data collected in 2008 for SE Minnesota LiDAR Collection Project. Contour interval is 2 feet. Accessed at <http://arcgis.dnr.state.mn.us/maps/mntopo/>

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DELINEATED WATERS OF THE US
AIRLAKE AIRPORT

MAP 2 OF 7

0 40 80 160 240 320 Feet

N

Legend

Data Point Type

- Upland
- Wetland
- Tributary Boundary (OHWM)
- Tributary Centerline

Flow Type

- Ditch Flow Direction
- General Flow Direction

Contour Type

- Index
- Intermediate

ProjectAOI

- Delineated Wetland
- Photo Location
- Culvert

Railroad

- Airport Property Boundary

PROJECT LOCATION

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DATA SOURCES

1. Image Source: MGeo WMS Image Service, NAIP 2021, accessed at <https://imageserver.gisdata.mn.gov/cgi-bin/wms?>

2. Contours derived from LIDAR data collected in 2008 for SE Minnesota LIDAR Collection Project. Contour interval is 2 feet. Accessed at <http://arcgis.dnr.state.mn.us/maps/mntopo/>

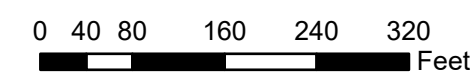


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DELINEATED WATERS OF THE US

AIRLAKE AIRPORT

MAP 3 OF 7



- Project AOI
- Delineated Wetland
- Photo Location
- Culvert

- Data Point Type**
- Upland
 - Wetland
 - Tributary Boundary (OHWM)
 - Tributary Centerline

Legend

- Flow Type**
- Ditch Flow Direction
 - General Flow Direction
- Contour Type**
- Index
 - Intermediate

- Railroad
- Airport Property Boundary

DATA SOURCES

- Image Source: MnGeo WMS Image Service, NAIP 2021, accessed at <https://imageserver.gisdata.mn.gov/cgi-bin/wms?>
- Contours derived from LIDAR data collected in 2008 for SE Minnesota LIDAR Collection Project. Contour interval is 2 feet. Accessed at <http://arcgis.dnr.state.mn.us/maps/mntopo/>

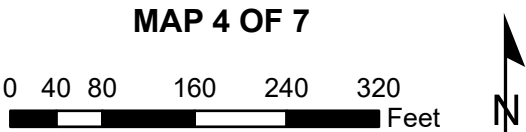
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DELINEATED WATERS OF THE US
AIRLAKE AIRPORT



- ProjectAOI
- Delineated Wetland
- Photo Location
- Culvert

- Data Point Type**
- Upland
 - Wetland
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 - Tributary Centerline

Legend

- Flow Type**
- Ditch Flow Direction
 - General Flow Direction
- Contour Type**
- Index
 - Intermediate

- Railroad
- Airport Property Boundary

DATA SOURCES

1. Image Source: MnGeo WMS Image Service, NAIP 2021, accessed at <https://imageserver.gisdata.mn.gov/cgi-bin/wms?>

2. Contours derived from LIDAR data collected in 2008 for SE Minnesota LiDAR Collection Project. Contour interval is 2 feet. Accessed at <http://arcgis.dnr.state.mn.us/maps/mntopo/>

PROJECT LOCATION

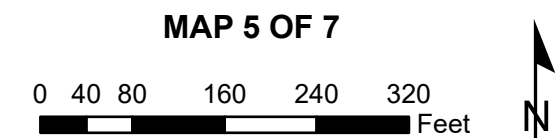
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DELINEATED WATERS OF THE US

AIRLAKE AIRPORT



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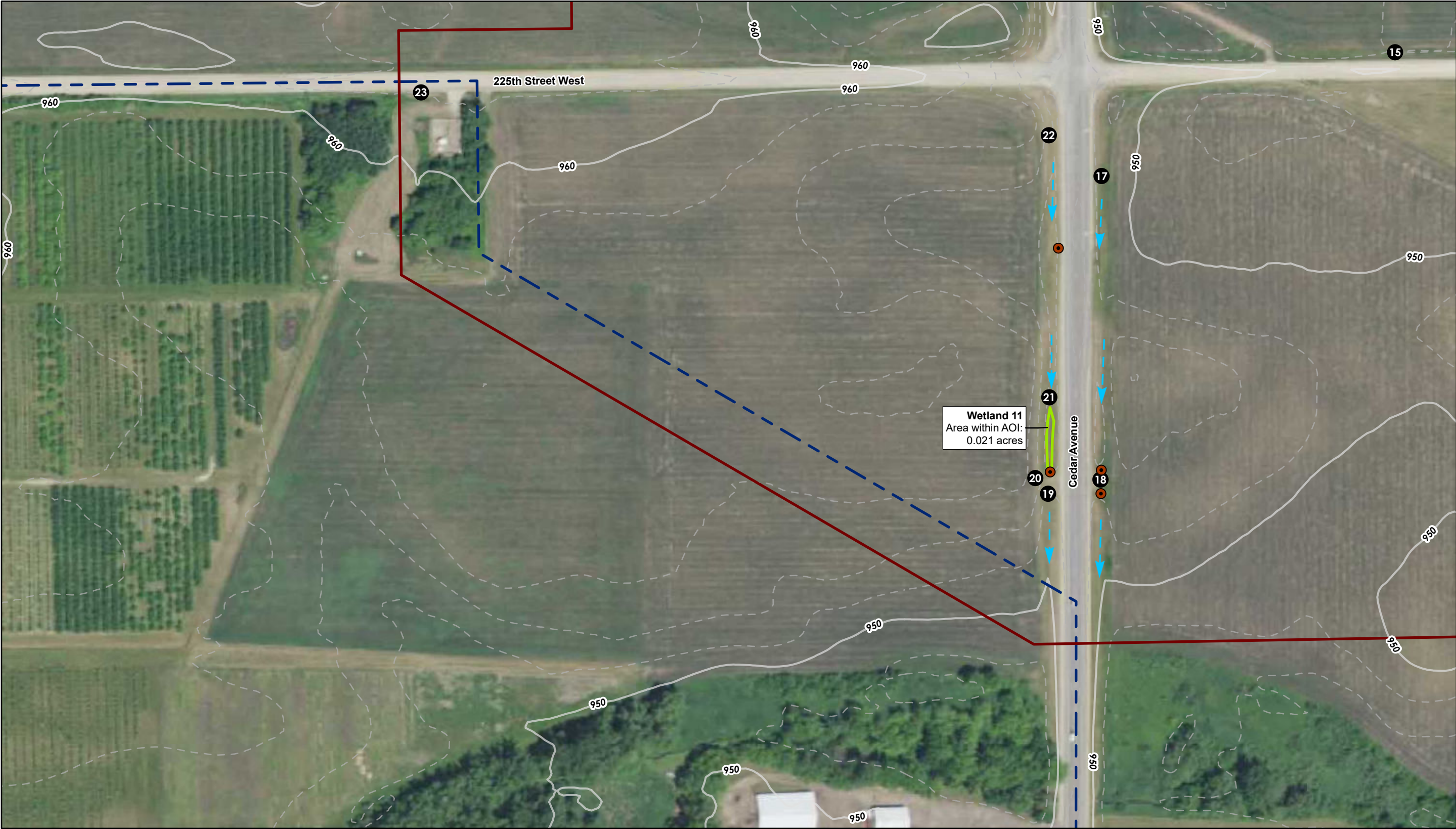
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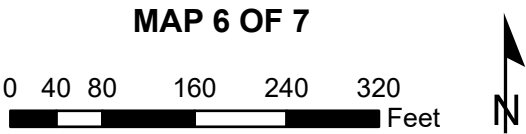
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DELINEATED WATERS OF THE US
AIRLAKE AIRPORT



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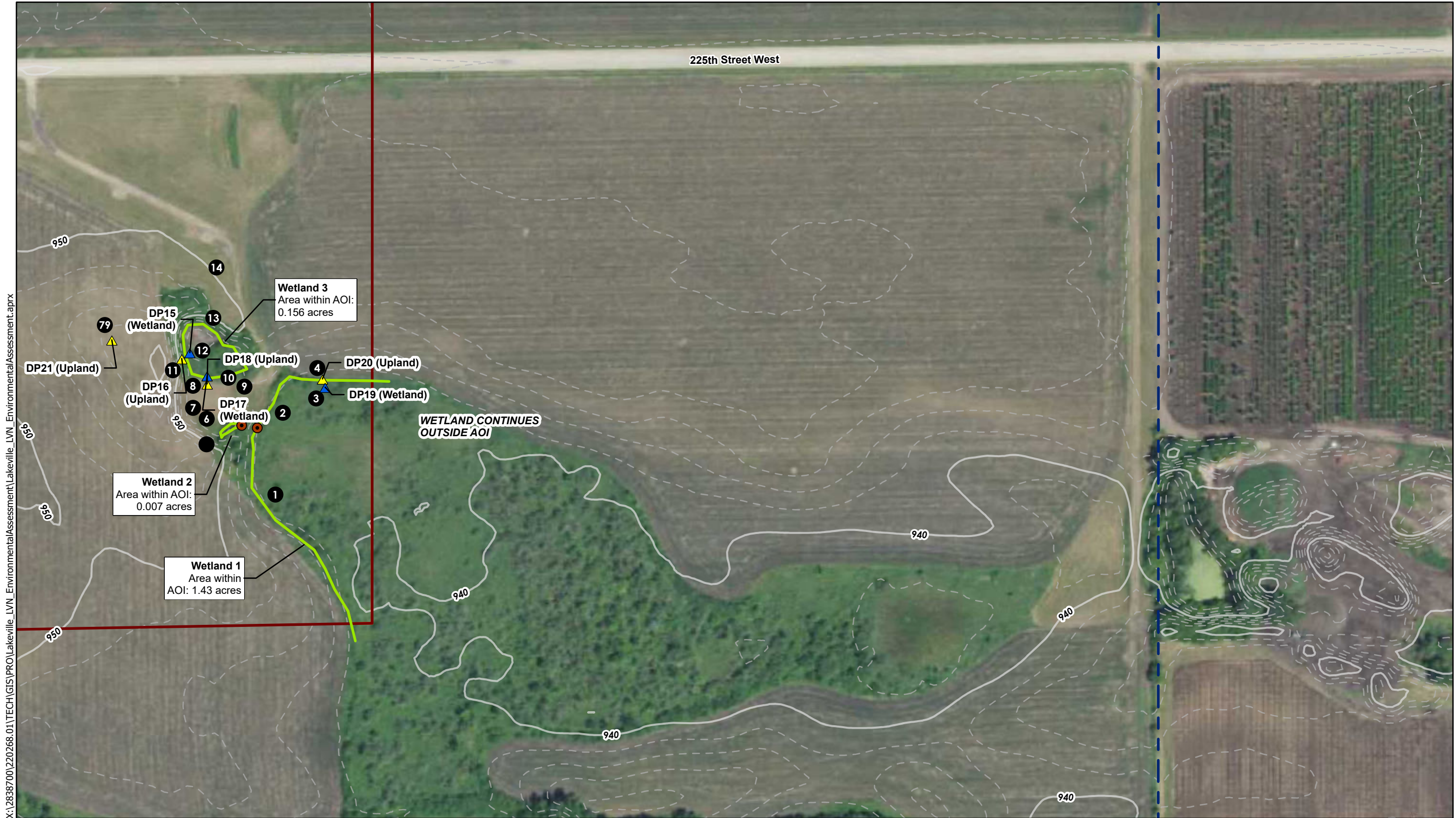
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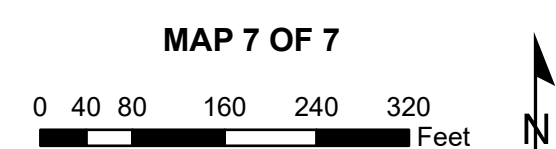
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Appendix H. Data Sheets

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Lakeville (LVN) Airport EA City/County: Lakeville/Dakota Sampling Date: 8/2/2022
 Applicant/Owner: Metropolitan Airports Commission State: MN Sampling Point: DP1
 Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 4, T113, R20W
 Landform (hillside, terrace, etc.): Swale/drainage Local relief (concave, convex, none): Concave
 Slope (%): <1% Lat: 44.62868 Long: -93.231987 Datum: WGS 84
 Soil Map Unit Name: Marshan silty clay loam (252) (Predominantly Hydric) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
 Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? 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>	

Remarks:

A WETS analysis of the antecedent precipitation indicates the hydrologic conditions on the site were drier than normal range at the time of investigation. DP within constructed/relocated stream corridor. Area mown except for stream. Wetland ID=4

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
			=Total Cover	
Sapling/Shrub Stratum	(Plot size: <u>15 ft</u>)			
1.				
2.				
3.				
4.				
5.				
			=Total Cover	
Herb Stratum	(Plot size: <u>5 ft</u>)			
1.	<u>Phalaris arundinacea</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>
2.	<u>Setaria pumila</u>	<u>25</u>	<u>Yes</u>	<u>FAC</u>
3.	<u>Urtica dioica</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>
4.	<u>Typha angustifolia</u>	<u>15</u>	<u>No</u>	<u>OBL</u>
5.				
6.				
7.				
8.				
9.				
10.				
		<u>100</u>	=Total Cover	
Woody Vine Stratum	(Plot size: <u>15 ft</u>)			
1.				
2.				
			=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>15</u>	x 1 = <u>15</u>
FACW species <u>60</u>	x 2 = <u>120</u>
FAC species <u>25</u>	x 3 = <u>75</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>100</u> (A)	<u>210</u> (B)
Prevalence Index = B/A = <u>2.10</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes X No

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

At edge of constructed stream; cattails - old stalks - mown. Hydrophytic vegetation is present.

SOIL

Sampling Point: DP1

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 ¹	Loc ²		
0-4	10YR 2/1	100					Loamy/Clayey	
4-12	10YR 2/1	95	7.5YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ Coast Prairie Redox (A16)
☐ Histic Epipedon (A2)	☐ Iron-Manganese Masses (F12)
☐ Black Histic (A3)	☐ Red Parent Material (F21)
☐ Hydrogen Sulfide (A4)	☐ Very Shallow Dark Surface (F22)
☐ Stratified Layers (A5)	☐ Other (Explain in Remarks)
☐ 2 cm Muck (A10)	
☐ Depleted Below Dark Surface (A11)	
☐ Thick Dark Surface (A12)	
☐ Sandy Mucky Mineral (S1)	
☐ 5 cm Mucky Peat or Peat (S3)	
☐ Sandy Gleyed Matrix (S4)	
☐ Sandy Redox (S5)	
☐ Stripped Matrix (S6)	
☐ Dark Surface (S7)	
☐ Loamy Mucky Mineral (F1)	
☐ Loamy Gleyed Matrix (F2)	
☐ Depleted Matrix (F3)	
☒ Redox Dark Surface (F6)	
☐ Depleted Dark Surface (F7)	
☐ Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: <u>Compacted</u> Depth (inches): <u>12</u>	Hydric Soil Present? Yes ☒ No ☐
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Remarks:
Soils very dry; Dng to refusal. Constructed drainage corridor. Hydric soils are present. Hydric soils indicator Redox Dark Surface (F6) is satisfied.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☒ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☒ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): <u> </u> Water Table Present? Yes ☐ No ☒ Depth (inches): <u> </u> Saturation Present? Yes ☐ No ☒ Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes ☒ No ☐
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology is indicated.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Lakeville (LVN) Airport EA City/County: Lakeville/Dakota Sampling Date: 8/2/2022
 Applicant/Owner: Metropolitan Airports Commission State: MN Sampling Point: DP2
 Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 4, T113, R20W
 Landform (hillside, terrace, etc.): Midslope Local relief (concave, convex, none): Convex
 Slope (%): 2-3% Lat: 44.628721 Long: -93.231951 Datum: WGS 84
 Soil Map Unit Name: Marshan silty clay loam (252) (Predominantly Hydric) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
 Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	

Remarks:

A WETS analysis of the antecedent precipitation indicates the hydrologic conditions on the site were drier than normal range at the time of investigation. DP within constructed/relocated stream corridor under very dry conditions; area mown regularly.

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
			=Total Cover	
Sapling/Shrub Stratum	(Plot size: <u>15 ft</u>)			
1.				
2.				
3.				
4.				
5.				
			=Total Cover	
Herb Stratum	(Plot size: <u>5 ft</u>)			
1.	<u>Poa pratensis</u>	<u>75</u>	<u>Yes</u>	<u>FAC</u>
2.	<u>Lotus corniculatus</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>
3.	<u>Ambrosia artemisiifolia</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
4.				
5.				
6.				
7.				
8.				
9.				
10.				
		<u>100</u>	=Total Cover	
Woody Vine Stratum	(Plot size: <u>15 ft</u>)			
1.				
2.				
			=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

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>75</u>	x 3 = <u>225</u>
FACU species <u>25</u>	x 4 = <u>100</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>100</u> (A)	<u>325</u> (B)
Prevalence Index = B/A = <u>3.25</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No X

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

Also, volunteer alfalfa present. Hydrophytic vegetation is not present. Fails the Prevalence Index at 3.25.

SOIL

Sampling Point: DP2

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 ¹	Loc ²		
0-4	10YR 3/1	100					Loamy/Clayey	
4-10	10YR 3/3	100					Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
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☐ Depleted Dark Surface (F7)	
☐ Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: <u>Compacted</u> Depth (inches): <u>10</u>	Hydric Soil Present? Yes <u> </u> No <u>X</u>
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Remarks:
Dry to refusal. Very dry. Hydric soils are not present. Does not meet hydric soils criteria.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
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☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology is neither present nor indicated. This sampling point is separated from its paired wetland sampling point (DP 1) by 15 ft with about 1 ft change in elevation.

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Midwest Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: <u>Lakeville (LVN) Airport EA</u>	City/County: <u>Lakeville/Dakota</u>	Sampling Date: <u>8/2/2022</u>
Applicant/Owner: <u>Metropolitan Airports Commission</u>	State: <u>MN</u>	Sampling Point: <u>DP3</u>
Investigator(s): <u>Brauna Hartzell, Mead & Hunt, Inc.</u>	Section, Township, Range: <u>Section 4, T113, R20W</u>	
Landform (hillside, terrace, etc.): <u>Swale</u>	Local relief (concave, convex, none): <u>Concave</u>	
Slope (%): <u><1%</u> Lat: <u>44.628517</u>	Long: <u>-93.23195</u>	Datum: <u>WGS 84</u>
Soil Map Unit Name: <u>Marshan silty clay loam (252) (Predominantly Hydric)</u>		NWI classification: <u>N/A</u>

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

Are Vegetation ☒ , Soil ☒ , or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

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

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Remarks: A WETS analysis of the antecedent precipitation indicates the hydrologic conditions on the site were drier than normal range at the time of investigation. Very dry; area mown; constructed swale. Wetland ID=4	

VEGETATION – Use scientific names of plants.

<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Tree Stratum</th> <th style="text-align: left;">(Plot size: <u>30 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td colspan="3" style="text-align: right;">=Total Cover</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Sapling/Shrub Stratum</th> <th style="text-align: left;">(Plot size: <u>15 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td colspan="3" style="text-align: right;">=Total Cover</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Herb Stratum</th> <th style="text-align: left;">(Plot size: <u>5 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td><u>Phalaris arundinacea</u></td><td style="text-align: center;">60</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FACW</td></tr> <tr><td>2.</td><td><u>Ambrosia artemisiifolia</u></td><td style="text-align: center;">20</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FACU</td></tr> <tr><td>3.</td><td><u>Persicaria maculosa</u></td><td style="text-align: center;">15</td><td style="text-align: center;">No</td><td style="text-align: center;">FAC</td></tr> <tr><td>4.</td><td><u>Rumex crispus</u></td><td style="text-align: center;">3</td><td style="text-align: center;">No</td><td style="text-align: center;">FAC</td></tr> <tr><td>5.</td><td><u>Polygonum aviculare</u></td><td style="text-align: center;">2</td><td style="text-align: center;">No</td><td style="text-align: center;">FAC</td></tr> <tr><td>6.</td><td></td><td></td><td></td><td></td></tr> <tr><td>7.</td><td></td><td></td><td></td><td></td></tr> <tr><td>8.</td><td></td><td></td><td></td><td></td></tr> <tr><td>9.</td><td></td><td></td><td></td><td></td></tr> <tr><td>10.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td style="text-align: center;">100</td> <td colspan="2" style="text-align: right;">=Total Cover</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Woody Vine Stratum</th> <th style="text-align: left;">(Plot size: <u>15 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td colspan="3" style="text-align: right;">=Total Cover</td> </tr> </table>	Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	1.					2.					3.					4.					5.							=Total Cover			Sapling/Shrub Stratum	(Plot size: <u>15 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	1.					2.					3.					4.					5.							=Total Cover			Herb Stratum	(Plot size: <u>5 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	1.	<u>Phalaris arundinacea</u>	60	Yes	FACW	2.	<u>Ambrosia artemisiifolia</u>	20	Yes	FACU	3.	<u>Persicaria maculosa</u>	15	No	FAC	4.	<u>Rumex crispus</u>	3	No	FAC	5.	<u>Polygonum aviculare</u>	2	No	FAC	6.					7.					8.					9.					10.							100	=Total Cover		Woody Vine Stratum	(Plot size: <u>15 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	1.					2.							=Total Cover			Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>60</u></td> <td>x 2 = <u>120</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>20</u></td> <td>x 4 = <u>80</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td><u>260</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.60</u></td> </tr> </table> Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>X</u> 3 - Prevalence Index is ≤3.0¹ <u>4</u> - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes ☒ No ☐	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>60</u>	x 2 = <u>120</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>20</u>	x 4 = <u>80</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>100</u> (A)	<u>260</u> (B)	Prevalence Index = B/A = <u>2.60</u>	
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FACU species <u>20</u>	x 4 = <u>80</u>																																																																																																																																																																						
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Prevalence Index = B/A = <u>2.60</u>																																																																																																																																																																							
Remarks: (Include photo numbers here or on a separate sheet.) Hydrophytic vegetation is present. Satisfies the Prevalence Index at 2.60.																																																																																																																																																																							

SOIL

Sampling Point: DP3

[illegible]

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☒ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☒ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		
Field Observations:			
Surface Water Present?	Yes ☐ No ☒	Depth (inches):	
Water Table Present?	Yes ☐ No ☒	Depth (inches):	
Saturation Present?	Yes ☐ No ☒	Depth (inches):	
(includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			
Very dry. Wetland hydrology is indicated.			

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Midwest Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: <u>Lakeville (LVN) Airport EA</u>	City/County: <u>Lakeville/Dakota</u>	Sampling Date: <u>8/2/2022</u>
Applicant/Owner: <u>Metropolitan Airports Commission</u>	State: <u>MN</u>	Sampling Point: <u>DP4</u>
Investigator(s): <u>Brauna Hartzell, Mead & Hunt, Inc.</u>		
Section, Township, Range: <u>Section 4, T113, R20W</u>		
Landform (hillside, terrace, etc.): <u>Midslope</u>		
Local relief (concave, convex, none): <u>Convex</u>		
Slope (%): <u>5%</u>	Lat: <u>44.628477</u>	Long: <u>-93.231978</u>
		Datum: <u>WGS 84</u>
Soil Map Unit Name: <u>Marshan silty clay loam (252) (Predominantly Hydric)</u>		
NW1 classification: <u>N/A</u>		

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

Are Vegetation ☒ , Soil ☒ , or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

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

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

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Remarks: A WETS analysis of the antecedent precipitation indicates the hydrologic conditions on the site were drier than normal range at the time of investigation. Swale construction; mown but with sufficient regrowth.	

VEGETATION – Use scientific names of plants.

<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Tree Stratum</th> <th style="text-align: left;">(Plot size: <u>30 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td colspan="3" style="text-align: right;">=Total Cover</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Sapling/Shrub Stratum</th> <th style="text-align: left;">(Plot size: <u>15 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td colspan="3" style="text-align: right;">=Total Cover</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Herb Stratum</th> <th style="text-align: left;">(Plot size: <u>5 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td><u>Poa pratensis</u></td><td style="text-align: center;">35</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FAC</td></tr> <tr><td>2.</td><td><u>Trifolium pratense</u></td><td style="text-align: center;">20</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FACU</td></tr> <tr><td>3.</td><td><u>Lotus corniculatus</u></td><td style="text-align: center;">20</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FACU</td></tr> <tr><td>4.</td><td><u>Plantago major</u></td><td style="text-align: center;">15</td><td style="text-align: center;">No</td><td style="text-align: center;">FAC</td></tr> <tr><td>5.</td><td><u>Ambrosia artemisiifolia</u></td><td style="text-align: center;">5</td><td style="text-align: center;">No</td><td style="text-align: center;">FACU</td></tr> <tr><td>6.</td><td><u>Phalaris arundinacea</u></td><td style="text-align: center;">5</td><td style="text-align: center;">No</td><td style="text-align: center;">FACW</td></tr> <tr><td>7.</td><td><u>Erigeron strigosus</u></td><td style="text-align: center;">3</td><td style="text-align: center;">No</td><td style="text-align: center;">FACU</td></tr> <tr><td>8.</td><td><u>Taraxacum officinale</u></td><td style="text-align: center;">2</td><td style="text-align: center;">No</td><td style="text-align: center;">FACU</td></tr> <tr><td>9.</td><td></td><td></td><td></td><td></td></tr> <tr><td>10.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td style="text-align: center;">105</td> <td colspan="2" style="text-align: right;">=Total Cover</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Woody Vine Stratum</th> <th style="text-align: left;">(Plot size: <u>15 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td colspan="3" style="text-align: right;">=Total Cover</td> </tr> </table>	Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	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Indicator Status	1.					2.							=Total Cover			Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>50</u></td> <td>x 3 = <u>150</u></td> </tr> <tr> <td>FACU species <u>50</u></td> <td>x 4 = <u>200</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>105</u> (A)</td> <td><u>360</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.43</u></td> </tr> </table> Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0¹ <u>4</u> - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes ☐ No ☒	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>50</u>	x 3 = <u>150</u>	FACU species <u>50</u>	x 4 = <u>200</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>105</u> (A)	<u>360</u> (B)	Prevalence Index = B/A = <u>3.43</u>	
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Remarks: (Include photo numbers here or on a separate sheet.) Also, oxeye daisy. Hydrophytic vegetation is not present.																																																																																																																																																																							

SOIL

Sampling Point: DP4

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 ¹	Loc ²		
0-2	10YR 3/1	100					Loamy/Clayey	
2-6	10YR 3/1	90	10YR 5/6	10	C	M	Loamy/Clayey	Prominent redox concentrations
6-8	10YR 2/1	95	10YR 5/6	5	C	M	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ Coast Prairie Redox (A16)
☐ Histic Epipedon (A2)	☐ Iron-Manganese Masses (F12)
☐ Black Histic (A3)	☐ Red Parent Material (F21)
☐ Hydrogen Sulfide (A4)	☐ Very Shallow Dark Surface (F22)
☐ Stratified Layers (A5)	☐ Other (Explain in Remarks)
☐ 2 cm Muck (A10)	
☐ Depleted Below Dark Surface (A11)	
☐ Thick Dark Surface (A12)	
☐ Sandy Mucky Mineral (S1)	
☐ 5 cm Mucky Peat or Peat (S3)	
☐ Sandy Gleyed Matrix (S4)	
☐ Sandy Redox (S5)	
☐ Stripped Matrix (S6)	
☐ Dark Surface (S7)	
☐ Loamy Mucky Mineral (F1)	
☐ Loamy Gleyed Matrix (F2)	
☐ Depleted Matrix (F3)	
☒ Redox Dark Surface (F6)	
☐ Depleted Dark Surface (F7)	
☐ Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: <u>Compacted, rocky</u> Depth (inches): <u>8</u>	Hydric Soil Present? Yes <u>X</u> No <u> </u>
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Remarks:
Hydric soils are present. Hydric soils indicator Redox Dark Surface (F6) is satisfied.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
---	---

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

Remarks:
Wetland hydrology is neither present nor indicated. This sampling point is separated from its paired wetland sampling point (DP 3) by 12 ft with about 2 ft change in elevation.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Lakeville (LVN) Airport EA City/County: Lakeville/Dakota Sampling Date: 8/3/2022
 Applicant/Owner: Metropolitan Airports Commission State: MN Sampling Point: DP5
 Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 4, T113, R20W
 Landform (hillside, terrace, etc.): Swale Local relief (concave, convex, none): Concave
 Slope (%): <1% Lat: 44.630095 Long: -93.229869 Datum: WGS 84
 Soil Map Unit Name: Waukegan silt loam, 0 to 1 percent slopes (411A) (Non-hydric) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
 Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? 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>	

Remarks:

A WETS analysis of the antecedent precipitation indicates the hydrologic conditions on the site were drier than normal range at the time of investigation. Constructed drainage swale with meandering stream. Wetland ID=6

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
			=Total Cover	
Sapling/Shrub Stratum	(Plot size: <u>15 ft</u>)			
1.				
2.				
3.				
4.				
5.				
			=Total Cover	
Herb Stratum	(Plot size: <u>5 ft</u>)			
1.	<u>Phalaris arundinacea</u>	<u>100</u>	<u>Yes</u>	<u>FACW</u>
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
		<u>100</u>	=Total Cover	
Woody Vine Stratum	(Plot size: <u>15 ft</u>)			
1.				
2.				
			=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

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>200</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>100</u> (A)	<u>200</u> (B)
Prevalence Index = B/A = <u>2.00</u>	

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes X No

Remarks: (Include photo numbers here or on a separate sheet.)
 Hydrophytic vegetation is present.

SOIL

Sampling Point: DP5

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 ¹	Loc ²		
0-6	10YR 3/1	100					Loamy/Clayey	
6-14	10YR 3/1	95	7.5YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ Coast Prairie Redox (A16)
☐ Histic Epipedon (A2)	☐ Iron-Manganese Masses (F12)
☐ Black Histic (A3)	☐ Red Parent Material (F21)
☐ Hydrogen Sulfide (A4)	☐ Very Shallow Dark Surface (F22)
☐ Stratified Layers (A5)	☐ Other (Explain in Remarks)
☐ 2 cm Muck (A10)	
☐ Depleted Below Dark Surface (A11)	
☐ Thick Dark Surface (A12)	
☐ Sandy Mucky Mineral (S1)	
☐ 5 cm Mucky Peat or Peat (S3)	
☐ Sandy Gleyed Matrix (S4)	
☐ Sandy Redox (S5)	
☐ Stripped Matrix (S6)	
☐ Dark Surface (S7)	
☐ Loamy Mucky Mineral (F1)	
☐ Loamy Gleyed Matrix (F2)	
☐ Depleted Matrix (F3)	
☒ Redox Dark Surface (F6)	
☐ Depleted Dark Surface (F7)	
☐ Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: <u>Compacted</u> Depth (inches): <u>14</u>	Hydric Soil Present? Yes <u>X</u> No <u> </u>
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Remarks:
Dug to refusal. Hydric soils are present. Hydric soils indicator Redox Dark Surface (F6) is satisfied.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☒ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☒ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Heavy rain storm night before; no water present in stream channel. Rain gage at airport recorded 0.3". Wetland hydrology is present and indicated.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
 Requirement Control Symbol EXEMPT:
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Lakeville (LVN) Airport EA City/County: Lakeville/Dakota Sampling Date: 8/3/2022
 Applicant/Owner: Metropolitan Airports Commission State: MN Sampling Point: DP6
 Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 4, T113, R20W
 Landform (hillside, terrace, etc.): Midslope Local relief (concave, convex, none): Convex
 Slope (%): 5% Lat: 44.630107 Long: -93.22992 Datum: WGS 84
 Soil Map Unit Name: Waukegan silt loam, 0 to 1 percent slopes (411A) (Non-hydric) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
 Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	

Remarks:

A WETS analysis of the antecedent precipitation indicates the hydrologic conditions on the site were drier than normal range at the time of investigation. Area is mown.

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
			=Total Cover	
Sapling/Shrub Stratum	(Plot size: <u>15 ft</u>)			
1.				
2.				
3.				
4.				
5.				
			=Total Cover	
Herb Stratum	(Plot size: <u>5 ft</u>)			
1.	<u>Poa pratensis</u>	<u>50</u>	<u>Yes</u>	<u>FAC</u>
2.	<u>Lotus corniculatus</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>
3.	<u>Bromus inermis</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>
4.				
5.				
6.				
7.				
8.				
9.				
10.				
		<u>100</u>	=Total Cover	
Woody Vine Stratum	(Plot size: <u>15 ft</u>)			
1.				
2.				
			=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

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>50</u>	x 3 = <u>150</u>
FACU species <u>50</u>	x 4 = <u>200</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>100</u> (A)	<u>350</u> (B)
Prevalence Index = B/A = <u>3.50</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No X

Remarks: (Include photo numbers here or on a separate sheet.)
 Hydrophytic vegetation is not present.

SOIL

Sampling Point: DP6

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 ¹	Loc ²		
0-12	10YR 3/2	100					Loamy/Clayey	
12-16	10YR 4/3	100					Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ Coast Prairie Redox (A16)
☐ Histic Epipedon (A2)	☐ Iron-Manganese Masses (F12)
☐ Black Histic (A3)	☐ Red Parent Material (F21)
☐ Hydrogen Sulfide (A4)	☐ Very Shallow Dark Surface (F22)
☐ Stratified Layers (A5)	☐ Other (Explain in Remarks)
☐ 2 cm Muck (A10)	
☐ Depleted Below Dark Surface (A11)	
☐ Thick Dark Surface (A12)	
☐ Sandy Mucky Mineral (S1)	
☐ 5 cm Mucky Peat or Peat (S3)	
☐ Sandy Gleyed Matrix (S4)	
☐ Sandy Redox (S5)	
☐ Stripped Matrix (S6)	
☐ Dark Surface (S7)	
☐ Loamy Mucky Mineral (F1)	
☐ Loamy Gleyed Matrix (F2)	
☐ Depleted Matrix (F3)	
☐ Redox Dark Surface (F6)	
☐ Depleted Dark Surface (F7)	
☐ Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
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Remarks:
Hydric soils are not present. Does not meet hydric soils criteria.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Heavy rainstorm night before; 0.3" recorded at the airport. Wetland hydrology is neither present nor indicated. This sampling point is separated from its paired wetland sampling point (DP 5) by 12 ft with about 3 ft change in elevation.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
 Requirement Control Symbol EXEMPT:
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Lakeville (LVN) Airport EA City/County: Lakeville/Dakota Sampling Date: 8/3/2022
 Applicant/Owner: Metropolitan Airports Commission State: MN Sampling Point: DP7
 Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 4, T113, R20W
 Landform (hillside, terrace, etc.): Swale Local relief (concave, convex, none): Concave
 Slope (%): <1% Lat: 44.62948 Long: -93.229505 Datum: WGS 84
 Soil Map Unit Name: Marshan silty clay loam (252) (Predominantly Hydric) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
 Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? 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>	

Remarks:

A WETS analysis of the antecedent precipitation indicates the hydrologic conditions on the site were drier than normal range at the time of investigation. Drainage swale with two culverts. Area mown, swale construction. Wetland ID=7

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
		=Total Cover		
Sapling/Shrub Stratum	(Plot size: <u>15 ft</u>)			
1.				
2.				
3.				
4.				
5.				
		=Total Cover		
Herb Stratum	(Plot size: <u>5 ft</u>)			
1.	<u>Polygonum aviculare</u>	<u>40</u>	<u>Yes</u>	<u>FAC</u>
2.	<u>Poa pratensis</u>	<u>25</u>	<u>Yes</u>	<u>FAC</u>
3.	<u>Agrostis gigantea</u>	<u>15</u>	<u>No</u>	<u>FACW</u>
4.	<u>Setaria pumila</u>	<u>10</u>	<u>No</u>	<u>FAC</u>
5.	<u>Persicaria pensylvanica</u>	<u>5</u>	<u>No</u>	<u>FACW</u>
6.	<u>Ambrosia artemisiifolia</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
7.				
8.				
9.				
10.				
		<u>100</u>	=Total Cover	
Woody Vine Stratum	(Plot size: <u>15 ft</u>)			
1.				
2.				
		=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>20</u>	x 2 = <u>40</u>
FAC species <u>75</u>	x 3 = <u>225</u>
FACU species <u>5</u>	x 4 = <u>20</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>100</u> (A)	<u>285</u> (B)
Prevalence Index = B/A = <u>2.85</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes X No

Remarks: (Include photo numbers here or on a separate sheet.)
 Also, Hordeum jubatum and Carex sp.. Boundary placed at toeslope. Hydrophytic vegetation is present.

SOIL

Sampling Point: DP7

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 ¹	Loc ²		
0-12	10YR 5/1	100					Loamy/Clayey	small pebbles; fill material
12-18	10YR 4/2	95	7.5YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ Coast Prairie Redox (A16)
☐ Histic Epipedon (A2)	☐ Iron-Manganese Masses (F12)
☐ Black Histic (A3)	☐ Red Parent Material (F21)
☐ Hydrogen Sulfide (A4)	☐ Very Shallow Dark Surface (F22)
☐ Stratified Layers (A5)	☐ Other (Explain in Remarks)
☐ 2 cm Muck (A10)	
☐ Depleted Below Dark Surface (A11)	
☐ Thick Dark Surface (A12)	
☐ Sandy Mucky Mineral (S1)	
☐ 5 cm Mucky Peat or Peat (S3)	
☐ Sandy Gleyed Matrix (S4)	
☐ Sandy Redox (S5)	
☐ Stripped Matrix (S6)	
☐ Dark Surface (S7)	
☐ Loamy Mucky Mineral (F1)	
☐ Loamy Gleyed Matrix (F2)	
☒ Depleted Matrix (F3)	
☐ Redox Dark Surface (F6)	
☐ Depleted Dark Surface (F7)	
☐ Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☒ No ☐
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Remarks:
Hydric soils are present. Hydric soils indicator Depleted Matrix (F3) is satisfied.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☒ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☒ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No ☐ Depth (inches): 3 (includes capillary fringe)	Wetland Hydrology Present? Yes ☒ No ☐
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Rainstorm night before; 0.3" recorded at airport, saturation from rain, no water table observed. Some standing water in other parts of wetland. Wetland hydrology is present and indicated.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Lakeville (LVN) Airport EA City/County: Lakeville/Dakota Sampling Date: 8/3/2022
 Applicant/Owner: Metropolitan Airports Commission State: MN Sampling Point: DP8
 Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 4, T113, R20W
 Landform (hillside, terrace, etc.): Midslope Local relief (concave, convex, none): Convex
 Slope (%): 3-5% Lat: 44.629461 Long: -93.229537 Datum: WGS 84
 Soil Map Unit Name: Marshan silty clay loam (252) (Predominantly Hydric) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
 Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: A WETS analysis of the antecedent precipitation indicates the hydrologic conditions on the site were drier than normal range at the time of investigation. Swale construction and altered hydrology.	

VEGETATION – Use scientific names of plants.

<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Tree Stratum</th> <th style="text-align: left;">(Plot size: <u>30 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr> <td colspan="2"></td> <td align="right" colspan="3">=Total Cover</td> </tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Sapling/Shrub Stratum</th> <th style="text-align: left;">(Plot size: <u>15 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr> <td colspan="2"></td> <td align="right" colspan="3">=Total Cover</td> </tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Herb Stratum</th> <th style="text-align: left;">(Plot size: <u>5 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td><u>Poa pratensis</u></td><td align="center">95</td><td align="center">Yes</td><td align="center">FAC</td></tr> <tr><td>2.</td><td><u>Agrostis gigantea</u></td><td align="center">3</td><td align="center">No</td><td align="center">FACW</td></tr> <tr><td>3.</td><td><u>Taraxacum officinale</u></td><td align="center">2</td><td align="center">No</td><td align="center">FACU</td></tr> <tr><td>4.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>6.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>7.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>8.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>9.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>10.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr> <td colspan="2"></td> <td align="right">100</td> <td align="right" colspan="2">=Total Cover</td> </tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Woody Vine Stratum</th> <th style="text-align: left;">(Plot size: <u>15 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr> <td colspan="2"></td> <td align="right" colspan="3">=Total Cover</td> </tr> </table>	Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	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Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>3</u>	x 2 = <u>6</u>	FAC species <u>95</u>	x 3 = <u>285</u>	FACU species <u>2</u>	x 4 = <u>8</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>100</u> (A)	<u>299</u> (B)	Prevalence Index = B/A = <u>2.99</u>	
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Remarks: (Include photo numbers here or on a separate sheet.) Hydrophytic vegetation is present.																																																																																																																																																																							

SOIL

Sampling Point: DP8

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 ¹	Loc ²		
0-12	10YR 3/1	100					Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: ☐ Histosol (A1) ☐ Sandy Gleyed Matrix (S4) ☐ Histic Epipedon (A2) ☐ Sandy Redox (S5) ☐ Black Histic (A3) ☐ Stripped Matrix (S6) ☐ Hydrogen Sulfide (A4) ☐ Dark Surface (S7) ☐ Stratified Layers (A5) ☐ Loamy Mucky Mineral (F1) ☐ 2 cm Muck (A10) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Below Dark Surface (A11) ☐ Depleted Matrix (F3) ☐ Thick Dark Surface (A12) ☐ Redox Dark Surface (F6) ☐ Sandy Mucky Mineral (S1) ☐ Depleted Dark Surface (F7) ☐ 5 cm Mucky Peat or Peat (S3) ☐ Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: ☐ Coast Prairie Redox (A16) ☐ Iron-Manganese Masses (F12) ☐ Red Parent Material (F21) ☐ Very Shallow Dark Surface (F22) ☐ Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
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Restrictive Layer (if observed): Type: <u> </u> Compacted Depth (inches): <u> </u> 12	Hydric Soil Present? Yes <u> </u> No <u> X </u>
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Remarks:
Dug to refusal. Hydric soils are not present. Does not meet hydric soils criteria.

HYDROLOGY

Wetland Hydrology Indicators:			
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Rainstorm night before; 0.3" recorded at airport - soils still very dry and compacted. Wetland hydrology is neither present nor indicated. This sampling point is separated from its paired wetland sampling point (DP 7) by 8 ft with about 2 ft change in elevation.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
 Requirement Control Symbol EXEMPT:
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Lakeville (LVN) Airport EA City/County: Lakeville/Dakota Sampling Date: 8/3/2022
 Applicant/Owner: Metropolitan Airports Commission State: MN Sampling Point: DP9
 Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 4, T113, R20W
 Landform (hillside, terrace, etc.): Swale/drainageway Local relief (concave, convex, none): Concave
 Slope (%): <1% Lat: 44.629693 Long: -93.236853 Datum: WGS 84
 Soil Map Unit Name: Waukegan silt loam, 0 to 1 percent slopes (411A) (Non-hydric) NWI classification: PEM1Ad

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
 Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? 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>	

Remarks:

A WETS analysis of the antecedent precipitation indicates the hydrologic conditions on the site were drier than normal range at the time of investigation. DP within constructed stream corridor; invasive vegetation, artificial hydrology. Wetland ID=5

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
			=Total Cover	
Sapling/Shrub Stratum	(Plot size: <u>15 ft</u>)			
1.				
2.				
3.				
4.				
5.				
			=Total Cover	
Herb Stratum	(Plot size: <u>5 ft</u>)			
1.	<u>Phalaris arundinacea</u>	<u>90</u>	<u>Yes</u>	<u>FACW</u>
2.	<u>Typha angustifolia</u>	<u>10</u>	<u>No</u>	<u>OBL</u>
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
		<u>100</u>	=Total Cover	
Woody Vine Stratum	(Plot size: <u>15 ft</u>)			
1.	<u>Echinocystis lobata</u>	<u>25</u>	<u>Yes</u>	<u>FACW</u>
2.				
		<u>25</u>	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>10</u>	x 1 = <u>10</u>
FACW species <u>115</u>	x 2 = <u>230</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>125</u> (A)	<u>240</u> (B)
Prevalence Index = B/A = <u>1.92</u>	

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes X No

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

Dead cattail stalks, also Rumex crispus. DP at edge of stream channel. Hydrophytic vegetation is present.

SOIL

Sampling Point: DP9

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 ¹	Loc ²		
0-4	10YR 3/1	100					Loamy/Clayey	
4-12	10YR 3/1	90	10YR 6/6	10	C	M	Loamy/Clayey	Prominent redox concentrations
12-18	10YR 3/1	97	10YR 6/6	3	C	M	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ Coast Prairie Redox (A16)
☐ Histic Epipedon (A2)	☐ Iron-Manganese Masses (F12)
☐ Black Histic (A3)	☐ Red Parent Material (F21)
☐ Hydrogen Sulfide (A4)	☐ Very Shallow Dark Surface (F22)
☐ Stratified Layers (A5)	☐ Other (Explain in Remarks)
☐ 2 cm Muck (A10)	
☐ Depleted Below Dark Surface (A11)	
☐ Thick Dark Surface (A12)	
☐ Sandy Mucky Mineral (S1)	
☐ 5 cm Mucky Peat or Peat (S3)	
☐ Sandy Gleyed Matrix (S4)	
☐ Sandy Redox (S5)	
☐ Stripped Matrix (S6)	
☐ Dark Surface (S7)	
☐ Loamy Mucky Mineral (F1)	
☐ Loamy Gleyed Matrix (F2)	
☐ Depleted Matrix (F3)	
☒ Redox Dark Surface (F6)	
☐ Depleted Dark Surface (F7)	
☐ Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☒ No ☐
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Remarks:
Hydric soils are present. Hydric soils indicator Redox Dark Surface (F6) is satisfied.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
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☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? Yes ☐ No ☒ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes ☒ No ☐
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Rainstorm night before, 0.3" recorded at the airport. No standing water observed. Wetland hydrology is indicated.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Lakeville (LVN) Airport EA City/County: Lakeville/Dakota Sampling Date: 8/3/2022
 Applicant/Owner: Metropolitan Airports Commission State: MN Sampling Point: DP10
 Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 4, T113, R20W
 Landform (hillside, terrace, etc.): Midslope Local relief (concave, convex, none): convex
 Slope (%): 3-5% Lat: 44.629712 Long: -93.23693 Datum: WGS 84
 Soil Map Unit Name: Waukegan silt loam, 0 to 1 percent slopes (411A) (Non-hydric) NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
 Are Vegetation X, Soil X, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: A WETS analysis of the antecedent precipitation indicates the hydrologic conditions on the site were drier than normal range at the time of investigation. Area mown regularly; swale construction.	

VEGETATION – Use scientific names of plants.

<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Tree Stratum</th> <th style="text-align: left;">(Plot size: <u>30 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr> <td colspan="2"></td> <td align="right" colspan="3">=Total Cover</td> </tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Sapling/Shrub Stratum</th> <th style="text-align: left;">(Plot size: <u>15 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr> <td colspan="2"></td> <td align="right" colspan="3">=Total Cover</td> </tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Herb Stratum</th> <th style="text-align: left;">(Plot size: <u>5 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td><u>Poa pratensis</u></td><td align="center">85</td><td align="center">Yes</td><td align="center">FAC</td></tr> <tr><td>2.</td><td><u>Lotus corniculatus</u></td><td align="center">10</td><td align="center">No</td><td align="center">FACU</td></tr> <tr><td>3.</td><td><u>Rumex crispus</u></td><td align="center">5</td><td align="center">No</td><td align="center">FAC</td></tr> <tr><td>4.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>6.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>7.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>8.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>9.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>10.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr> <td colspan="2"></td> <td align="right">100</td> <td align="right" colspan="2">=Total Cover</td> </tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Woody Vine Stratum</th> <th style="text-align: left;">(Plot size: <u>15 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr> <td colspan="2"></td> <td align="right" colspan="3">=Total Cover</td> </tr> </table>	Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	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Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	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>90</u>	x 3 = <u>270</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>100</u> (A)	<u>310</u> (B)	Prevalence Index = B/A = <u>3.10</u>	
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Remarks: (Include photo numbers here or on a separate sheet.) Very dry. Hydrophytic vegetation is present.																																																																																																																																																																							

SOIL

Sampling Point: DP10

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 ¹	Loc ²		
0-14	10YR 3/1	100					Loamy/Clayey	
14-16	10YR 5/3	100					Sandy	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ Coast Prairie Redox (A16)
☐ Histic Epipedon (A2)	☐ Iron-Manganese Masses (F12)
☐ Black Histic (A3)	☐ Red Parent Material (F21)
☐ Hydrogen Sulfide (A4)	☐ Very Shallow Dark Surface (F22)
☐ Stratified Layers (A5)	☐ Other (Explain in Remarks)
☐ 2 cm Muck (A10)	
☐ Depleted Below Dark Surface (A11)	
☐ Thick Dark Surface (A12)	
☐ Sandy Mucky Mineral (S1)	
☐ 5 cm Mucky Peat or Peat (S3)	
☐ Sandy Gleyed Matrix (S4)	
☐ Sandy Redox (S5)	
☐ Stripped Matrix (S6)	
☐ Dark Surface (S7)	
☐ Loamy Mucky Mineral (F1)	
☐ Loamy Gleyed Matrix (F2)	
☐ Depleted Matrix (F3)	
☐ Redox Dark Surface (F6)	
☐ Depleted Dark Surface (F7)	
☐ Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: <u> Compacted </u> Depth (inches): <u> 16 </u>	Hydric Soil Present? Yes <u> </u> No <u> X </u>
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Remarks:
Dug to refusal. Hydric soils are not present. Does not meet hydric soils criteria.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> X </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Rainstorm night before, 0.3" recorded at the Airport. Wetland hydrology is neither present nor indicated. This sampling point is separated from its paired wetland sampling point (DP 9) by 15-18 ft with about 3 ft change in elevation.

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Midwest Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: <u>Lakeville (LVN) Airport EA</u>	City/County: <u>Lakeville/Dakota</u>	Sampling Date: <u>8/3/2022</u>
Applicant/Owner: <u>Metropolitan Airports Commission</u>	State: <u>MN</u>	Sampling Point: <u>DP11</u>
Investigator(s): <u>Brauna Hartzell, Mead & Hunt, Inc.</u>	Section, Township, Range: <u>Section 4, T113, R20W</u>	
Landform (hillside, terrace, etc.): <u>Basin</u>	Local relief (concave, convex, none): <u>Concave</u>	
Slope (%): <u><1%</u> Lat: <u>44.628196</u>	Long: <u>-93.232681</u>	Datum: <u>WGS 84</u>
Soil Map Unit Name: <u>Marshan silty clay loam (252) (Predominantly Hydric)</u>	NWI classification: <u>PEM1A</u>	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u> </u> No <u>X</u> (If no, explain in Remarks.)		
Are Vegetation <u>X</u> , Soil <u>X</u> , or Hydrology <u>X</u> significantly disturbed? Are "Normal Circumstances" present? Yes <u>X</u> No <u> </u>		
Are Vegetation <u> </u> , Soil <u> </u> , or Hydrology <u> </u> 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: A WETS analysis of the antecedent precipitation indicates the hydrologic conditions on the site were drier than normal range at the time of investigation. Detention area; area is mown regularly, constructed detention area with culvert inputs and one outlet culvert. Wetland ID=8	

VEGETATION – Use scientific names of plants.

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Remarks: (Include photo numbers here or on a separate sheet.) Also, Eleocharis obtusa, Persicaria pensylvanica. Hydrophytic vegetation is present.																																																																																																																																																																							

SOIL

Sampling Point: DP11

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 ¹	Loc ²		
0-3	10YR 2/1	100					Loamy/Clayey	
3-9	10YR 4/2	95	7.5YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations
9-18	10YR 4/4						Sandy	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ Coast Prairie Redox (A16)
☐ Histic Epipedon (A2)	☐ Iron-Manganese Masses (F12)
☐ Black Histic (A3)	☐ Red Parent Material (F21)
☐ Hydrogen Sulfide (A4)	☐ Very Shallow Dark Surface (F22)
☐ Stratified Layers (A5)	☐ Other (Explain in Remarks)
☐ 2 cm Muck (A10)	
☒ Depleted Below Dark Surface (A11)	
☐ Thick Dark Surface (A12)	
☐ Sandy Mucky Mineral (S1)	
☐ 5 cm Mucky Peat or Peat (S3)	
☐ Sandy Gleyed Matrix (S4)	
☐ Sandy Redox (S5)	
☐ Stripped Matrix (S6)	
☐ Dark Surface (S7)	
☐ Loamy Mucky Mineral (F1)	
☐ Loamy Gleyed Matrix (F2)	
☒ Depleted Matrix (F3)	
☐ Redox Dark Surface (F6)	
☐ Depleted Dark Surface (F7)	
☐ Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☒ No ☐
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Remarks:
Hydric soils are present. Hydric soils indicators Depleted Below Dark Surface (A11) and Depleted Matrix (F3) are satisfied.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1)	☒ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☒ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☒ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☒ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? Yes ☐ No ☒ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes ☒ No ☐
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Inundation seen in most of wetland on June 2020 Google Earth aerial image and saturation seen on June 2021; near data points, assume saturation

Remarks:
Rainfall night before, 0.3" recorded at the Airport. Wetland hydrology is present and indicated.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Lakeville (LVN) Airport EA City/County: Lakeville/Dakota Sampling Date: 8/3/2022
 Applicant/Owner: Metropolitan Airports Commission State: MN Sampling Point: DP12
 Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 4, T113, R20W
 Landform (hillside, terrace, etc.): Midslope Local relief (concave, convex, none): Convex
 Slope (%): 3-5% Lat: 44.628147 Long: -93.232712 Datum: WGS 84
 Soil Map Unit Name: Waukegan silt loam, 0 to 1 percent slopes (411A) (Non-hydric) NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
 Are Vegetation X, Soil X, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: A WETS analysis of the antecedent precipitation indicates the hydrologic conditions on the site were drier than normal range at the time of investigation. Area mown regularly, detention basin construction.	

VEGETATION – Use scientific names of plants.

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Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	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>30</u>	x 3 = <u>90</u>	FACU species <u>65</u>	x 4 = <u>260</u>	UPL species <u>5</u>	x 5 = <u>25</u>	Column Totals: <u>100</u> (A)	<u>375</u> (B)	Prevalence Index = B/A = <u>3.75</u>	
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Remarks: (Include photo numbers here or on a separate sheet.) Hydrophytic vegetation is not present. Fails Prevalence Index at 3.75.																																																																																																																																																																							

SOIL

Sampling Point: DP12

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 ¹	Loc ²		
0-16	10YR 3/1	100					Loamy/Clayey	with small rocks

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ Coast Prairie Redox (A16)
☐ Histic Epipedon (A2)	☐ Iron-Manganese Masses (F12)
☐ Black Histic (A3)	☐ Red Parent Material (F21)
☐ Hydrogen Sulfide (A4)	☐ Very Shallow Dark Surface (F22)
☐ Stratified Layers (A5)	☐ Other (Explain in Remarks)
☐ 2 cm Muck (A10)	
☐ Depleted Below Dark Surface (A11)	
☐ Thick Dark Surface (A12)	
☐ Sandy Mucky Mineral (S1)	
☐ 5 cm Mucky Peat or Peat (S3)	
☐ Sandy Gleyed Matrix (S4)	
☐ Sandy Redox (S5)	
☐ Stripped Matrix (S6)	
☐ Dark Surface (S7)	
☐ Loamy Mucky Mineral (F1)	
☐ Loamy Gleyed Matrix (F2)	
☐ Depleted Matrix (F3)	
☐ Redox Dark Surface (F6)	
☐ Depleted Dark Surface (F7)	
☐ Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: ☐ Compacted Depth (inches): ☐ 16	Hydric Soil Present? Yes ☐ No ☒
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Remarks:
Dry to refusal. Hydric soils are not present. Does not meet hydric soils criteria.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): ☐ Water Table Present? Yes ☐ No ☒ Depth (inches): ☐ Saturation Present? Yes ☐ No ☒ Depth (inches): ☐ (includes capillary fringe)	Wetland Hydrology Present? Yes ☐ No ☒
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Rainfall night before, 0.3" recorded at the Airport. Wetland hydrology is neither present nor indicated. This sampling point is separated from its paired wetland sampling point (DP 11) by 15 ft with about 3 ft change in elevation.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Lakeville (LVN) Airport EA City/County: Lakeville/Dakota Sampling Date: 8/3/2022
 Applicant/Owner: Metropolitan Airports Commission State: MN Sampling Point: DP13
 Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 4, T113, R20W
 Landform (hillside, terrace, etc.): Basin Local relief (concave, convex, none): Concave
 Slope (%): <1% Lat: 44.627954 Long: -93.231649 Datum: WGS 84
 Soil Map Unit Name: Waukegan silt loam, 0 to 1 percent slopes (411A) (Non-hydric) NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
 Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? 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>	

Remarks:

A WETS analysis of the antecedent precipitation indicates the hydrologic conditions on the site were drier than normal range at the time of investigation. Constructed detention area, area mown occasionally. Wetland ID=9

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
			=Total Cover	
Sapling/Shrub Stratum	(Plot size: <u>15 ft</u>)			
1.				
2.				
3.				
4.				
5.				
			=Total Cover	
Herb Stratum	(Plot size: <u>5 ft</u>)			
1.	<u>Setaria pumila</u>	<u>53</u>	<u>Yes</u>	<u>FAC</u>
2.	<u>Persicaria pensylvanica</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>
3.	<u>Phalaris arundinacea</u>	<u>10</u>	<u>No</u>	<u>FACW</u>
4.	<u>Schoenoplectus tabernaemontani</u>	<u>5</u>	<u>No</u>	<u>OBL</u>
5.	<u>Ambrosia artemisiifolia</u>	<u>2</u>	<u>No</u>	<u>FACU</u>
6.				
7.				
8.				
9.				
10.				
		<u>100</u>	=Total Cover	
Woody Vine Stratum	(Plot size: <u>15 ft</u>)			
1.				
2.				
			=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>5</u>	x 1 = <u>5</u>
FACW species <u>40</u>	x 2 = <u>80</u>
FAC species <u>53</u>	x 3 = <u>159</u>
FACU species <u>2</u>	x 4 = <u>8</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>100</u> (A)	<u>252</u> (B)
Prevalence Index = B/A = <u>2.52</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes X No

Remarks: (Include photo numbers here or on a separate sheet.)
 Hydrophytic vegetation is present.

SOIL

Sampling Point: DP13

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 ¹	Loc ²		
0-4	10YR 2/1	100					Loamy/Clayey	
4-14	10YR 3/1	90	10YR 4/6	10	C	M	Loamy/Clayey	Prominent redox concentrations
14-18	10YR 3/2	100					Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ Coast Prairie Redox (A16)
☐ Histic Epipedon (A2)	☐ Iron-Manganese Masses (F12)
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☐ Stratified Layers (A5)	☐ Other (Explain in Remarks)
☐ 2 cm Muck (A10)	
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☐ Depleted Matrix (F3)	
☒ Redox Dark Surface (F6)	
☐ Depleted Dark Surface (F7)	
☐ Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☒ No ☐
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Remarks:
Hydric soils are present. Hydric soils indicator Redox Dark Surface (F6) is satisfied.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
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☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? Yes ☐ No ☒ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes ☒ No ☐
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Saturation present around a core area of inundation seen on June 2020 Google Earth aerial image; saturation on June 2021 image

Remarks:
Rainfall night before, 0.3" recorded at Airport. Wetland hydrology is present and indicated.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Lakeville (LVN) Airport EA City/County: Lakeville/Dakota Sampling Date: 8/3/2022
 Applicant/Owner: Metropolitan Airports Commission State: MN Sampling Point: DP14
 Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 4, T113, R20W
 Landform (hillside, terrace, etc.): Basin Local relief (concave, convex, none): Concave
 Slope (%): <1% Lat: 44.627916 Long: -93.231668 Datum: WGS 84
 Soil Map Unit Name: Waukegan silt loam, 0 to 1 percent slopes (411A) (Non-hydric) NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
 Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</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> </u> No <u>X</u>
Remarks: A WETS analysis of the antecedent precipitation indicates the hydrologic conditions on the site were drier than normal range at the time of investigation. Construction detention area.	

VEGETATION – Use scientific names of plants.

<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Tree Stratum</th> <th style="text-align: left;">(Plot size: <u>30 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr> <td colspan="2"></td> <td align="right" colspan="3">=Total Cover</td> </tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Sapling/Shrub Stratum</th> <th style="text-align: left;">(Plot size: <u>15 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr> <td colspan="2"></td> <td align="right" colspan="3">=Total Cover</td> </tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Herb Stratum</th> <th style="text-align: left;">(Plot size: <u>5 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td><u>Ambrosia artemisiifolia</u></td><td align="center">55</td><td align="center">Yes</td><td align="center">FACU</td></tr> <tr><td>2.</td><td><u>Setaria pumila</u></td><td align="center">15</td><td align="center">No</td><td align="center">FAC</td></tr> <tr><td>3.</td><td><u>Taraxacum officinale</u></td><td align="center">10</td><td align="center">No</td><td align="center">FACU</td></tr> <tr><td>4.</td><td><u>Trifolium repens</u></td><td align="center">5</td><td align="center">No</td><td align="center">FACU</td></tr> <tr><td>5.</td><td><u>Lotus corniculatus</u></td><td align="center">5</td><td align="center">No</td><td align="center">FACU</td></tr> <tr><td>6.</td><td><u>Plantago major</u></td><td align="center">5</td><td align="center">No</td><td align="center">FAC</td></tr> <tr><td>7.</td><td><u>Salix pedicellaris</u></td><td align="center">5</td><td align="center">No</td><td align="center">FACW</td></tr> <tr><td>8.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>9.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>10.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr> <td colspan="2"></td> <td align="right">100</td> <td align="center" colspan="2">=Total Cover</td> </tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Woody Vine Stratum</th> <th style="text-align: left;">(Plot size: <u>15 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr> <td colspan="2"></td> <td align="right" colspan="3">=Total Cover</td> </tr> </table>	Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	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Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>75</u>	x 4 = <u>300</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>100</u> (A)	<u>370</u> (B)	Prevalence Index = B/A = <u>3.70</u>	
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Remarks: (Include photo numbers here or on a separate sheet.) Salix <1m. Hydrophytic vegetation is not present.																																																																																																																																																																							

SOIL

Sampling Point: DP14

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 ¹	Loc ²		
0-8	10YR 2/1	100					Loamy/Clayey	
8-10	7.5YR 4/6	100					Loamy/Clayey	
10-16	10YR 3/1	100					Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: ☐ Histosol (A1) ☐ Sandy Gleyed Matrix (S4) ☐ Histic Epipedon (A2) ☐ Sandy Redox (S5) ☐ Black Histic (A3) ☐ Stripped Matrix (S6) ☐ Hydrogen Sulfide (A4) ☐ Dark Surface (S7) ☐ Stratified Layers (A5) ☐ Loamy Mucky Mineral (F1) ☐ 2 cm Muck (A10) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Below Dark Surface (A11) ☐ Depleted Matrix (F3) ☐ Thick Dark Surface (A12) ☐ Redox Dark Surface (F6) ☐ Sandy Mucky Mineral (S1) ☐ Depleted Dark Surface (F7) ☐ 5 cm Mucky Peat or Peat (S3) ☐ Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: ☐ Coast Prairie Redox (A16) ☐ Iron-Manganese Masses (F12) ☐ Red Parent Material (F21) ☐ Very Shallow Dark Surface (F22) ☐ Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
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Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☐ No ☒
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Remarks:
Fill material present. Hydric soils are not present. Does not meet hydric soils criteria.

HYDROLOGY

Wetland Hydrology Indicators:			
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☒ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☒ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? Yes ☐ No ☒ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes ☒ No ☐
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Saturation present around a core area of inundation seen on June 2020 Google Earth aerial image; saturation on June 2021 image

Remarks:
Rainfall night before, 0.3" recorded at the Airport. Wetland hydrology is neither present nor indicated. This sampling point is separated from its paired wetland sampling point (DP 13) by 12 ft with little change in elevation.

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Midwest Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: <u>Lakeville (LVN) Airport EA</u>	City/County: <u>Lakeville/Dakota</u>	Sampling Date: <u>8/4/2022</u>
Applicant/Owner: <u>Metropolitan Airports Commission</u>	State: <u>MN</u>	Sampling Point: <u>DP15</u>
Investigator(s): <u>Brauna Hartzell, Mead & Hunt, Inc.</u> Section, Township, Range: <u>Section 3, T113, R20W</u>		
Landform (hillside, terrace, etc.): <u>Depressional basin</u> Local relief (concave, convex, none): <u>Concave</u>		
Slope (%): <u><1%</u> Lat: <u>44.622122</u> Long: <u>-93.214162</u> Datum: <u>WGS 84</u>		
Soil Map Unit Name: <u>Kanaranzi loam, 2 to 6 percent slopes (415B) (Non-hydric)</u> NWI classification: <u>PEM1C</u>		
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u> </u> No <u>X</u> (If no, explain in Remarks.)		
Are Vegetation <u> </u> , Soil <u> </u> , or Hydrology <u> </u> significantly disturbed? Are "Normal Circumstances" present? Yes <u>X</u> No <u> </u>		
Are Vegetation <u> </u> , Soil <u> </u> , or Hydrology <u> </u> 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: A WETS analysis of the antecedent precipitation indicates the hydrologic conditions on the site were drier than normal range at the time of investigation. Wetland ID=3	

VEGETATION – Use scientific names of plants.

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Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Total % Cover of:	Multiply by:	OBL species <u>60</u>	x 1 = <u>60</u>	FACW species <u>98</u>	x 2 = <u>196</u>	FAC species <u>52</u>	x 3 = <u>156</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>210</u> (A)	<u>412</u> (B)	Prevalence Index = B/A = <u>1.96</u>	
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Remarks: (Include photo numbers here or on a separate sheet.) Hydrophytic vegetation is present.																																																																																																																																																																							

SOIL

Sampling Point: DP15

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 ¹	Loc ²		
0-8	10YR 2/1	100					Peat	
8-10	10YR 4/1	100					Mucky Loam/Clay	
10-18	10YR 4/4	100					Sandy	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ Coast Prairie Redox (A16)
☐ Histic Epipedon (A2)	☐ Iron-Manganese Masses (F12)
☒ Black Histic (A3)	☐ Red Parent Material (F21)
☐ Hydrogen Sulfide (A4)	☐ Very Shallow Dark Surface (F22)
☐ Stratified Layers (A5)	☐ Other (Explain in Remarks)
☐ 2 cm Muck (A10)	
☐ Depleted Below Dark Surface (A11)	
☐ Thick Dark Surface (A12)	
☐ Sandy Mucky Mineral (S1)	
☐ 5 cm Mucky Peat or Peat (S3)	
☐ Sandy Gleyed Matrix (S4)	
☐ Sandy Redox (S5)	
☐ Stripped Matrix (S6)	
☐ Dark Surface (S7)	
☐ Loamy Mucky Mineral (F1)	
☐ Loamy Gleyed Matrix (F2)	
☐ Depleted Matrix (F3)	
☐ Redox Dark Surface (F6)	
☐ Depleted Dark Surface (F7)	
☐ Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☒ No ☐
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Remarks:
Hydric soils are present. Hydric soils indicator Black Histic (A3) is satisfied.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☒ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☒ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☒ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☒ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☒ No ☐ Depth (inches): 11 Saturation Present? Yes ☒ No ☐ Depth (inches): 0 (includes capillary fringe)	Wetland Hydrology Present? Yes ☒ No ☐
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Mapped wetland. Rainfall, 0.3" recorded at Airport 2 nights before. Wetland Hydrology is present and indicated.

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Midwest Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: <u>Lakeville (LVN) Airport EA</u>	City/County: <u>Lakeville/Dakota</u>	Sampling Date: <u>8/4/2022</u>
Applicant/Owner: <u>Metropolitan Airports Commission</u>	State: <u>MN</u>	Sampling Point: <u>DP16</u>
Investigator(s): <u>Brauna Hartzell, Mead & Hunt, Inc.</u>	Section, Township, Range: <u>Section 3, T113, R20W</u>	
Landform (hillside, terrace, etc.): <u>Midslope</u>	Local relief (concave, convex, none): <u>Convex</u>	
Slope (%): <u>40%</u>	Lat: <u>44.622094</u>	Long: <u>-93.214216</u>
		Datum: <u>WGS 84</u>
Soil Map Unit Name: <u>Kanaranzi loam, 2 to 6 percent slopes (415B) (Non-hydric)</u>	NW1 classification: <u>N/A</u>	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)		
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐		
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)		

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

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Remarks: A WETS analysis of the antecedent precipitation indicates the hydrologic conditions on the site were drier than normal range at the time of investigation. Very steep bank.	

VEGETATION – Use scientific names of plants.

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SOIL

Sampling Point: DP16

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 ¹	Loc ²		
0-16	10YR 4/3	100					Sandy	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: ☐ Histosol (A1) ☐ Sandy Gleyed Matrix (S4) ☐ Histic Epipedon (A2) ☐ Sandy Redox (S5) ☐ Black Histic (A3) ☐ Stripped Matrix (S6) ☐ Hydrogen Sulfide (A4) ☐ Dark Surface (S7) ☐ Stratified Layers (A5) ☐ Loamy Mucky Mineral (F1) ☐ 2 cm Muck (A10) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Below Dark Surface (A11) ☐ Depleted Matrix (F3) ☐ Thick Dark Surface (A12) ☐ Redox Dark Surface (F6) ☐ Sandy Mucky Mineral (S1) ☐ Depleted Dark Surface (F7) ☐ 5 cm Mucky Peat or Peat (S3) ☐ Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: ☐ Coast Prairie Redox (A16) ☐ Iron-Manganese Masses (F12) ☐ Red Parent Material (F21) ☐ Very Shallow Dark Surface (F22) ☐ Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
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Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☐ No ☒
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Remarks:
Hydric soils are not present. Does not meet hydric soils criteria.

HYDROLOGY

Wetland Hydrology Indicators:			
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? Yes ☐ No ☒ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes ☐ No ☒
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology is neither present nor indicated. This sampling point is separated from its paired wetland sampling point (DP 15) by about 15 ft with about 6 ft change in elevation.

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Midwest Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: <u>Lakeville (LVN) Airport EA</u>	City/County: <u>Lakeville/Dakota</u>	Sampling Date: <u>8/4/2022</u>
Applicant/Owner: <u>Metropolitan Airports Commission</u>	State: <u>MN</u>	Sampling Point: <u>DP17</u>
Investigator(s): <u>Brauna Hartzell, Mead & Hunt, Inc.</u> Section, Township, Range: <u>Section 3, T113, R20W</u>		
Landform (hillside, terrace, etc.): <u>Depressional basin</u> Local relief (concave, convex, none): <u>Concave</u>		
Slope (%): <u><1%</u> Lat: <u>44.622011</u> Long: <u>-93.214048</u> Datum: <u>WGS 84</u>		
Soil Map Unit Name: <u>Kanaranzi loam, 2 to 6 percent slopes (415B) (Non-hydric)</u> NWI classification: <u>PFO1A</u>		
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u> </u> No <u>X</u> (If no, explain in Remarks.)		
Are Vegetation <u> </u> , Soil <u> </u> , or Hydrology <u> </u> significantly disturbed? Are "Normal Circumstances" present? Yes <u>X</u> No <u> </u>		
Are Vegetation <u> </u> , Soil <u> </u> , or Hydrology <u> </u> 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: A WETS analysis of the antecedent precipitation indicates the hydrologic conditions on the site were drier than normal range at the time of investigation. Wetland ID=3	

VEGETATION – Use scientific names of plants.

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SOIL

Sampling Point: DP17

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 ¹	Loc ²		
0-4	10YR 3/1	100					Sandy	
4-10	10YR 4/1	95	7.5YR 4/6	5	C	M	Sandy	Prominent redox concentrations
10-18	10YR 5/2	95	7.5YR 4/6	5	C	M	Sandy	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ Coast Prairie Redox (A16)
☐ Histic Epipedon (A2)	☐ Iron-Manganese Masses (F12)
☐ Black Histic (A3)	☐ Red Parent Material (F21)
☐ Hydrogen Sulfide (A4)	☐ Very Shallow Dark Surface (F22)
☐ Stratified Layers (A5)	☐ Other (Explain in Remarks)
☐ 2 cm Muck (A10)	
☐ Depleted Below Dark Surface (A11)	
☐ Thick Dark Surface (A12)	
☐ Sandy Mucky Mineral (S1)	
☐ 5 cm Mucky Peat or Peat (S3)	
☐ Sandy Gleyed Matrix (S4)	
☒ Sandy Redox (S5)	
☐ Stripped Matrix (S6)	
☐ Dark Surface (S7)	
☐ Loamy Mucky Mineral (F1)	
☐ Loamy Gleyed Matrix (F2)	
☐ Depleted Matrix (F3)	
☐ Redox Dark Surface (F6)	
☐ Depleted Dark Surface (F7)	
☐ Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☒ No ☐
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Remarks:
Hydric soils are present. Hydric soils indicator Sandy Redox (S5) is satisfied. Presence of organic material masking sand particles is unconfirmed.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☒ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☒ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? Yes ☐ No ☒ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes ☒ No ☐
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology is indicated.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Lakeville (LVN) Airport EA City/County: Lakeville/Dakota Sampling Date: 8/4/2022
Applicant/Owner: Metropolitan Airports Commission State: MN Sampling Point: DP18
Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 3, T113, R20W
Landform (hillside, terrace, etc.): Shoulder Local relief (concave, convex, none): Convex
Slope (%): 2-3% Lat: 44.621972 Long: -93.214048 Datum: WGS 84
Soil Map Unit Name: Kanaranzi loam, 2 to 6 percent slopes (415B) (Non-hydric) NWI classification: N/A

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

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

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

Hydrophytic Vegetation Present? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒
Wetland Hydrology Present? Yes ☐ No ☒

Is the Sampled Area
within a Wetland? Yes ☐ No ☒

Remarks:

A WETS analysis of the antecedent precipitation indicates the hydrologic conditions on the site were drier than normal range at the time of investigation.

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
		=Total Cover		
Sapling/Shrub Stratum	(Plot size: <u>15 ft</u>)			
1.				
2.				
3.				
4.				
5.				
		=Total Cover		
Herb Stratum	(Plot size: <u>5 ft</u>)			
1.	<u>Lotus corniculatus</u>	<u>50</u>	<u>Yes</u>	<u>FACU</u>
2.	<u>Poa pratensis</u>	<u>28</u>	<u>Yes</u>	<u>FAC</u>
3.	<u>Bromus inermis</u>	<u>10</u>	<u>No</u>	<u>FACU</u>
4.	<u>Erigeron strigosus</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
5.	<u>Plantago major</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
6.	<u>Taraxacum officinale</u>	<u>2</u>	<u>No</u>	<u>FACU</u>
7.				
8.				
9.				
10.				
		<u>100</u>	=Total Cover	
Woody Vine Stratum	(Plot size: <u>15 ft</u>)			
1.				
2.				
		=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That
Are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species That
Are OBL, FACW, or FAC: 50.0% (A/B)

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>28</u>	x 3 = <u>84</u>
FACU species <u>72</u>	x 4 = <u>288</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>100</u> (A)	<u>372</u> (B)
Prevalence Index = B/A = <u>3.72</u>	

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation is not present. Fails Prevalence Index at 3.72.

SOIL

Sampling Point: DP18

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 ¹	Loc ²		
0-6	10YR 3/1	100					Loamy/Clayey	
6-8	10YR 4/4	100					Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ Coast Prairie Redox (A16)
☐ Histic Epipedon (A2)	☐ Iron-Manganese Masses (F12)
☐ Black Histic (A3)	☐ Red Parent Material (F21)
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☐ Depleted Dark Surface (F7)	
☐ Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: <u>Compacted</u> Depth (inches): <u>8</u>	Hydric Soil Present? Yes <u> </u> No <u>X</u>
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Remarks:
Soils compacted; dug to refusal. Hydric soils are not present. Does not meet hydric soils criteria.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
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☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
---	---

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

Remarks:
Wetland hydrology is neither present nor indicated. This sampling point is separated from its paired wetland sampling point (DP 17) by 12 ft with about 2 ft change in elevation.

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Midwest Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: <u>Lakeville (LVN) Airport EA</u>	City/County: <u>Lakeville/Dakota</u>	Sampling Date: <u>8/4/2022</u>
Applicant/Owner: <u>Metropolitan Airports Commission</u>	State: <u>MN</u>	Sampling Point: <u>DP19</u>
Investigator(s): <u>Brauna Hartzell, Mead & Hunt, Inc.</u>		
Section, Township, Range: <u>Section 3, T113, R20W</u>		
Landform (hillside, terrace, etc.): <u>Basin</u>		
Local relief (concave, convex, none): <u>Concave</u>		
Slope (%): <u>4%</u>	Lat: <u>44.621951</u>	Long: <u>-93.213261</u>
		Datum: <u>WGS 84</u>
Soil Map Unit Name: <u>Marshan silty clay loam (252) (Predominantly Hydric)</u>		
NW1 classification: <u>PEM1C</u>		

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

Are Vegetation ☒ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

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

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Remarks: A WETS analysis of the antecedent precipitation indicates the hydrologic conditions on the site were drier than normal range at the time of investigation. Dominance of invasive species, Agricultural runoff. Wetland ID=1	

VEGETATION – Use scientific names of plants.

<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Tree Stratum</th> <th style="text-align: left;">(Plot size: <u>30 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td colspan="3" style="text-align: right;">=Total Cover</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Sapling/Shrub Stratum</th> <th style="text-align: left;">(Plot size: <u>15 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td><u>Cornus alba</u></td><td style="text-align: center;">45</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FACW</td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td colspan="3" style="text-align: right;">45 =Total Cover</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Herb Stratum</th> <th style="text-align: left;">(Plot size: <u>5 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td><u>Phalaris arundinacea</u></td><td style="text-align: center;">78</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FACW</td></tr> <tr><td>2.</td><td><u>Carex trichocarpa</u></td><td style="text-align: center;">10</td><td style="text-align: center;">No</td><td style="text-align: center;">OBL</td></tr> <tr><td>3.</td><td><u>Typha angustifolia</u></td><td style="text-align: center;">5</td><td style="text-align: center;">No</td><td style="text-align: center;">OBL</td></tr> <tr><td>4.</td><td><u>Symphyotrichum novae-angliae</u></td><td style="text-align: center;">5</td><td style="text-align: center;">No</td><td style="text-align: center;">FACW</td></tr> <tr><td>5.</td><td><u>Eutrochium maculatum</u></td><td style="text-align: center;">2</td><td style="text-align: center;">No</td><td style="text-align: center;">FACW</td></tr> <tr><td>6.</td><td></td><td></td><td></td><td></td></tr> <tr><td>7.</td><td></td><td></td><td></td><td></td></tr> <tr><td>8.</td><td></td><td></td><td></td><td></td></tr> <tr><td>9.</td><td></td><td></td><td></td><td></td></tr> <tr><td>10.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td colspan="3" style="text-align: right;">100 =Total Cover</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Woody Vine Stratum</th> <th style="text-align: left;">(Plot size: <u>15 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td><u>Echinocystis lobata</u></td><td style="text-align: center;">10</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FACW</td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td colspan="3" style="text-align: right;">10 =Total Cover</td> </tr> </table>	Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	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Hydrophytic Vegetation Present? Yes ☒ No ☐	Total % Cover of:	Multiply by:	OBL species <u>15</u>	x 1 = <u>15</u>	FACW species <u>140</u>	x 2 = <u>280</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>155</u> (A)	<u>295</u> (B)	Prevalence Index = B/A = <u>1.90</u>	
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Remarks: (Include photo numbers here or on a separate sheet.) Also, Solidago gigantea (FACW) and Salix bebbiana (FACW). Less disturbed area dominated by C. trichocarpa. Hydrophytic vegetation is present.																																																																																																																																																																							

SOIL

Sampling Point: DP19

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 ¹	Loc ²		
0-2	10YR 2/1	100					Loamy/Clayey	
2-16	10YR 2/1	85	7.5YR 5/6	15	C	PL/M	Loamy/Clayey	Prominent redox concentrations
16-22	N 2.5/	100					Muck	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ Coast Prairie Redox (A16)
☐ Histic Epipedon (A2)	☐ Iron-Manganese Masses (F12)
☐ Black Histic (A3)	☐ Red Parent Material (F21)
☐ Hydrogen Sulfide (A4)	☐ Very Shallow Dark Surface (F22)
☐ Stratified Layers (A5)	☐ Other (Explain in Remarks)
☐ 2 cm Muck (A10)	
☐ Depleted Below Dark Surface (A11)	
☐ Thick Dark Surface (A12)	
☐ Sandy Mucky Mineral (S1)	
☐ 5 cm Mucky Peat or Peat (S3)	
☐ Sandy Gleyed Matrix (S4)	
☐ Sandy Redox (S5)	
☐ Stripped Matrix (S6)	
☐ Dark Surface (S7)	
☐ Loamy Mucky Mineral (F1)	
☐ Loamy Gleyed Matrix (F2)	
☐ Depleted Matrix (F3)	
☒ Redox Dark Surface (F6)	
☐ Depleted Dark Surface (F7)	
☐ Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☒ No ☐
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Remarks:
Hydric soils are present. Hydric soils indicator Redox Dark Surface (F6) is satisfied. Pore linings contain oxidized rhizospheres.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☒ Oxidized Rhizospheres on Living Roots (C3)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☒ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☒ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? Yes ☐ No ☒ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes ☒ No ☐
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology is indicated.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Lakeville (LVN) Airport EA City/County: Lakeville/Dakota Sampling Date: 8/4/2022
 Applicant/Owner: Metropolitan Airports Commission State: MN Sampling Point: DP20
 Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 3, T113, R20W
 Landform (hillside, terrace, etc.): Shoulder Local relief (concave, convex, none): Convex
 Slope (%): 2-3% Lat: 44.62199 Long: -93.213278 Datum: WGS 84
 Soil Map Unit Name: Marshan silty clay loam (252) (Predominantly Hydric) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
 Are Vegetation X, Soil X, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	

Remarks:

A WETS analysis of the antecedent precipitation indicates the hydrologic conditions on the site were drier than normal range at the time of investigation. DP taken at edge of corn field. Soil disturbance from plowing at edge.

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
			=Total Cover	
Sapling/Shrub Stratum	(Plot size: <u>15 ft</u>)			
1.				
2.				
3.				
4.				
5.				
			=Total Cover	
Herb Stratum	(Plot size: <u>5 ft</u>)			
1.	<u>Amaranthus hybridus</u>	<u>50</u>	<u>Yes</u>	<u>UPL</u>
2.	<u>Solidago canadensis</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>
3.	<u>Ambrosia trifida</u>	<u>5</u>	<u>No</u>	<u>FAC</u>
4.	<u>Symphytotrichum lateriflorum</u>	<u>5</u>	<u>No</u>	<u>FACW</u>
5.	<u>Silene vulgaris</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
6.				
7.				
8.				
9.				
10.				
		<u>85</u>	=Total Cover	
Woody Vine Stratum	(Plot size: <u>15 ft</u>)			
1.				
2.				
			=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>5</u>	x 2 = <u>10</u>
FAC species <u>5</u>	x 3 = <u>15</u>
FACU species <u>25</u>	x 4 = <u>100</u>
UPL species <u>50</u>	x 5 = <u>250</u>
Column Totals: <u>85</u> (A)	<u>375</u> (B)
Prevalence Index = B/A = <u>4.41</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No

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

Also, Zea may not included on vegetation list; some bare soil due to plowing and herbicide treatment. Hydrophytic vegetation is not present.

SOIL

Sampling Point: DP20

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 ¹	Loc ²		
0-14	10YR 3/1	100					Sandy	
14-22	10YR 4/1	95	7.5YR 4/4	5	C	M	Sandy	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ Coast Prairie Redox (A16)
☐ Histic Epipedon (A2)	☐ Iron-Manganese Masses (F12)
☐ Black Histic (A3)	☐ Red Parent Material (F21)
☐ Hydrogen Sulfide (A4)	☐ Very Shallow Dark Surface (F22)
☐ Stratified Layers (A5)	☐ Other (Explain in Remarks)
☐ 2 cm Muck (A10)	
☐ Depleted Below Dark Surface (A11)	
☐ Thick Dark Surface (A12)	
☐ Sandy Mucky Mineral (S1)	
☐ 5 cm Mucky Peat or Peat (S3)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
---	---

Remarks:
Hydric soils are not present. Does not meet hydric soils criteria.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology is neither present nor indicated. This sampling point is separated from its paired wetland sampling point (DP 19) by 15 ft with about 1 ft change in elevation.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Lakeville (LVN) Airport EA City/County: Lakeville/Dakota Sampling Date: 8/4/2022
 Applicant/Owner: Metropolitan Airports Commission State: MN Sampling Point: DP21
 Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 3, T113, R20W
 Landform (hillside, terrace, etc.): Flat Local relief (concave, convex, none): None
 Slope (%): 1-2% Lat: 44.622186 Long: -93.214682 Datum: WGS 84
 Soil Map Unit Name: Waukegan silt loam, 1 to 6 percent slopes (411B) (Non-hydric) NWI classification: PEM1Af
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
 Are Vegetation X, Soil X, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No X
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: A WETS analysis of the antecedent precipitation indicates the hydrologic conditions on the site were drier than normal range at the time of investigation. Farm field mapped as PEM1A. Corn plants stunted while surrounding plants are more healthy.	

VEGETATION – Use scientific names of plants.

<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Tree Stratum</th> <th style="text-align: left;">(Plot size: <u>30 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr> <td colspan="2"></td> <td align="right" colspan="3">=Total Cover</td> </tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Sapling/Shrub Stratum</th> <th style="text-align: left;">(Plot size: <u>15 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr> <td colspan="2"></td> <td align="right" colspan="3">=Total Cover</td> </tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Herb Stratum</th> <th style="text-align: left;">(Plot size: <u>5 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1. <u>Zea mays</u></td><td></td><td align="center">25</td><td align="center">Yes</td><td align="center">UPL</td></tr> <tr><td>2. <u>Crepis tectorum</u></td><td></td><td align="center">25</td><td align="center">Yes</td><td align="center">UPL</td></tr> <tr><td>3.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>6.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>7.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>8.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>9.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>10.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr> <td colspan="2"></td> <td align="right">50</td> <td align="right" colspan="2">=Total Cover</td> </tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Woody Vine Stratum</th> <th style="text-align: left;">(Plot size: <u>15 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2.</td><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr> <td colspan="2"></td> <td align="right" colspan="3">=Total Cover</td> </tr> </table>	Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	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Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	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>0</u>	x 4 = <u>0</u>	UPL species <u>50</u>	x 5 = <u>250</u>	Column Totals: <u>50</u> (A)	<u>250</u> (B)	Prevalence Index = B/A = <u>5.00</u>	
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Remarks: (Include photo numbers here or on a separate sheet.) Crepis dead from dry conditions or from spraying. Corn stunted. Hydrophytic vegetation is not present.																																																																																																																																																																							

SOIL

Sampling Point: DP21

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 ¹	Loc ²		
0-9	10YR 3/1	100					Loamy/Clayey	very rocky
9-16	10YR 5/6	100					Sandy	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ Coast Prairie Redox (A16)
☐ Histic Epipedon (A2)	☐ Iron-Manganese Masses (F12)
☐ Black Histic (A3)	☐ Red Parent Material (F21)
☐ Hydrogen Sulfide (A4)	☐ Very Shallow Dark Surface (F22)
☐ Stratified Layers (A5)	☐ Other (Explain in Remarks)
☐ 2 cm Muck (A10)	
☐ Depleted Below Dark Surface (A11)	
☐ Thick Dark Surface (A12)	
☐ Sandy Mucky Mineral (S1)	
☐ 5 cm Mucky Peat or Peat (S3)	
☐ Sandy Gleyed Matrix (S4)	
☐ Sandy Redox (S5)	
☐ Stripped Matrix (S6)	
☐ Dark Surface (S7)	
☐ Loamy Mucky Mineral (F1)	
☐ Loamy Gleyed Matrix (F2)	
☐ Depleted Matrix (F3)	
☐ Redox Dark Surface (F6)	
☐ Depleted Dark Surface (F7)	
☐ Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
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Remarks:
Soils very rocky with a thin A horizon; large stones. Hydric soils are not present. Does not meet hydric soils criteria.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
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☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology is neither present nor indicated.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Lakeville (LVN) Airport EA City/County: Lakeville/Dakota Sampling Date: 9/8/2022
 Applicant/Owner: Metropolitan Airports Commission State: MN Sampling Point: DP22
 Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 32, T114, R20W
 Landform (hillside, terrace, etc.): drainage swale Local relief (concave, convex, none): concave
 Slope (%): <1% Lat: 44.634141 Long: -93.239968 Datum: WGS 84
 Soil Map Unit Name: Waukegan silt loam, 0 to 1 percent slopes (411A) (Non-hydric) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No X (If no, explain in Remarks.)
 Are Vegetation , Soil X, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks:

A WETS analysis of the antecedent precipitation indicates the hydrologic conditions on the site were within normal range at the time of investigation. Swale construction likely has disturbed soils; perhaps from on-going erosion from rain events.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)																
1. <u>Populus deltoides</u>	<u>60</u>	<u>Yes</u>	<u>FAC</u>																	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>																	
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3. <u> </u>	<u> </u>	<u> </u>	<u> </u>																	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>																	
5. <u> </u>	<u> </u> =Total Cover	<u> </u>	<u> </u>																	
Herb Stratum (Plot size: <u>5 ft</u>)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>Melilotus officinalis</u>	<u>55</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Ambrosia trifida</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>																	
3. <u>Ambrosia artemisiifolia</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>																	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>																	
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8. <u> </u>	<u> </u>	<u> </u>	<u> </u>																	
9. <u> </u>	<u> </u>	<u> </u>	<u> </u>																	
10. <u> </u>	<u>80</u> =Total Cover	<u> </u>	<u> </u>																	
Woody Vine Stratum (Plot size: <u>15 ft</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>																
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>																	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>																	
<u> </u> =Total Cover																				

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

Hydrophytic vegetation is present. Some bare soil. Other than tree cover, vegetation is dominated by weedy annuals.

SOIL

Sampling Point: DP22

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 ¹	Loc ²		
0-3	10YR 3/1	100					Loamy/Clayey	
3-11	10YR 4/3	100					Sandy	
11-16	10YR 4/2	100					Sandy	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ Coast Prairie Redox (A16)
☐ Histic Epipedon (A2)	☐ Iron-Manganese Masses (F12)
☐ Black Histic (A3)	☐ Red Parent Material (F21)
☐ Hydrogen Sulfide (A4)	☐ Very Shallow Dark Surface (F22)
☐ Stratified Layers (A5)	☐ Other (Explain in Remarks)
☐ 2 cm Muck (A10)	
☐ Depleted Below Dark Surface (A11)	
☐ Thick Dark Surface (A12)	
☐ Sandy Mucky Mineral (S1)	
☐ 5 cm Mucky Peat or Peat (S3)	
☐ Sandy Gleyed Matrix (S4)	
☐ Sandy Redox (S5)	
☐ Stripped Matrix (S6)	
☐ Dark Surface (S7)	
☐ Loamy Mucky Mineral (F1)	
☐ Loamy Gleyed Matrix (F2)	
☐ Depleted Matrix (F3)	
☐ Redox Dark Surface (F6)	
☐ Depleted Dark Surface (F7)	
☐ Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☐ No ☒
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Remarks:
Does not meet hydric soils criteria. thin A horizon. Likely top soil stripped for either swale construction or from on-going erosion from ditch flow. Sandy soils allow infiltration but saturation seen on aerial photos on early season photos and ditch profile is 4-5 feet deep on surrounding slopes . Detention area to south to which this ditch connects is inundated on early season photos.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☒ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☒ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? Yes ☐ No ☒ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes ☒ No ☐
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Inundation on Dakota 2019, Saturation on NAIP 2019, NAIP 2017, and NAIP 2008

Remarks:
Wetland hydrology is indicated.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
 Requirement Control Symbol EXEMPT:
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Lakeville (LVN) Airport EA City/County: Lakeville/Dakota Sampling Date: 9/8/2022
 Applicant/Owner: Metropolitan Airports Commission State: MN Sampling Point: DP23
 Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: section 32, T114, R20W
 Landform (hillside, terrace, etc.): drainage swale Local relief (concave, convex, none): concave
 Slope (%): <1% Lat: 44.634297 Long: -93.240078 Datum: WGS 84
 Soil Map Unit Name: Cylinder loam, 0 to 2 percent slopes (129) (Predominantly Non-hydric) NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil X, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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: A WETS analysis of the antecedent precipitation indicates the hydrologic conditions on the site were within normal range at the time of investigation. Sampling point taken at edge of drainage swale where more a deeper soil profile could be found.	

VEGETATION – Use scientific names of plants.

<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Tree Stratum</th> <th style="text-align: center;">(Plot size: <u>30 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1. <u>Populus deltoides</u></td><td></td><td style="text-align: center;">30</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FAC</td></tr> <tr><td>2. <u> </u></td><td></td><td></td><td></td><td></td></tr> <tr><td>3. <u> </u></td><td></td><td></td><td></td><td></td></tr> <tr><td>4. <u> </u></td><td></td><td></td><td></td><td></td></tr> <tr><td>5. <u> </u></td><td></td><td></td><td></td><td></td></tr> <tr><td colspan="2"></td><td style="text-align: center;">30</td><td colspan="2" style="text-align: center;">=Total Cover</td></tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Sapling/Shrub Stratum</th> <th style="text-align: center;">(Plot size: <u>15 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1. <u> </u></td><td></td><td></td><td></td><td></td></tr> <tr><td>2. <u> </u></td><td></td><td></td><td></td><td></td></tr> <tr><td>3. <u> </u></td><td></td><td></td><td></td><td></td></tr> <tr><td>4. <u> </u></td><td></td><td></td><td></td><td></td></tr> <tr><td>5. <u> </u></td><td></td><td></td><td></td><td></td></tr> <tr><td colspan="2"></td><td></td><td></td><td></td></tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Herb Stratum</th> <th style="text-align: center;">(Plot size: <u>5 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1. <u>Ambrosia trifida</u></td><td></td><td style="text-align: center;">40</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FAC</td></tr> <tr><td>2. <u>Phalaris arundinacea</u></td><td></td><td style="text-align: center;">20</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FACW</td></tr> <tr><td>3. <u>Rumex crispus</u></td><td></td><td style="text-align: center;">10</td><td style="text-align: center;">No</td><td style="text-align: center;">FAC</td></tr> <tr><td>4. <u>Erigeron annuus</u></td><td></td><td style="text-align: center;">5</td><td style="text-align: center;">No</td><td style="text-align: center;">FACU</td></tr> <tr><td>5. <u>Potentilla norvegica</u></td><td></td><td style="text-align: center;">5</td><td style="text-align: center;">No</td><td style="text-align: center;">FAC</td></tr> <tr><td>6. <u>Melilotus officinalis</u></td><td></td><td style="text-align: center;">2</td><td style="text-align: center;">No</td><td style="text-align: center;">FACU</td></tr> <tr><td>7. <u> </u></td><td></td><td></td><td></td><td></td></tr> <tr><td>8. <u> </u></td><td></td><td></td><td></td><td></td></tr> <tr><td>9. <u> </u></td><td></td><td></td><td></td><td></td></tr> <tr><td>10. <u> </u></td><td></td><td></td><td></td><td></td></tr> <tr><td colspan="2"></td><td style="text-align: center;">82</td><td colspan="2" style="text-align: center;">=Total Cover</td></tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Woody Vine Stratum</th> <th style="text-align: center;">(Plot size: <u>15 ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1. <u> </u></td><td></td><td></td><td></td><td></td></tr> <tr><td>2. <u> </u></td><td></td><td></td><td></td><td></td></tr> <tr><td colspan="2"></td><td></td><td></td><td></td></tr> </table>	Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	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Indicator Status	1. <u> </u>					2. <u> </u>										Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) Prevalence Index worksheet: <table style="width:100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>20</u></td> <td>x 2 = <u>40</u></td> </tr> <tr> <td>FAC species <u>85</u></td> <td>x 3 = <u>255</u></td> </tr> <tr> <td>FACU species <u>7</u></td> <td>x 4 = <u>28</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>112</u> (A)</td> <td><u>323</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.88</u></td> </tr> </table> Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index is ≤3.0¹ <u> </u> 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>20</u>	x 2 = <u>40</u>	FAC species <u>85</u>	x 3 = <u>255</u>	FACU species <u>7</u>	x 4 = <u>28</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>112</u> (A)	<u>323</u> (B)	Prevalence Index = B/A = <u>2.88</u>	
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Remarks: (Include photo numbers here or on a separate sheet.) Hydrophytic vegetation is present. Some bare soil is present. Mostly weedy annuals; Carex sp. nearby in wetland.																																																																																																																																																																							

SOIL

Sampling Point: DP23

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 ¹	Loc ²		
0-6	10YR 3/2	100					Loamy/Clayey	
6-14	10YR 3/2	95	7.5YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations
14-18	10YR 3/2	98	7.5YR 4/6	2	C	M	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1)	☐ Coast Prairie Redox (A16)
☐ Histic Epipedon (A2)	☐ Iron-Manganese Masses (F12)
☐ Black Histic (A3)	☐ Red Parent Material (F21)
☐ Hydrogen Sulfide (A4)	☐ Very Shallow Dark Surface (F22)
☐ Stratified Layers (A5)	☐ Other (Explain in Remarks)
☐ 2 cm Muck (A10)	
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☐ Sandy Mucky Mineral (S1)	
☐ 5 cm Mucky Peat or Peat (S3)	
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☐ Depleted Matrix (F3)	
☒ Redox Dark Surface (F6)	
☐ Depleted Dark Surface (F7)	
☐ Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☒ No ☐
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Remarks:
Hydric soils are present. Hydric soils indicator Redox Dark Surface (F6) is satisfied. Soils very dry.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
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☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? Yes ☐ No ☒ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes ☒ No ☐
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Inundation on Dakota 2019, Saturation on NAIP 2019, NAIP 2017, and NAIP 2008

Remarks:
Wetland hydrology is indicated.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
 Requirement Control Symbol EXEMPT:
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Lakeville (LVN) Airport EA City/County: Lakeville/Dakota Sampling Date: 9/8/2022
 Applicant/Owner: Metropolitan Airports Commission State: MN Sampling Point: DP24
 Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 32, T114, R20W
 Landform (hillside, terrace, etc.): midslope Local relief (concave, convex, none): convex
 Slope (%): 3-5% Lat: 44.634282 Long: -93.240107 Datum: WGS 84
 Soil Map Unit Name: Cylinder loam, 0 to 2 percent slopes (129) (Predominantly Non-hydric) NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: A WETS analysis of the antecedent precipitation indicates the hydrologic conditions on the site were within normal range at the time of investigation. Sampling point taken on slope below farm field.	

VEGETATION – Use scientific names of plants.

<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width:35%;">Tree Stratum</th> <th style="width:15%;">(Plot size: <u>30 ft</u>)</th> <th style="width:15%;">Absolute % Cover</th> <th style="width:15%;">Dominant Species?</th> <th style="width:10%;">Indicator Status</th> </tr> <tr><td>1.</td><td></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td><td></td></tr> <tr><td colspan="5" style="text-align: right;">=Total Cover</td></tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width:35%;">Sapling/Shrub Stratum</th> <th style="width:15%;">(Plot size: <u>15 ft</u>)</th> <th style="width:15%;">Absolute % Cover</th> <th style="width:15%;">Dominant Species?</th> <th style="width:10%;">Indicator Status</th> </tr> <tr><td>1.</td><td></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td><td></td></tr> <tr><td colspan="5" style="text-align: right;">=Total Cover</td></tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width:35%;">Herb Stratum</th> <th style="width:15%;">(Plot size: <u>5 ft</u>)</th> <th style="width:15%;">Absolute % Cover</th> <th style="width:15%;">Dominant Species?</th> <th style="width:10%;">Indicator Status</th> </tr> <tr><td>1. <u>Bromus inermis</u></td><td></td><td>100</td><td>Yes</td><td>FACU</td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td><td></td></tr> <tr><td>6.</td><td></td><td></td><td></td><td></td></tr> <tr><td>7.</td><td></td><td></td><td></td><td></td></tr> <tr><td>8.</td><td></td><td></td><td></td><td></td></tr> <tr><td>9.</td><td></td><td></td><td></td><td></td></tr> <tr><td>10.</td><td></td><td></td><td></td><td></td></tr> <tr><td colspan="5" style="text-align: right;">100 =Total Cover</td></tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width:35%;">Woody Vine Stratum</th> <th style="width:15%;">(Plot size: <u>15 ft</u>)</th> <th style="width:15%;">Absolute % Cover</th> <th style="width:15%;">Dominant Species?</th> <th style="width:10%;">Indicator Status</th> </tr> <tr><td>1.</td><td></td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td><td></td></tr> <tr><td colspan="5" style="text-align: right;">=Total Cover</td></tr> </table>	Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	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Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	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>100</u>	x 4 = <u>400</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>100</u> (A)	<u>400</u> (B)	Prevalence Index = B/A = <u>4.00</u>	
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Remarks: (Include photo numbers here or on a separate sheet.) Hydrophytic vegetation is not present.																																																																																																																																																																							

SOIL

Sampling Point: DP24

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 ¹	Loc ²		
0-18	10YR 3/2	100					Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: ☐ Histosol (A1) ☐ Sandy Gleyed Matrix (S4) ☐ Histic Epipedon (A2) ☐ Sandy Redox (S5) ☐ Black Histic (A3) ☐ Stripped Matrix (S6) ☐ Hydrogen Sulfide (A4) ☐ Dark Surface (S7) ☐ Stratified Layers (A5) ☐ Loamy Mucky Mineral (F1) ☐ 2 cm Muck (A10) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Below Dark Surface (A11) ☐ Depleted Matrix (F3) ☐ Thick Dark Surface (A12) ☐ Redox Dark Surface (F6) ☐ Sandy Mucky Mineral (S1) ☐ Depleted Dark Surface (F7) ☐ 5 cm Mucky Peat or Peat (S3) ☐ Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: ☐ Coast Prairie Redox (A16) ☐ Iron-Manganese Masses (F12) ☐ Red Parent Material (F21) ☐ Very Shallow Dark Surface (F22) ☐ Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
---	---

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☐ No ☒
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Remarks:
Hydric soils are not present. Does not meet hydric soils criteria.

HYDROLOGY

Wetland Hydrology Indicators:			
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? Yes ☐ No ☒ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes ☐ No ☒
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology is neither present nor indicated. This sampling point is separated from its paired wetland sampling point (DP 23) by 12 ft with about 3 feet change in elevation.

Appendix I. Field Photographs



Photo 1. Wetland 1, general site. View to the north.



Photo 2. Wetland 1, general site. View to the east.



Photo 3. Wetland 1, data point 19. View to the north.



Photo 4. Wetland 1, data point 20. View to the north.



Photo 5. Wetland 2, general site. View to the northeast.



Photo 6. Wetland 2, general site. View to the southeast.



Photo 7. Wetland 3, general site. View to the north.



Photo 8. Data point 18. View to the north.



Photo 9. Data point 18 at boundary. View to the northwest.



Photo 10. Wetland 3, data point 17. View to the north.



Photo 11. Data point 16. View to the north.



Photo 12. Wetland 3, data point 15. View to the east.



Photo 13. Wetland 3, general site. View to the south.



Photo 14. General site. View to the northwest.



Photo 15. General site. Brome-dominated roadside swale. View to the east.



Photo 16. Investigation area. View to the north.



Photo 17. General site. View to the south.



Photo 18. General site. View to the south.



Photo 19. General site from farm access. View to the south.



Photo 20. Wetland 11, general site. View to the north.



Photo 21. Wetland 11, general site. View to the south.



Photo 22. General site. View to the south.



Photo 23. General site. View to the south.



Photo 24. General site. View to the northwest.



Photo 25. General site near runway 30 end. View to the southeast.



Photo 26. General site. View to the northeast.



Photo 27. General site along runway. View to the southeast.



Photo 28. General site along runway. View to the northwest.



Photo 29. General site, north hangar area. View to the southeast.



Photo 30. General site. View to the southwest.



Photo 31. General site along runway. View to the northwest.



Photo 32. General site at culvert. View to the northwest.



Photo 33. General site at culvert. View to the northwest.



Photo 34. Wetlands 9 and 10. View to the northwest.



Photo 35. Culvert exit and rip rap drain. View to the southeast.



Photo 36. Wetland 10, general site. View to the northwest.



Photo 37. Wetland 9, data points 13 and 14. View to the northwest.



Photo 38. Wetland 8, general site. View to the northwest.



Photo 39. Wetland 8, general site. View to the northeast.



Photo 40. Wetland 8, data points 11 and 12. View to the northwest.



Photo 41. Wetland 8, data points 11 and 12. View to the northeast.



Photo 42. Wetland 4, general site. View to the east.



Photo 43. Wetland 4, data points 3 and 4 and general site. View to the east.



Photo 44. Wetland 4, data points 3 and 4. View to the south.



Photo 45. Wetland 4, data points 1 and 2. View to the west.



Photo 46. Wetland 4, data points 1 and 2. View to the south.



Photo 47. Wetland 4, general site. View to the east.



Photo 48. General site. View to the southeast.



Photo 49. General site. View to the west.



Photo 50. Wetland 4 at west end. View to the east.



Photo 51. Wetland 5 at culvert end. View to the southwest.



Photo 52. Wetland 5, general site. View to the north.



Photo 53. Wetland 5, general site. View to the south.



Photo 54. Wetland 5, data points 9 and 10. View to the southeast.



Photo 55. Wetland 5, data points 9 and 10. View to the east.



Photo 56. Wetland 5, general site. View to the south.



Photo 57. Wetland 5, general site. View to the south.



Photo 58. Double box culvert under railroad. View to the west.



Photo 59. Wetland 5, wooded fringe. View to the north.



Photo 60. General site. View to the south.



Photo 61. General site by localizer. View to the northeast.



Photo 62. General site. View to the southeast.



Photo 63. General site along 219th St. View to the southeast.



Photo 64. General site. View to the northeast.



Photo 65. General site at swale. View to the southwest.



Photo 66. General site. View to the northeast.



Photo 67. General site. View to the northwest.



Photo 68. General site at culvert. View to the northeast.



Photo 69. Wetland 6, general site. View to the north.



Photo 70. Wetland 6, data points 5 and 6. View to the southeast.



Photo 71. Wetland 6, data points 5 and 6. View to the south.



Photo 72. Wetland 6, general site. View to the northeast.



Photo 73. Wetland 6, general site. View to the southeast.



Photo 74. Wetland 6, general site. View to the south.



Photo 75. Wetland 7, data points 7 and 8. View to the north.



Photo 76. Wetland 7, data points 7 and 8. View to the southwest.



Photo 77. Wetland 7, general site. View to the southwest.



Photo 78. General site. View to the northeast.



Photo 79. Data point 21. View to the south.



Photo 80. Wetland 12, general site. View to the north.



Photo 81. Wetland 12, general site. View to the south.



Photo 82. Wetland 12, Data points 23 and 24. View to the east.



Photo 83. Wetland 12, Data point 24. View to the south.



Photo 84. Cottonwoods along swale. View to the south.



Photo 85. Detention area. View to the south.

Appendix J. Delineator Qualifications

BRAUNA HARTZELL, GISP, PWS
GEOGRAPHIC INFORMATION SYSTEM (GIS) ANALYST/
WETLANDS SCIENTIST
EXPERIENCE (GIS)

Brauna Hartzell has more than 20 years of experience applying GIS software and database design techniques to support wetlands and water resources, historic preservation, community planning, transportation, aviation and military planning, and municipal infrastructure and storm water management. She has worked extensively with GIS and mapping software including ArcGIS desktop and ARC/INFO workstation and has specialized experience with 3D Analyst, Network Analyst and Spatial Analyst. She also collects environmental field data using hand-held GPS units and post-processes information for inclusion in databases and use in spatial analyses. Brauna collaborates with personnel from multiple disciplines to solve complex spatial problems through scripting and spatial analysis to deliver results and data for project-specific needs. She utilizes geoprocessing models, Python, and VBA to meet analytical needs of projects.

Brauna is experienced with GIS-related data submittal requirements associated with the Federal Energy Regulatory Commission (FERC) and the Federal Aviation Administration (FAA) data standardization initiatives. She has extensive experience developing Geodatabases with the Spatial Data Standards for Facility, Infrastructure, and Environment (SDSFIE) standard and creating Federal Geographic Data Committee (FGDC)-compliant metadata.

Brauna has specialized experience with using 3D data formats for spatial analysis, contour generation and manipulation, and geospatial modeling. She is adept in the use of LiDAR-derived data and DTMs in support of hydrology and hydraulic analyses. Additionally, she has extensive experience with SSURGO databases and the National Hydrography Dataset.

EXPERIENCE (WETLAND/ENVIRONMENTAL)

Brauna Hartzell has more than twenty years of experience in wetland delineation, wetland permitting, and restoration projects. She performs wetland and field delineations conforming to current United States Army Corps of Engineers (USACE) guidance including the Midwest and Northcentral and Northeast Regional Supplements and State standards, designs custom field data collection applications, collects field data using hand-held Global Positioning Systems (GPS) data collectors and tablets, and prepares National Environmental Policy Act (NEPA) documentation. Brauna has successfully guided numerous projects through the Section 404 permitting process.

Brauna has performed numerous wetland delineations in Wisconsin, Minnesota, and Michigan since 2002. Work included conducting the delineation, documenting field investigations and site conditions, creating wetland boundary maps, and report writing. She conducts wetland mitigation site monitoring according to established site-specific assessment protocols, performs vegetation surveys, and analyzes and presents field collected data in graphical and tabular form. She also assists in mitigation site design and construction specifications development.



Areas of Expertise

- Geographic Information Systems (GIS)
- Remote-sensing image processing
- Digital mapping
- Database design
- Wetland delineation and permitting

Education

- MS, Environmental Monitoring, 1994, University of Wisconsin, Madison
- BS, Biological Science, 1982, Florida State University, Tallahassee, Florida

Certificates

- Ecological Restoration Certificate (5-3.0 CEU classes), Restoring Minnesota Ecological Restoration Training Cooperative program, 2020

Registration/Certification

- Certified GIS Professional (GISP), GIS Certification Institute
- Professional Wetland Scientist (PWS), Society of Wetland Scientists Professional Certification Program (SWSPCP)

Training and Seminars

- Critical Methods in Delineation, University of Wisconsin-LaCrosse, 2007, 2008, 2009, 2017, 2018, 2019, 2020, 2021, 2022
- Conservation Biology, University of Wisconsin-Madison, Spring 2021
- Grasses, Sedges, and Rushes Workshop, University of Wisconsin-LaCrosse, 2017
- Wildlife Inventory and Monitoring Workshop, University of Wisconsin – Milwaukee, 2015
- Advanced Wetland Delineation Workshop, University of Wisconsin – LaCrosse, 2007
- Basic Hydric Soil Identification Workshop, University of Wisconsin – LaCrosse, 2005
- Wetlands Ecology, University of Wisconsin – Madison, Spring 2003
- Vascular Flora of Wisconsin, University of Wisconsin – Madison, Spring 2002

BRAUNA HARTZELL, GISP (CONTINUED)

RELATED PROJECTS (WETLANDS)

Conservation Easement Baseline Biological Survey, 2021

Houghton County Airport

Calumet, Michigan

Lead Environmental Scientist. To mitigate for wetland impacts relating to a clearing project at the Airport, the Houghton County Memorial Airport will create a conservation easement for a 40-acre parcel owned by Houghton County. Brauna was lead environmental scientist responsible for overseeing and assisting with field work by a botanist and report and map creation. A Floristic Quality Assessment was performed by conducting a meander survey and collecting species cover data at eight permanent quadrat locations. The baseline report detailed field work to assess and document the 40-acre parcel as a high-quality Wooded Dune and Swale complex for creation of a conservation easement. Brauna coordinated with the Michigan Office of Environment, Great Lakes, and Energy (EGLE) to complete all necessary field requirements for the preservation of this rare plant community type.

Wetland Delineation, STH 162 Vernon and La Crosse Counties, 2021

Wisconsin Department of Transportation

Madison, Wisconsin

Lead Wetland Delineator. Brauna was lead wetland delineator in support of culvert, beam guard, and surface upgrades for a 5.6 mile stretch of State Trunk Highway (STH) 162 in Vernon and LaCrosse Counties. The project corridor extended from Coon Valley to STH 33. The area of interest consisted of the full length of the project corridor and selected areas requiring culvert and beam guard upgrades. The delineation resulted in the delineation of four wetlands. Stream assessments and Ordinary High Water Mark (OHWM) determinations were completed at two bridges within the Coon Valley municipal limits. Wetland types encountered include fresh wet meadow and shrub-scrub wetlands delineated in association with stream crossings or adjacent floodplains.

Wetland Delineation, STH 162 Vernon County, 2021

Wisconsin Department of Transportation

Madison, Wisconsin

Lead Wetland Delineator. Brauna was lead wetland delineator in support of culvert, beam guard, and surface upgrades for a 6.9 mile stretch of State Trunk Highway (STH) 162 in Vernon County. The project corridor extended from Stoddard to Chaseburg. The area of interest consisted of the full length of the project corridor and selected areas requiring culvert and beam guard upgrades. The delineation resulted in the delineation of nine wetlands. Stream assessments for five streams were completed. Wetland types encountered include fresh wet meadow wetlands delineated in association with stream crossings or adjacent floodplains.

Wetland Delineation, STH 29 Clark County, 2021

Wisconsin Department of Transportation

Madison, Wisconsin

Lead Wetland Delineator. Brauna was lead wetland delineator in support of proposed culvert and beam guard upgrades for a 15.1 mile stretch of State Trunk Highway (STH) 29 in Clark County. The area of interest consisted of separate investigation areas at selected culvert and beam guard locations and all local road intersections which resulted in the delineation of 104 wetlands. Wetland types encountered include fresh wet meadows, forested wetlands, and riparian wetlands associated with four major stream crossings.

- Grasses: Identification and Ecology Workshop, University of Wisconsin – Milwaukee workshop, 2002
- Basic Wetland Delineation Workshop, University of Wisconsin–LaCrosse, 2002

Training and Seminars

- GPS Field Collection Techniques Training Workshop for Trimble GeoXH, Seiler Instruments

Past Employment

- Information Management Systems, Inc.
- Adult Communities Total Services, Inc.
- Archeological Assessments, Inc.
- University of Wisconsin – Madison

No. of Years With Mead & Hunt

- Hired 08/28/1992

No. of Years With Other Firms

- Four

BRAUNA HARTZELL, GISP (CONTINUED)

Wetland Delineation, 2020

Rochester International Airport

Rochester, Minnesota

Brauna served as lead wetland delineator in support of an environmental assessment for a proposed extension of Runway 2/20 and associated Taxiway A, along with other connected actions including the realignment of navigational equipment. The area of interest is approximately 712 acres in size and resulted in the delineation of thirty-eight wetlands. Wetland types encountered include emergent seasonally-flooded basins, and forested and fresh (wet) meadows. An off-site hydrology assessment using historic aerial photographs supported field assessment of farm fields within the study area. Agricultural areas were examined resulting in the delineation of two farmed wetlands. Brauna also completed NEPA documentation for wetlands and lead wetland permitting efforts.

Wetland Delineation, W.K. Kellogg Airport, 2020

W.K. Kellogg Airport

Battle Creek, Michigan

Brauna served as lead wetland delineator in support of an environmental documentation for a proposed road realignment to facilitate hangar development and other support services at the airport. The area of interest is approximately 52 acres in size and resulted in the delineation of six wetlands. Wetland types encountered include emergent seasonally-flooded basins and one emergent/forested wetland.

Joint Individual Permit – USACE Approval, 2019

Reconstruction and Extension of Runway 7L/25R and Taxiway A

Kenosha Regional Airport

Kenosha, Wisconsin

The proposed project includes the reconstruction and extension of Runway 7L/25R and Taxiway A at the Airport. Other actions proposed include improving the approach minimums to Runway 25R, bringing the geometries of these pavements into conformance with current standards, acquiring land and performing obstruction removal to provide clear approach and departure operations, and relocating navigational instruments and edge lighting / signage to correspond with the proposed pavement limits. Approximately 2.5 acres of wetland fill are necessary to achieve project needs. Brauna served as the lead preparer of the individual permit application which included a Practicable Alternatives Analysis.

Wetland Delineation and Biological Resources Survey, 2019

Ann Arbor Municipal Airport

Ann Arbor, Michigan

Brauna served as lead wetland delineator in support of an environmental assessment for a proposed extension of Runway 6/24 and associated Taxiway A, along with other connected actions including the removal of decommissioned navigational equipment. The area of interest is approximately 82 acres in size and resulted in the delineation of three wetlands and one stream. Habitat for identified threatened and endangered species was assessed during field work. Wetland types encountered include emergent seasonally-flooded basins and one stream approximately 300 ft long within the project area of interest.

BRAUNA HARTZELL, GISP (CONTINUED)

Wetland Delineation and Biological Resources Survey, 2019

Kalamazoo-Battle Creek International Airport

Kalamazoo, Michigan

Brauna served as lead wetland delineator in support of an environmental assessment for a proposed extension of Runway 17/35 and improvement of airfield movement by correcting geometry deficiencies associated with the intersection of Taxiway C and Runway 17. The area of interest is approximately 246 acres in size and resulted in the delineation of seven wetlands. Habitat for identified threatened and endangered species was assessed during field work. Wetland types encountered include emergent seasonally-flooded basins and a large complex with multiple community types within the project area of interest.

Wetland Delineation and Biological Resources Survey, 2019

Ontonagon County Airport

Ontonagon, Michigan

Brauna served as lead wetland delineator in support of an environmental assessment for a proposed obstruction clearing for Runway 17/35. The area of interest is approximately 127 acres in size and resulted in the delineation of thirty-one new wetlands and re-examination of seven previously delineated wetlands. Habitat for identified threatened and endangered species was assessed during field work. Wetland types encountered include emergent seasonally-flooded basins, forested and scrub-shrub wetlands within the project area of interest.

Wetland Delineation and Biological Resources Survey, 2019

Houghton County Airport

Calumet, Michigan

Brauna served as lead wetland delineator in support of an environmental assessment for obstruction clearing for the Runway 25 approach and RPZ, removal of an existing farm pond, and reestablishment of a regulated stream. The parcel was recently acquired by the Airport. The area of interest is approximately 23 acres in size and resulted in the delineation of four wetlands, one stream, and one small pond. Habitat for identified threatened and endangered species was assessed during field work. Wetland types encountered include an emergent seasonally-flooded basin, three forested wetlands, and a 1-acre pond with multiple community types within the project area of interest.

Joint Individual Permit – USACE Approval, 2018

Construction of Production and Logistics Facility

Haribo of America

Pleasant Prairie, Wisconsin

The proposed project includes construction of a production and logistics facility with visitor and employee parking, warehousing capability, and other amenities. 0.6 acres of wetland fill will be necessary to achieve project needs. Brauna served as the lead preparer of the individual permit application which included a Practicable Alternatives Analysis.

BRAUNA HARTZELL, GISP (CONTINUED)

Wetland Delineation, W.K. Kellogg Airport, 2018

W.K. Kellogg Airport

Battle Creek, Michigan

Brauna served as lead wetland delineator in support of an environmental assessment for proposed grading and site improvements to facilitate hangar development and other support services at the airport. The area of interest is approximately 180 acres in size and resulted in the delineation of six wetlands. Wetland types encountered include emergent seasonally-flooded basins and aquatic bed wetlands.

Wetland Delineation, Crystal Airport, 2018

Metropolitan Airports Commission

Brooklyn Center, Minnesota

Brauna served as lead wetland delineator in support of alternatives analysis for an environmental assessment for proposed airfield improvements. The area of interest is approximately 50 acres in size spread over eight areas and resulted in the delineation of seven wetlands. Wetland delineation consisted of emergent Type 1 seasonally-flooded basins.

Wetland Delineation, STH 73, Juneau and Monroe counties, 2018

Wisconsin Department of Transportation

Madison, Wisconsin

Brauna served as lead wetland delineator in support of bridge replacements and beam guard upgrades along a 19.4 mile stretch of State Trunk Highway (STH) 173 slated for roadway resurfacing improvements in Juneau and Monroe counties. Wetlands were delineated in association with bridge crossings at three stream crossings and areas of beam guard upgrades. Wetland types encountered include: fresh wet meadows and hardwood and shrub swamps.

Wetland Delineation, STH 164 Waukesha County, 2018

Wisconsin Department of Transportation

Madison, Wisconsin

Brauna served as lead wetland delineator managing two delineator teams in support of resurfacing and intersection upgrade alternatives analysis for a 4.6 mile stretch of State Trunk Highway (STH) 164 in Waukesha County. The area of interest is approximately 133 acres in size and resulted in the delineation of 22 wetlands. Wetland types encountered include: fresh wet meadows, hardwood and shrub swamps, and riparian wetlands associated with six major and minor stream crossings.

Wetland Delineation, Seminary Springs Road Bridge Replacement, 2018

Town of Burke

Dane County, Wisconsin

The proposed project in the Town of Burke includes topographic survey, wetland delineation, and construction design and plan preparation for the replacement of a bridge carrying Seminary Springs Road. Brauna performed the wetland delineation for the bridge crossing and other adjacent areas with potential for road re-alignment. The area of interest consisted of 6.1 acres and wetland types encountered included wet meadow and forest. Some of the area of interest was in agricultural production.

BRAUNA HARTZELL, GISP (CONTINUED)

Joint Section 404 – WCA Permit and Compensatory Mitigation Plan, 2017

Detroit Lakes-Becker County Airport

Detroit Lakes, MN

The proposed project at the Airport includes a relocation of the Runway 13 threshold 1,000 feet to the southeast to provide a 5,200-foot long runway which accommodates an instrument approach with CAT-I minimums. Additionally, a full-length taxiway will be constructed. In total, the proposed project will address airfield design deficiencies, improve runway pavement condition, and meet runway length requirements. Approximately 14 acres of wetland fill will be necessary to achieve project needs. A compensatory mitigation plan is included in the permit application. Brauna served as the lead preparer of the permit application.

Wetland Delineation, I-43 Ozaukee/Milwaukee counties, 2017

Wisconsin Department of Transportation

Madison, Wisconsin

Brauna served as lead wetland delineator in support of roadway design alternatives analysis for a 1.4 mile stretch of Interstate highway in Ozaukee and Milwaukee counties. The area of interest is approximately 92 acres in size and resulted in the delineation of 61 wetlands. Wetland types encountered include: fresh wet meadows, and hardwood and shrub swamps.

Wetland Delineation and Re-certification, Waukesha County, 2017

Waukesha County Airport

Waukesha, WI

Brauna served as the lead wetland delineator to update and re-certify previously delineated wetland boundaries more than 5 years old. Airfield projects spanning more than 8 years necessitated multiple delineations. Permitting for the current Runway Safety Area (RSA) improvement project required a reassessment of previous wetland boundaries. The boundaries of 12 previous identified wetlands were investigated during field work using hand-held GPS equipment. Three boundaries were updated based on changed environmental conditions and one new wetland was identified in an area not previously investigated. Sampling points and photographs combined to provide documentation of the re-certification.

Wetland Delineation, Lake Elmo Airport, 2017

Metropolitan Airports Commission

Lake Elmo, Minnesota

Brauna served as lead wetland delineator in support of alternatives analysis for an environmental assessment for a proposed runway relocation and associated improvements. The area of interest is approximately 130 acres in size and resulted in the delineation of nine wetlands, one of which was in agricultural production. Wetland types encountered include: shallow marsh, fresh wet meadows, and shrub swamps. A functional assessment was performed using the MN Rapid Assessment Method (MNRAM), updating existing information and assessing newly delineated wetlands.

Wetland Delineation, Green Bay-Austin Straubel International Airport, 2017

Wisconsin Bureau of Aeronautics

Brown County, Wisconsin

Brauna served as lead wetland delineator in support of an environmental assessment for a proposed expansion to the East General Aviation apron and regrading associated with Runway 6/24. The area of interest is approximately 65 acres in size, covering

BRAUNA HARTZELL, GISP (CONTINUED)

airport infield areas, which resulted in the delineation of 23 emergent wet-meadow wetlands.

Wetland Delineation, STH 48/US 53 Interchange Improvements, 2017 Wisconsin Department of Transportation Rice Lake, Wisconsin

Brauna served as the lead wetland delineator in support of permitting for interchange improvements to address safety, geometric and operational deficiencies, and improve facilities for non-motorized traffic. The area of interest is approximately 17.5 acres in size and resulted in the delineation of nine wetlands. Wetland types encountered include fresh wet meadows and ditch wetlands.

Wetland Delineation, Ontonagon County Airport, 2016 Michigan Bureau of Aeronautics Ontonagon County, Michigan

Brauna served as the lead wetland delineator in support of permitting and on-site mitigation activities related to proposed wetland disturbance in another area of the airport. The area of interest is approximately 19.4 acres in size and resulted in the delineation of 11 wetlands in areas previously in agricultural production. Brauna also performed groundwater well monitoring and data analysis in support of mitigation site design.

Wetland Delineation, Central Wisconsin Airport, 2016 Wisconsin Bureau of Aeronautics Mosinee, Marathon County, Wisconsin

Brauna served as the lead wetland delineator in support of master planning activities related to determining the viability of shifting Runway 17/35 to the south. The area of interest is approximately 70 acres in size and resulted in the delineation of three large wetlands on airport property and two off-site. The three on-site wetlands experience regular mowing and other maintenance activities as well as show evidence of groundwater contact on a sloping terrain with a seasonal high-water table; off-site wetlands consisted of an alder and a hardwood swamp.

Little Rock Lake Wetland Survey, 2016 National Ecological Observatory Network (NEON), Boulder, CO Vilas County, Wisconsin

Brauna served as the lead wetland scientist in support of site equipment layout investigations for long-term ecological monitoring. A total of four wetlands were delineated within the area of interest at this mesotrophic seepage lake covering about 39 acres. Each proposed equipment installation site was surveyed and wetlands delineated in close proximity to any proposed location.

STH 67 Resurfacing Design and Environmental Documentation, 2016 Wisconsin Department of Transportation (WisDOT) Northeast Region Fond du Lac County, Wisconsin

Mead & Hunt led redesign of this 20-mile corridor of STH 67 spanning Fond du Lac County through both rural and developed sections. In support of environmental documentation, a wetland delineation was performed within the right-of-way for the corridor. Wetland types encountered include shallow marsh, fresh wet meadows, shrub swamps, and riparian wetlands. In total, 69 wetlands were delineated. Brauna assisted with wetland delineation and survey, mapping and data management.

BRAUNA HARTZELL, GISP (CONTINUED)

Interstate Highway (IH) 90/94 Corridor Study, 2013-2017

Wisconsin Department of Transportation (WisDOT) Southwest Region Portage, Juneau, Sauk, and Columbia Counties, Wisconsin

Mead & Hunt is leading a team that is conducting a corridor study of IH 90/94 from US12/WIS 16 to IH39. The project consists of evaluating operational and safety issues, review of the interchanges and ramps within the corridor, and evaluating possible expansion. Environmental studies are being conducted and include; cultural resources surveys, endangered species surveys, contaminated material investigations, noise analysis and wetland delineations. Brauna is a wetland scientist assisting in the delineation, wetland field data collection and mapping. Cost: \$210 million

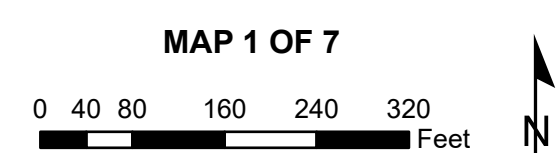
Wetland Mitigation, Runway 14/32 Safety Area, 2004-2011

WisDOT Bureau of Aeronautics Madison, Wisconsin

Brauna served as project scientist for this reconstruction of a runway safety area and railroad within a state natural area. 140 acres of fen and sedge meadow were restored and enhanced, and 6,000 feet of Starkweather creek was restored with an annually flooded riparian corridor. The project also included restoration of ten acres of swamp forest and 35 acres of upland buffer, plus negotiation of annual management and monitoring to enhance rare plant habitats within Cherokee Fen. The mitigation cost was more than \$1.5 million, with a total project construction cost of \$25 million. Brauna assisted with wetland monitoring and collection of botanical and hydrologic data for compliance. She also monitored for invasive species.



DELINEATED WATERS OF THE US
AIRLAKE AIRPORT



- ProjectAOI
- Delineated Wetland
- Photo Location
- Culvert

- Data Point Type**
- Upland
 - Wetland
 - Tributary Boundary (OHWM)
 - Tributary Centerline

Legend

- Flow Type**
- Ditch Flow Direction
 - General Flow Direction
- Contour Type**
- Index
 - Intermediate

- Railroad
- Airport Property Boundary

DATA SOURCES

1. Image Source: MnGeo WMS Image Service, NAIP 2021, accessed at <https://imageserver.gisdata.mn.gov/cgi-bin/wms?>

2. Contours derived from LIDAR data collected in 2008 for SE Minnesota LiDAR Collection Project. Contour interval is 2 feet. Accessed at <http://arcgis.dnr.state.mn.us/maps/mntopo/>

PROJECT LOCATION

Section 33, T114, R20W
Sections 3 and 4, T113, R20W
City of Lakeville
Dakota County, MN
LRR Subregion: M
USACE Regional Supplement: Midwest
Area = 164.4 acres
Field work conducted August 1 - 4 and
September 8, 2022



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DELINEATED WATERS OF THE US
AIRLAKE AIRPORT

MAP 2 OF 7

0 40 80 160 240 320 Feet

N

Legend

Data Point Type

- Upland
- Wetland
- Tributary Boundary (OHWM)
- Tributary Centerline

Flow Type

- Ditch Flow Direction
- General Flow Direction

Contour Type

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- Culvert

Railroad

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DELINEATED WATERS OF THE US
AIRLAKE AIRPORT

MAP 3 OF 7

0 40 80 160 240 320

Feet

Project AOI

Delineated Wetland

Photo Location

Culvert

Upland

Wetland

Tributary Boundary (OHWM)

Tributary Centerline

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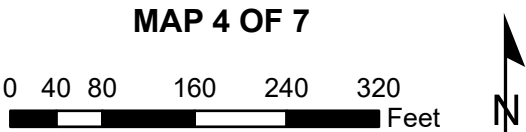
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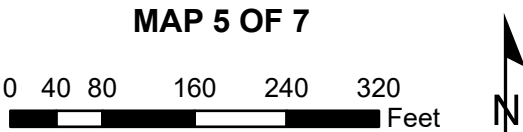
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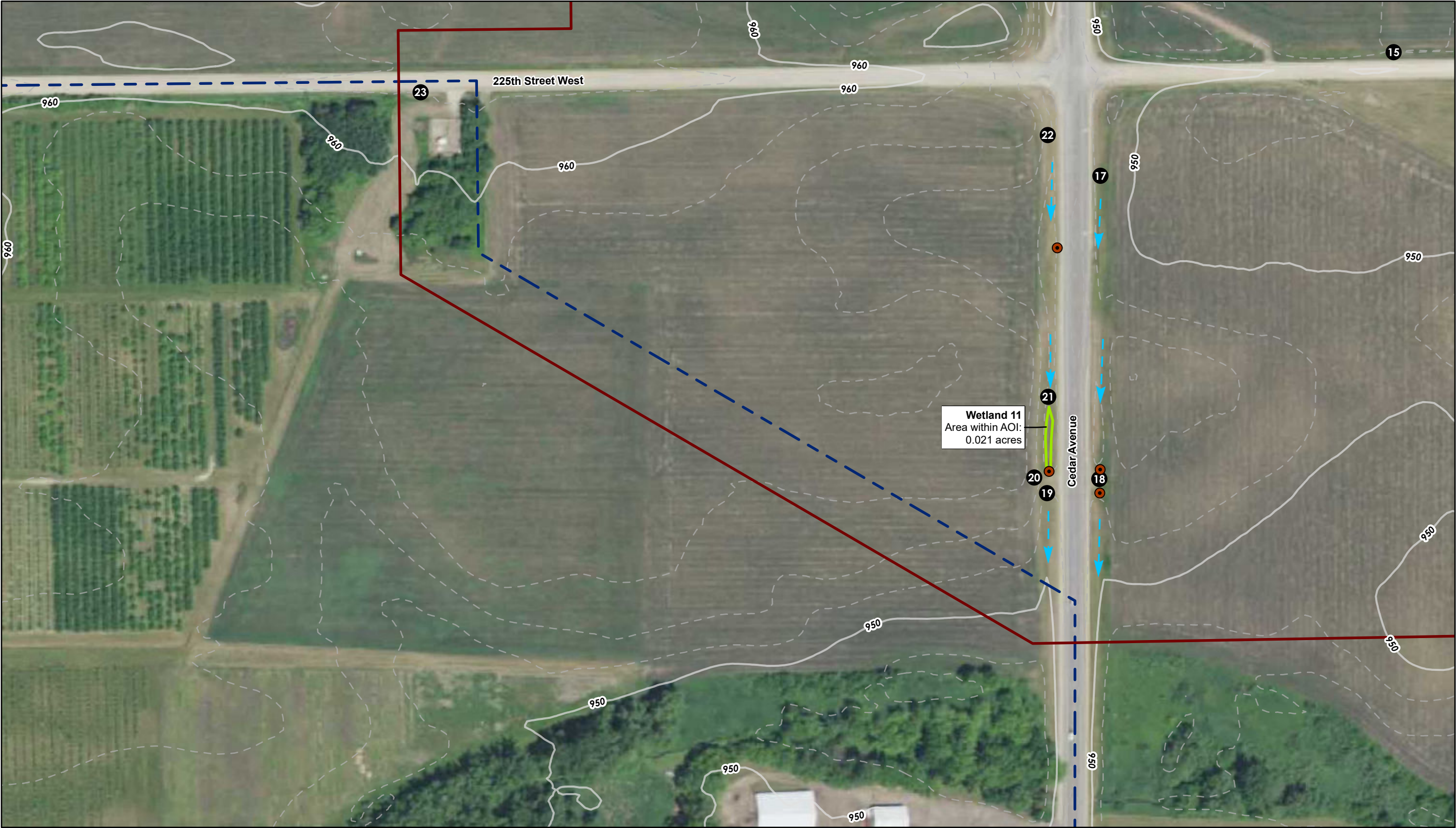
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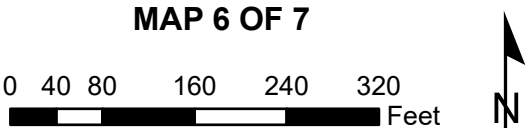
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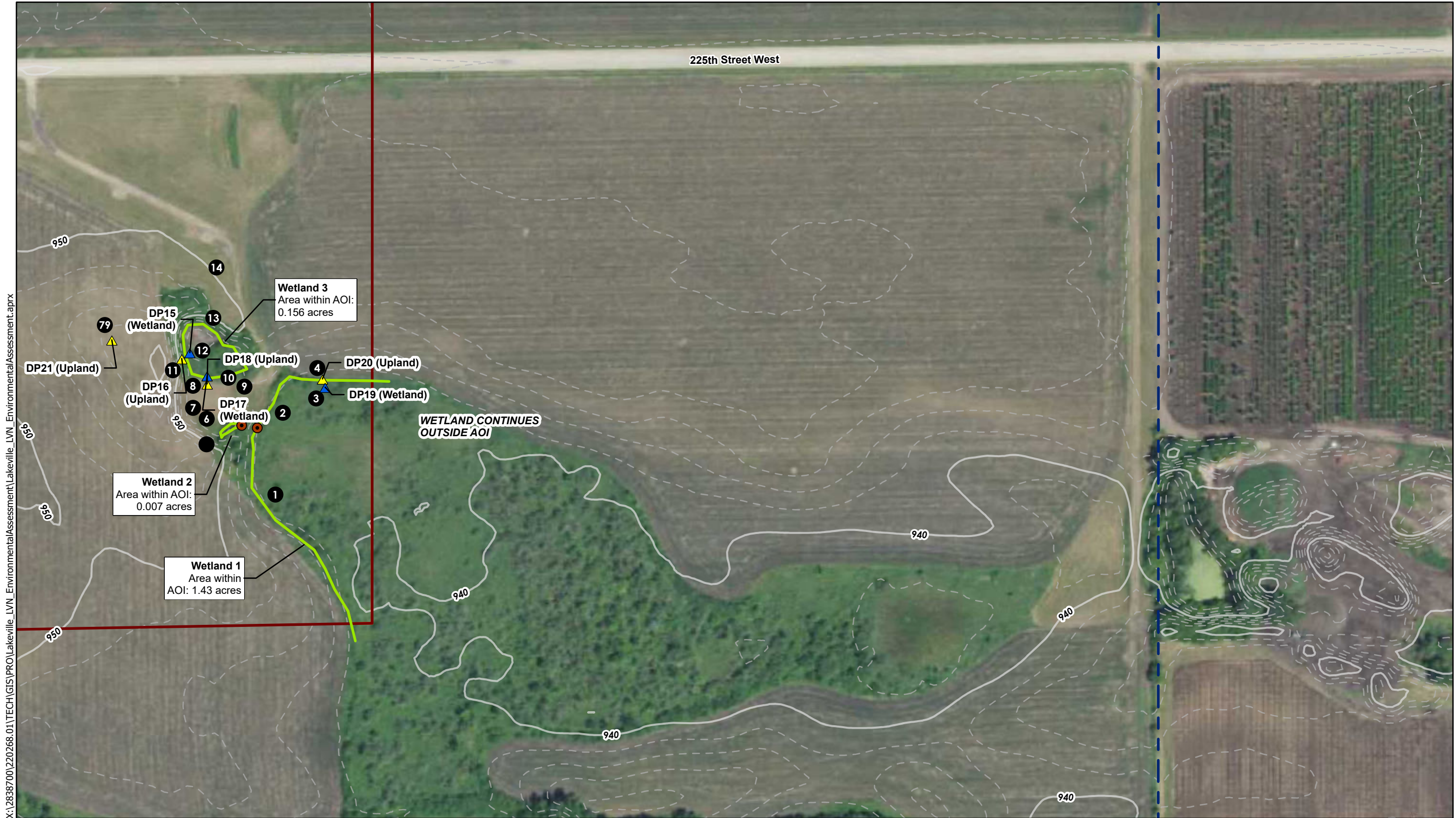
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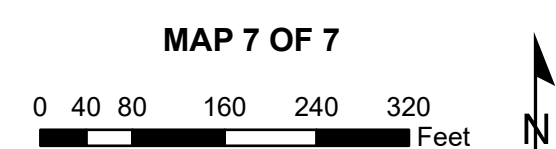
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Minnesota Wetland Conservation Act Notice of Decision

Local Government Unit: City of Lakeville	County: Dakota
Applicant Name: Metropolitan Airport	Applicant Representative: Mead & Hunt
Project Name: Airlake Airport	LGU Project No. (if any): 22-01-08
Date Complete Application Received by LGU: 11/16/2022	
Date of LGU Decision: 12/15/2022	
Date this Notice was Sent: 12/19/2022	

WCA Decision Type - check all that apply

☒ Wetland Boundary/Type	☐ Sequencing	☐ Replacement Plan	☐ Bank Plan (not credit purchase)
☐ No-Loss (8420.0415)	☐ Exemption (8420.0420)		
Part: ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ G ☐ H		Subpart: ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9	

Replacement Plan Impacts (replacement plan decisions only)

Total WCA Wetland Impact Area:
Wetland Replacement Type: ☐ Project Specific Credits: ☐ Bank Credits:
Bank Account Number(s):

Technical Evaluation Panel Findings and Recommendations (attach if any)

☒ Approve ☐ Approve w/Conditions ☐ Deny ☒ No TEP Recommendation

LGU Decision

☐ Approved with Conditions (specify below) ¹ List Conditions:	☒ Approved ¹ ☐ Denied
Decision-Maker for this Application: ☒ Staff ☐ Governing Board/Council ☐ Other:	
Decision is valid for: ☒ 5 years (default) ☐ Other (specify):	

¹ *Wetland Replacement Plan approval is not valid until BWSR confirms the withdrawal of any required wetland bank credits. For project-specific replacement a financial assurance per MN Rule 8420.0522, Subp. 9 and evidence that all required forms have been recorded on the title of the property on which the replacement wetland is located must be provided to the LGU for the approval to be valid.*

LGU Findings – Attach document(s) and/or insert narrative providing the basis for the LGU decision¹.

☐ Attachment(s) (specify): Click here to enter text.
☒ Summary: The Notice of Application was sent out 11/17/22. No adverse comments were received. Based on the information provided and site visit on 10/13/22 the wetland delineation for the City of Lakeville areas outlined in the report has been determined to be acceptable for use in implementing the Wetland Conservation Act. Questions regarding this application can be submitted to the LGU (contact information listed below).

¹ Findings must consider any TEP recommendations.

Attached Project Documents

☒ Site Location Map ☐ Project Plan(s)/Descriptions/Reports (specify):
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Appeals of LGU Decisions

If you wish to appeal this decision, you must provide a written request within 30 calendar days of the date you received the notice. All appeals must be submitted to the Board of Water and Soil Resources Executive Director along with a check payable to BWSR for \$500 *unless* the LGU has adopted a local appeal process as identified below. The check must be sent by mail and the written request to appeal can be submitted by mail or e-mail. The appeal should include a copy of this notice, name and contact information of appellant(s) and their representatives (if applicable), a statement clarifying the intent to appeal and supporting information as to why the decision is in error. Send to:

Appeals & Regulatory Compliance Coordinator
Minnesota Board of Water & Soils Resources
520 Lafayette Road North
St. Paul, MN 55155
travis.germundson@state.mn.us

Does the LGU have a local appeal process applicable to this decision?

☒ Yes¹ ☐ No

¹If yes, all appeals must first be considered via the local appeals process.

Local Appeals Submittal Requirements (LGU must describe how to appeal, submittal requirements, fees, etc. as applicable)

Send petition within 30 calendar days of date you received notice and \$300 fee to: City of Lakeville LGU, 20195 Holyoke Ave, Lakeville, MN 55044; environmental@lakevillemn.gov

Notice Distribution (include name)

Required on all notices:

☒ SWCD TEP Member: Mr. Dave Holmen; David.Holmen@co.dakota.mn.us
☒ BWSR TEP Member: Mr. Jed Chesnut; jed.chesnut@state.mn.us
☒ LGU TEP Member (if different than LGU contact): Mr. McKenzie Cafferty; mcafferty@lakevillemn.gov
☒ DNR Representative: Mr. Tim Pharis; Tim.Pharis@state.mn.us Mr. John Gleason; john.gleason@state.mn.us
☒ Watershed District or Watershed Mgmt. Org.: Mr. Mark Zabel, Vermillion River JPO, Mark.Zabel@co.dakota.mn.us
☒ Applicant (notice only): Ms. Bridget Rief; bridget.rief@mspmac.org
☒ Agent/Consultant (notice only): Mr. Evan Barrett; evan.barrett@meadhunt.com

Optional or As Applicable:

☒ Corps of Engineers: usace_requests_mn@usace.army.mil
☐ BWSR Wetland Mitigation Coordinator (required for bank plan applications only):
☐ Members of the Public (notice only): ☐ Other:

Signature: 	Date: 12/19/2022
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This notice and accompanying application materials may be sent electronically or by mail. The LGU may opt to send a summary of the application to members of the public upon request per 8420.0255, Subp. 3.

Minnesota Wetland Conservation Act Notice of Decision

Local Government Unit: Eureka Township, City of Lakeville	County: Dakota
Applicant Name: Metropolitan Airports Commission, Bridget Rief	
Applicant Representative: Meadhunt, Evan Barrett	
Project Name: Airlake Airport Runway Expansion	LGU Project No. (if any): SWCD # 22-EUR-169
Date Complete Application Received by LGU: 11/02/22	
Date of LGU Decision: 12/08/22	
Date this Notice was Sent: 12/08/22	

WCA Decision Type - check all that apply

☒ Wetland Boundary/Type	☐ Sequencing	☐ Replacement Plan	☐ Bank Plan (not credit purchase)
☐ No-Loss (8420.0415)	☐ Exemption (8420.0420)		
Part: ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ G ☐ H		Subpart: ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9	

Replacement Plan Impacts (replacement plan decisions only)

Total WCA Wetland Impact Area:
Wetland Replacement Type: ☐ Project Specific Credits: ☐ Bank Credits:
Bank Account Number(s):

Technical Evaluation Panel Findings and Recommendations (attach if any)

☐ Approve ☐ Approve w/Conditions ☐ Deny ☒ No TEP Recommendation
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LGU Decision

☐ Approved with Conditions (specify below) ¹ List Conditions:	☒ Approved ¹	☐ Denied
Decision-Maker for this Application: ☒ Staff ☐ Governing Board/Council ☐ Other:		
Decision is valid for: ☒ 5 years (default) ☐ Other (specify):		

¹ Wetland Replacement Plan approval is not valid until BWSR confirms the withdrawal of any required wetland bank credits. For project-specific replacement a financial assurance per MN Rule 8420.0522, Subp. 9 and evidence that all required forms have been recorded on the title of the property on which the replacement wetland is located must be provided to the LGU for the approval to be valid.

LGU Findings – Attach document(s) and/or insert narrative providing the basis for the LGU decision¹.

☐ Attachment(s) (specify): ☒ Summary: The Notice of Application was sent out November 02, 2022 and the comment period ended on December 02, 2022. No comments were received during the comment period. The SWCD conducted a field review of the project site on November 4, 2022 and verified the boundaries and types of Wetlands 1-3, and 11 within the Eureka Township portion of the project area.
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¹ Findings must consider any TEP recommendations.

Attached Project Documents

☒ Site Location Map ☐ Project Plan(s)/Descriptions/Reports (specify): Click here to enter text.
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Appeals of LGU Decisions

If you wish to appeal this decision, you must provide a written request within 30 calendar days of the date you received the notice. All appeals must be submitted to the Board of Water and Soil Resources Executive Director along with a check payable to BWSR for \$500 *unless* the LGU has adopted a local appeal process as identified below. The check must be sent by mail and the written request to appeal can be submitted by mail or e-mail. The appeal should include a copy of this notice, name and contact information of appellant(s) and their representatives (if applicable), a statement clarifying the intent to appeal and supporting information as to why the decision is in error. Send to:

Appeals & Regulatory Compliance Coordinator
Minnesota Board of Water & Soils Resources
520 Lafayette Road North
St. Paul, MN 55155
travis.germundson@state.mn.us

Does the LGU have a local appeal process applicable to this decision?

☒ Yes¹ ☐ No

¹If yes, all appeals must first be considered via the local appeals process.

Local Appeals Submittal Requirements (LGU must describe how to appeal, submittal requirements, fees, etc. as applicable)

Send petition within 30 calendar days of date receive notice and \$TBD fee to: Eureka Township, 25043 Cedar Ave., Farmington, MN 55024

Notice Distribution (include name)

Required on all notices:

☒ SWCD TEP Member: David Holmen	☒ BWSR TEP Member: Jed Chesnut
☒ LGU TEP Member (if different than LGU contact): Clerk, Eureka Township, Ann Messerschmidt, City of Lakeville	
☒ DNR Representative: Tim Pharis	
☒ Watershed District or Watershed Mgmt. Org.: Ashley Gallagher, North Cannon River WMO	
☒ Applicant (notice only): Bridget Rief, Metropolitan Airport Commission	
☒ Agent/Consultant (notice only): Evan Barrett, Meadhunt	

Optional or As Applicable:

☒ Corps of Engineers: usace_requests_mn@usace.army.mil	
☐ BWSR Wetland Mitigation Coordinator (required for bank plan applications only):	
☐ Members of the Public (notice only):	☐ Other:

Signature: 	Date: 12/08/22
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DEPARTMENT OF THE ARMY
ST. PAUL DISTRICT, CORPS OF ENGINEERS
332 MINNESOTA STREET, SUITE E1500
ST. PAUL, MN 55101-1323

02/23/2023

Regulatory File No. MVP-2011-00424-RLG

Metropolitan Airports Commission
C/o Bridget Rief
6040 28th Avenue S.
Minneapolis, MN 55450

Dear Bridget Rief:

This letter regards an approved jurisdictional determination for the MAC Airlake LVN site. The project site is in Section 33, Township 114 North, Range 20 West, and Sections 3 and 4, Township 113 North, Range 20 West, Dakota County, Minnesota. The review area for our jurisdictional determination is identified as Wetlands 2, 3, 7, 8, 9, 10, 11, and 12 on the enclosed figures, labeled MVP-2011-00424-RLG Page 1 of 7 through 7 of 7.

The review area contains no waters of the United States subject to Corps of Engineers (Corps) jurisdiction. Therefore, you are not required to obtain Department of the Army authorization to discharge dredged or fill material within these areas. The rationale for this determination is provided in the enclosed Approved Jurisdictional Determination form. This determination is only valid for the review area described. You are also cautioned that the area of waters described on the enclosed Jurisdictional Determination form is approximate and is not based on a precise delineation of aquatic resources.

If you object to this approved jurisdictional determination, you may request an administrative appeal under Corps regulations at 33 CFR 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and Request for Appeal (RFA) form. If you request to appeal this determination, you must submit a completed RFA form to the Mississippi Valley Division Office at the address shown on the form.

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR 331.5, and that it has been received by the Division Office within 60 days of the date of the enclosed NAP. It is not necessary to submit an RFA form to the division office if you do not object to the determination in this letter.

This approved jurisdictional determination may be relied upon for five years from the date of this letter. However, the Corps reserves the right to review and revise the determination in response to changing site conditions, information that was not considered during our initial review, or off-site activities that could indirectly alter the extent of wetlands and other resources on-site. This determination may be renewed at the end of the five year period provided you submit a written request and our staff are able to verify that the limits established during the original determination are still accurate.

If you have any questions, please contact me in our St. Paul office at (651) 290-5276 or Rachel.Gralnek@usace.army.mil. In any correspondence or inquiries, please refer to the Regulatory file number shown above.

Sincerely,

GRALNEK.RAC
HEL.L.1590491
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Digitally signed by
GRALNEK.RACHEL.L.1590
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Date: 2023.02.23 15:49:30
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Rachel Gralnek
Project Manager

Enclosures

cc:

Ann Messerschmidt (LGU)
Jed Chesnut (BWSR)
Evan Barrett (AICP)